

# Books of the Week

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ALSOS—Samuel A. Goudsmit—*Schuman*, 259 p., \$3.50. The startling story of the special scientific intelligence mission to discover for the U. S. Army what progress German scientists had made toward war uses of nuclear fission.

AMERICAN PHARMACY—Edited by R. A. Lyman—*Lippincott*, 379 p., illus., \$7.00. This book supplements Vol. I; it contains detailed information on advanced pharmacy, including medical and surgical supplies and a chapter each on dental supplies and animal health pharmacy.

FISH PONDS FOR THE FARM—Frank C. Edminster—*Scribners*, 114 p., illus., \$3.50. The Chief of the Northeast Regional Biology Division, U. S. Conservation Service, describes design, construction, stocking, and management of the fish pond for productive purposes.

HIGHER EDUCATION FOR AMERICAN DEMOCRACY: Vol. I—Establishing the Goals—A Report of the President's Commission on Higher Education—*Govt. Printing*, 103 p., paper, 40 cents.

HIGHER EDUCATION FOR AMERICAN DEMOCRACY: Vol. II—Equalizing and Expanding Individual Opportunity—A Report of the President's Commission on Higher Education—*Govt. Printing*, 69 p., paper, 35 cents.

INDIAN SKELETAL MATERIAL FROM THE CENTRAL COAST OF PERU—Marshall T. Newman, with a synopsis of the archaeology by Gordon R. Willey—*Peabody Museum of American Archaeology and Ethnology*, Vol. XXVII, No. 4, 71 p., plates unpagged, illus., paper, \$2.50.

JANE'S FIGHTING SHIPS: 1946-47—*Macmillan*, 471 p., illus., \$20.00. The latest edition of this book of naval sea craft contains almost 600 new illustrations, with appropriate textual revisions.

LOOK AT AMERICA: THE MIDWEST—Editors of Look, in collaboration with Louis Bromfield—*Houghton, Mifflin*, 392 p., illus., \$5.00. Excellent photographs, maps, and explanatory text are included in this pictorial study of the Midwest, describing its numerous points of scenic, historical, cultural, and industrial interest.

RADAR AIDS TO NAVIGATION—John S. Hall—*McGraw-Hill*, 389 p., illus., \$5.00. This second volume of the Massachusetts Institute of Technology's Radiation Laboratory Series discusses radar in relation to problems of pilotage and navigation.

SCIENCE AND PUBLIC POLICY: Vol. 2—The Federal Research Program—*Govt. Printing*, 318 p., paper, 55 cents. Presents for the American people an insight into the diverse scientific research programs initiated by the U. S. Government in the physical and biological sciences.

SCIENCE AND PUBLIC POLICY: Vol. 5—The Nation's Medical Research—*Govt. Printing*, 118 p., paper, 25 cents. Research activities of the Federal Government in medicine and related scientific fields are described in this final report of the series, which recommends that national expendi-

tures in this direction be tripled at an early date.

TREES AND TOADSTOOLS—M. C. Rayner—*Rodale*, 91 p., illus., \$2.50. An interesting account of the symbiotic life patterns existing between certain types of fungi and the trees beneath which they thrive.

UNDERSTANDING OUR ENVIRONMENT—Franklin B. Carroll—*Winston*, 313 p., illus., \$2.00. The first of a series of elementary general science and biology books, dealing with all phases of natural science.

UNDERSTANDING OUR WORLD—Franklin

## ASTRONOMY

# Galaxies Have Rosy Tint

➤ DISTANT galaxies, systems of billions of stars like the Milky Way system of which the earth is a part, have been found to be distinctly redder than nearby ones. This reddening makes the galaxies appear fainter to the photographic plate than they would otherwise be. It may mean that the 200-inch telescope on Mount Palomar will not penetrate space so far as was estimated.

The cause of the reddening is not known. This reddening is over and above the well-known red shift of the spectrum lines due to the apparent expansion of the universe and is several times greater than would be expected from the red-shift alone.

This rosy tinting of distant galaxies is important as the theory of the expanding universe is based on estimates made from the apparent magnitudes of distant galaxies. If these galaxies get progressively dimmer than normal from the distance increase alone, then the magnitudes and resulting distances must be drastically revised.

The reddening of distant star systems was found through use of a dry-ice refrigerated photoelectric photometer placed at the focus of the 100-inch telescope on Mount Wilson. The observations were carried on by Dr. Joel Stebbins and Dr. A. E. Whitford, both of Washburn Observatory, University of Wisconsin. Drs. E. P. Hubble and Walter Baade, both of Mount Wilson Observatory, advised them and helped with the work.

The colors of the galaxies, the Washburn Observatory astronomers reported at the American Astronomical Society

B. Carroll—*Winston*, 412 p., illus., \$2.24. Explorations into science on a more comprehensive and inclusive level than that considered in the previous volume.

UNDERSTANDING THE UNIVERSE—Franklin B. Carroll—*Winston*, 550 p., illus., \$2.48. A further inquiry into the nature of the world, and the earth's place in it.

WOMEN'S PREFERENCES AMONG SELECTED TEXTILE PRODUCTS—Bur. of Agric. Econ., Dept. of Agric. Misc. Publ. 641—*Govt. Printing*, 124 p., paper, 25 cents.

THE WORKS OF THE MIND—R. B. Heywood—*Univ. of Chicago*, 246 p., \$4.00. First delivered as a series of lectures at the University of Chicago, these chapters discuss the creative processes through which enduring results may be achieved in the fields of the fine arts, government, education, scholarship and creative thought.

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meeting in Columbus, Ohio, were determined by measuring the relative brightnesses through yellow and blue filters. The new reddening is proportional to the shift of the spectrum lines, and has been followed for the nearest examples, comparative neighbors of the sun less than a million light-years away, to a member of the cluster of galaxies in the constellation of Bootes, two hundred million light-years away.

This reddening, small though it is, is very hard to explain. One tentative explanation is that the huge reaches of intergalactic space contain dust and gas like that in the galaxy. But the required quantity of "intergalactic dust and gas" which would account for the observed reddening would increase the total calculated amount of matter in the universe by as much as a thousand times. This might require an actual reduction in the theoretical size of the universe.

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