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that constituted breakthroughs in the development of modern biology and medicine, for the general reader.

URBAN DESIGN: The Architecture of Towns and Cities—Paul D. Spreiregen—Am. Inst. of Architects (McGraw), 243 p., illus. by author, photographs, \$12.50. Explores with the help of sketches and plans the history of urban design, organized by sections ranging from town squares and centers to circulation problems and solutions.

VACUUM SCIENCE AND ENGINEERING: Properties of Gases at Low Pressure; Vacuum Measurements; Design and Operating Features of Vacuum Pumps and Systems—C. M. Van Atta—McGraw, 459 p., illus., \$15. Coherent presentation of vacuum technology.

THE VINLAND MAP—Rand McNally, 38" x 22" sheet map in tube, \$3.50. Handsome reproduction of recently discovered 15th century example of Norse cartography, with place names and legends.

WATER, PREY AND GAME BIRDS OF NORTH AMERICA—Alexander Wetmore and others, foreword by Melville Bell Grosvenor—National Geographic Soc., 464 p., color photographs, paintings, \$11.95 direct to publisher, Dept. 280, Washington, D.C. 20036. Includes Bird Sounds of Marsh, Upland and Shore by Peter Paul Kellogg, on 33 1/3 rpm phonodiscs in pocket. Book describes 329 species.

WILLING WALKERS: The Story of Dogs for the Blind—Gordon Carter, introd. by Arthur J. Phillipson—Abelard-Schuman, 96 p., photographs, \$3.25. Tells boys and girls about the training and value of guide dogs.

INVENTION

Current U. S. Patents

► **THE U.S. INVENTOR** who made instant photographs without negatives has patented a controversial process for projecting colored pictures stereoscopically from two black and white films.

Dr. Edwin H. Land, founder and head of Polaroid Corporation, Cambridge, Mass., was awarded patent 3,221,599 and 3,221,600 for the process by the U.S. Patent Office in Washington, D.C.

Dr. Land uses black and white photographs in combination with various filters or light sources to produce images of scenes that appear to have the same colors as the original. However, only one or two colors as they are normally described are actually present.

Dr. Land's public demonstrations and scientific reports in the late 1950s on the method of two-color reproduction focused interest in color theory. Scientists were quick to note, however, that the possibilities and limitations of two-color photography had been known for some 40 years.

Two-color systems were widely used in the early days of motion pictures and a red-and-white system was patented in 1914.

A British mathematician, Nigel W. Daw, who has worked with Dr. Land, shared patent 3,221,600.

Covered in two other patents, 3,222,168 and 3,222,171, also awarded to Dr. Land, are methods for making positive prints and enlargements. The enlargements are obtained by projecting the image on a compressed material, such as rubber, then stretching the material after the image has been fixed.

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WOMEN AND THE SCIENTIFIC PROFESSIONS: The M.I.T. Symposium on American Women in Science and Engineering—Jacquelyn A. Mattfeld and Carol G. Van Aken, Eds.—M.I.T. Press, 250 p., \$6.95. Analyzes the reasons for the decline in the number of women in engineering and the sciences.

THE WONDERFUL DOLPHINS: Man's Oldest Underwater Playmates and Newest Scientific Discovery—John Bailey—Hawthorn Bks., 96 p., photographs, \$2.95. A rather anthropomorphic presentation of the smart mammal.

YEAR 1966: The Encyclopedia News Annual—Editors of News Front, foreword by Hubert H. Humphrey—Hammond, C. S., 256 p., 700 photographs, \$10. Reviews national and world affairs through mid-1965, includes research & development feature on probing the future.

YOU AND RELATIVITY—Mary Lou Clark—Childrens Press, 61 p., illus. by Bill Sanders, \$2.50. Attempts to help the young child visualize the concept of relativity.

YOU CAN BUILD YOUR OWN SAILBOAT—Donald Rouse and David Rouse, introd. by George O'Day—Harper, 87 p., photographs, diagrams, \$3.50. Handbook with simple, fully illustrated instructions by a father and his 12-year old son.

YOUR CHILD IS A PERSON: A Psychological Approach to Parenthood without Guilt—Stella Chess, Alexander Thomas and Herbert G. Birch—Viking Press, 213 p., \$4.75. Treats the years from birth through first grade, emphasizing the individuality of each child.

• Science News Letter, 88:407 December 25, 1965

Device for VTOL

A helicopter pioneer, Frank N. Piasecki, head of Piasecki Aircraft Corporation, Philadelphia, earned patent 3,222,012 for a device to deflect the slip stream on vertical takeoff and landing aircraft, or VTOL's.

The device fits on the tail assembly. Its novel vane arrangement makes the transition from forward flight to hovering positions for landing smoother than without the vane device.

Earlier this year the helicopter builder was granted another patent for the flying platform called the "Aerial Jeep" by the U.S. Army.

Other Interesting Patents

An improved process for analyzing chemicals by chromatography, in which the liquid is recirculated rather than run through only once, has been invented by Marcel J. E. Golay of Rumson, N.J. Rights to patent 3,220,164 were assigned to the Perkins Elmer Corporation, Norwalk, Conn.

The phonograph pickup cartridge now being used on record players marketed by General Electric Company earned patent 3,220,736 for William A. Cavagnaro of Decatur, Ill. Also assigned to General Electric, by Roy Dally of Warrensburg, Ill., were patents 3,220,737 and 3,220,738 covering the stylus used as a replacement.

Joseph T. McNaney of La Mesa, Calif., has devised an image converter that changes infrared radiation into visible light using optical fibers. His invention was awarded patent 3,222,520.

A package containing "chaff" that can be tossed from an airplane, thus dispersing the contents to make radar detection of the aircraft more difficult, earned patent 3,221,875. Elmer G. Paquette of Cambridge, Wis., assigned rights to the Government through the Secretary of the Air Force.

• Science News Letter, 88:410 December 25, 1965