rounding terrain. Let us inquire if there are likely kinds of blunders in applying camouflage which would be easier for the colorblind observer to detect than the normal.

A fairly common scene within which it is required to conceal a position is made up of patches of reddish-brown earth and yellowish-green foliage. The variegated pattern composed of these patches is well adapted to the concealment of a position from a normal observer. Even though it be somewhat too light or too bluish, the normal observer could fail to detect it because of the larger red-green differences in the scene. But consider the appearance of the scene to a red-green blind. The normal green of foliage to him appears dark-yellowish brown; the normal reddish brown of earth also appears dark-yellowish brown to him. He is not sensitive to the red-green differences which for the normal produce a variegated pattern; instead he may see a nearly uniform yellowish-brown field. Any element of terrain which is too light or too bluish could be quite conspicuous to such an observer. It is therefore possible to believe that a colorblind observer may detect camouflaged positions not detectable by the normal observer.

Can Colorblindness Be Produced by Filters?

It is a natural question to raise whether this possible advantage of the colorblind can be duplicated by giving a suitable viewing filter to a normal observer. The filter required to suppress normal red-green discrimination is, of course, one which transmits only in the blue and yellow portions of the spectrum. If a filter could be found, for example, which transmits the double band 450 to 490 mμ and 560 to 585 mμ, it would render the red-green differences between grass and earth about one fifth as prominent and at the same time preserve about the same prominence of any yellow-blue differences. However, such a filter would transmit less than 10 per cent. of incident daylight, probably much less. It is a question whether any improvement in detection of lightness differences or yellow-blue differences would be obtained by a normal observer in this way even against a highly variegated red-green background. It should be noted that such a filter, although it would render a normal observer relatively blind to red-green differences, by no means makes him equivalent to either a protanope or a deuteranope. Such a filter would endow the subject of the experiment with a luminosity function having two separate maxima, one at about 470 mμ, the other at about 570 mμ, whereas the deuteranope has a nearly normal luminosity function whose maximum is at 555 mμ, and the protanope a similar function with the maximum shifted to about 540 mμ. It is possible to produce the phenomena of color blindness separately by means of filters, but they can not all be bestowed in this way upon a normal observer at the same time.

OBITUARY

WALTER BEAL ELLETT

Walter Beal Ellett, head of the department of agricultural chemistry at the Virginia Polytechnic Institute and chemist for the Virginia Agricultural Experiment Station, died in Blacksburg, Va., on May 12, 1943. Dr. Ellett was born at Central Depot, now Radford, Va., on November 11, 1874. He was graduated from Virginia Tech in 1894 and immediately made an instructor in chemistry, earning his master's degree in 1896. He went to Germany in 1900 and graduated from the University of Goettingen in 1904 with the M.A. and Ph.D. degrees. While in Germany he studied under Tollens, Wallach, Nernst and Fleischmann. He was made head of the agricultural chemistry department in 1915, succeeding the late Professor Robert J. Davidson. He had been chemist of the Virginia Agricultural Experiment Station since 1906. Dr. Ellett was a member of the American Chemical Society and a fellow of the American Association for the Advancement of Science. His research at Virginia Tech has resulted in practical contributions to the fields of soil fertility, nitrification, fixation of phosphoric acid by the soil and fermentation. His many researches have been published in the various scientific journals and as bulletins of the Virginia Agricultural Experiment Station.

H. H. Hill

Virginia Polytechnic Institute

RECENT DEATHS

Dr. Arthur Willis Goodspeed, professor emeritus of physics of the University of Pennsylvania, died on June 6 at the age of eighty-two years. Dr. Goodspeed was secretary of the American Philosophical Society from 1901 to 1935.

Dr. Albro David Morrill, professor of biology at Hamilton College from 1896 until his retirement in 1928 with the title emeritus, died on June 8 in his eighty-ninth year.

Dr. Fred W. Hinds, dean of the College of Dentistry of Baylor University, died on June 4 at the age of fifty-five years.

Sir Arthur Newsholme, from 1908 to 1919 principal medical officer of the London Local Government Board, died on May 17 at the age of eighty-six years.