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DISCOVERY IN EASTERN WASHINGTON OF A NEW LOBE OF THE PLEISTOCENE CONTINENTAL GLACIER

By Professor WILLIAM H. HOBBS
UNIVERSITY OF MICHIGAN

STUDIES made during the past field season[1] in eastern Washington have disclosed the presence there in Late Pleistocene time of a hitherto unsuspected lobe of the Cordilleran continental glacier. This lobe covered an area of nearly four thousand square miles and is to be known as the Scablands Glacier Lobe. It blocked the Spokane River of that time to impound the waters in Glacial Lake Spokane. This lake included the basins of Lakes Coeur d'Alene and Pend Oreille and extended across Idaho into Montana (see Map I). Its area was thirty-one hundred square miles. When the glacier had evacuated the Scablands, Lake Spokane expanded a distance of one hundred miles down the canyons of the Spokane and Columbia rivers to the site of Coulee Dam as Glacial Lake Leverett.

The lava plain which lies to the southwest of Spokane has a surface development almost unique, and has long been known to its inhabitants as the "scablands." To geologists of the late decades it is known as the "channeled scablands" from the apt description by Professor J Harlen Bretz,[2] who has de-

[1] With the aid of grants from the American Philosophical Society and the Geological Society of America. This preliminary notice is printed by permission.

[2] Of Dr. Bretz's many papers treating of the area the

gone conclusion that hydrogen peroxide is inhibitory to certain bacteria, mostly anaerobic and facultative anaerobic types devoid of catalase.[15] Many of the pathogenic cocci are of this type. There may, in certain surgical cases, be merits to the slow but steady generation of hydrogen peroxide as brought about by an enzyme system. The difficulties of preparation, however, would outweigh any, probably rather limited usefulness.

FRITZ LIPMANN
CORA R. OWEN
BIOCHEMICAL RESEARCH LABORATORY,
AND SURGICAL RESEARCH LABORATORIES,
HARVARD MEDICAL SCHOOL, MASSACHUSETTS
GENERAL HOSPITAL, BOSTON

SCIENTIFIC APPARATUS AND LABORATORY METHODS

A SIMPLE THREE-COLOR MIXER USING FILTERED COLORS

THE method of color mixing most commonly used in psychological laboratories is the rotating disc or color wheel. Though this method is excellent for many purposes, it has certain disadvantages inherent to the use of surface pigments: (1) mixtures are relatively low in saturation (particularly in the case of yellow produced by a mixture of red and green); (2) complementary mixtures are gray rather than white; (3) brightness can not be controlled independently of room illumination without sacrifice of saturation. These disadvantages can be avoided with mixtures produced with filtered colors.

A device which the author recently built uses an extremely simple principle to provide mixtures of three filtered colors. The general design would seem to be of potential value for such uses as (1) measurement of hue (and saturation) discrimination thresholds in both human beings and animals, (2) detection and analysis of color blindness, (3) specification of pigments in terms of three-color components by matching with three color mixtures, (4) classroom demonstrations of color mixing.

The optical system for accomplishing the trichromatic mixture is shown in Fig. 1. Gelatin color filters

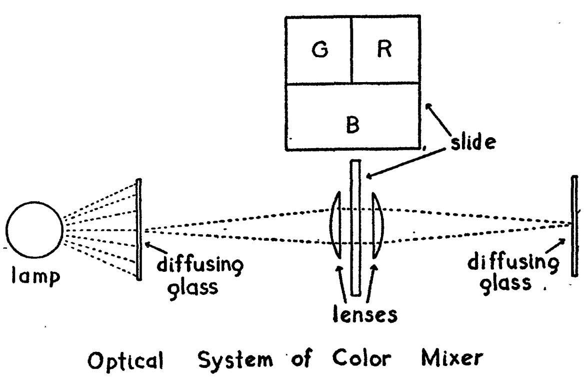

FIG. 1

are mounted between glass, forming a square slide. One upper quadrant of the slide is red, the other quadrant is green, and the bottom half is blue. The filters used in the author's apparatus are Wratten gelatin filters of numbers 29 (red), 47 (green) and 61 (blue).

This color mixing slide is supported on a two-way sliding mount between two lenses. Light from one diffusing screen is focused by the lenses upon another diffusing screen. Both screens are of flashed opal glass. Between the two lenses the light rays are parallel, and whatever colors intercept the light beam at this point become uniformly mixed on the second diffusing screen.

Two adjustments of the color-mixing slide are provided by means of levers moving along graduated scales. One lever moves the slide horizontally, thus changing the red-green proportion in the mixture. The other lever moves the slide vertically, thus adjusting the blue component. More specifically, by the two directions of movement, the slide can be adjusted to transmit any one of the three colors singly, or combinations of the three colors in any proportions. On the stimulus screen one can, therefore, obtain any color around or within the color circle. Due to the lack of homogeneity of the filtered colors, however, the resulting mixtures do not quite equal spectral mixtures in saturation. On the other hand, the mixtures far exceed in saturation those obtained on the color wheel.

That the color-mixing principle described here is successful was adequately demonstrated by a single unit built by the author while at the University of Missouri. Color mixtures of good saturation, moderately high brightness and uniform distribution were obtained.

The apparatus is particularly recommended for the demonstration of color-mixing principles. If intended for this purpose, the apparatus should be built so that the stimulus screen can be removed easily and the separate colors being mixed thus exposed to view.

WALTER F. GRETHER
SAN ANTONIO AVIATION CADET CENTER,
SAN ANTONIO, TEXAS

[15] J. W. MacLeod and J. Gordon, *Jour. Path. Bact.*, 25: 139, 1922.

BOOKS RECEIVED

BLACKWOOD, OSWALD. *General Physics.* Illustrated. Pp. viii + 622. John Wiley and Sons. $3.75.

SOPER, FRED L. and D. BRUCE WILSON. *Anopheles Gambiae in Brazil.* Illustrated. Pp. xviii + 262. The Rockefeller Foundation.