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APPROACHES TO NATIONAL UNITY, Fifth Symposium—Lyman Bryson and others, eds.—*Harper*, 1037 p., \$5. Prepared for the fifth meeting of the Conference on Science, Philosophy and Religion in their Relation to the Democratic Way of Life.

CHECK-LIST OF THE BIRDS OF NEBRASKA—F. W. Haecker, R. Allyn Moser and Jane B. Swenk—*Neb. Ornithologists' Union*, 40 p., 50 cents. Reprinted from the *Nebraska Bird Review*, vol. 13, May, 1945.

CHICAGO NATURAL HISTORY MUSEUM: Report of the Director to the Board of Trustees for the year 1944—*Chicago Natural Hist. Museum*, 133 p., illus., paper, \$1. A continuation of the report series of Field Museum of Natural History.

HIDDEN HUNGER—Icie G. Macy and Harold H. Williams—*Cattell*, 286 p., \$3. The tragedy of the unbalanced diet. Humanizing Science Series.

PLANT GROWTH—L. Edwin Yocum—*Cattell*, 203 p., illus., \$3. The relationship between the laws of nature and the growth of plants, written for the layman.

QUALITATIVE ANALYSIS: A Brief Outline—Harry N. Holmes—*Macmillan*, 52 p., \$1.10. Ninth ed., revised.

RACE RIOTS AREN'T NECESSARY—Alfred McClung Lee—*Public Affairs Comm.*, 31 p., paper, illus., 10 cents. Prepared in cooperation with the Amer. Council on Race Relations. Public Affairs Pamphlet No. 107.

THE STORY OF THE SPRINGFIELD PLAN—Clarence I. Chatto and Alice L. Halligan—*Barnes & Noble*, 201 p., illus., \$2.75. Education of one community for citizenship.

TIHUANACU, The Cradle of American Man, Vols. I and II—Ing. Arthur Posnansky—*Augustin*, 246 p., illus., \$25. Parallel English and Spanish texts. English trans. by James F. Shearer.

*Science News Letter*, August 11, 1945

### OPTICS

## Anti-Aircraft Guns Given Deadlier Aim

► "LIGHT SPLITTER" it is called, a rectangular glass plate the size of a calling card with an exceedingly thin chemical coating on one side; used, in pairs, to give deadly aim to American anti-aircraft guns. As used in a new range-finder, the pair of light splitters, or light dividers, serve to transmit to the eye-piece two separate images, one of one color, the other of a complementary color. By superimposing one on the other, the range is automatically determined.

To range the target, the gunner, by manipulating controls on the finder, brings the two images together until a single sharp natural-colored image appears. The finder is mounted on an automatic director which computes range and height factors, and aims the batter-

of guns by applying the firing data to them electrically.

The light splitter, known technically as a color-selective reflector, was developed by the Radio Corporation of America. It is used in the new U. S. Army M-10 range finder, development of which has already been announced. It is a direct outgrowth of an earlier development made by RCA for the solution of a Hollywood sound-film recording problem, made before the war.

The nature and series range of the selection of chemicals which create the

divider are a closely guarded secret, but upon putting to use a phenomenon which the functioning of the device depends causes a normal percentage of light to be reflected at the air-glass boundary of a glass element. It is known, also, that the dividing action is generated by the minutely-thin multiple-layer coating in conjunction with the air on its one boundary and the glass at the other, the glass itself performing no other important function except to furnish a mechanical support.

*Science News Letter*, August 11, 1945

"I can make a better Microscope"



Professor Gilman was startled by the statement of his guest, Charles A. Spencer. He had been exhibiting his prize possession—a microscope made by Chevalier of Paris.



That was in the fall of 1846. Often during the

following months, Dr. Gilman, a professor in the College of Physicians and Surgeons, New York, amused his friends with the story of the presumptuous backwoodsman who challenged the leading optician of France.

Six months later Spencer presented two objectives to the Professor.

Gilman placed them on his microscope and studied specimen after specimen. At last, bursting with excitement, he gave his verdict: "Why these are excellent! How did you do it?"

Charles Spencer took home to Canastota, New York, the first order ever given to an American for the manufacture of a microscope.

In another six months (October, 1847) the microscope was completed. On his way to deliver it, Spencer stopped at West Point to have the instrument tested by Professor J. W. Bailey, "father of microscopic research in America." Bailey was enthusiastic, acclaimed it "decidedly superior to Chevalier's" and added that it was at least equal to the Lowell instrument at Boston.

Thus Charles A. Spencer, self-taught and with only the experience gained in his homemade workshop, took his place beside the most experienced opticians of Europe.

Today, nearly a century later, the name Spencer is the hallmark of highest quality in scientific instruments. Research insures the perpetuation of the Spencer ideal.



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