filtration rate than has been observed might be anticipated if such were the case.

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THE EFFECTIVENESS OF VARIOUS PARTS OF THE SPECTRUM ON THE MARINE TUBIFICID WORM *Clitellio arenarius* (O. F. Müller)

DWIGHT ELMER MINNICH
University of Minnesota

The reaction times of Clitellio have been measured for white light and four regions of the spectrum all of equal energy content. The four regions are red, 6500-7400 Å, yellow, 5600-6800 Å, green, 4500-5800 Å, and blue violet 3800-4850 Å. The mean reaction times of approximately 90 trials on 50 worms to each of the following, white, yellow, and blue-violet are identical, viz. ca. 1.05 seconds including the reaction time of the observer. This worm also responds to red, though this region of the spectrum affords a much less effective stimulus. Technical difficulties made it impossible to obtain reaction times. To green the reaction time is much shorter than to yellow or blue-violet, the mean being 0.83 seconds including the reaction time of the observer. Thus red is least effective, yellow more effective, green most effective and blue-violet less effective again. Worms which have been exposed to blue-violet for 15 minutes no longer respond to yellow. Such animals do respond to green, however, though much less vigorously than dark adapted worms. These facts are interpreted to mean that the photoreceptors of Clitellio contain but a single photosensitive pigment and that the worm, therefore, does not distinguish different wave-lengths.

DIFFERENT PIGMENTARY TYPES IN CRAGO AND THEIR HUMORAL CONTROL

F. A. BROWN, JR. AND V. J. WULFF
Northwestern University

Probably no decapod crustacean has a more complex integumentary chromatophore system than does the common shrimp, Crago. In spite of the fact that this crustacean has been subject to as much investigation of its chromatophore system as perhaps any other one yet we seem to know less about it than we do of other commonly investigated forms. We believed it profitable to re-investigate the problem in the light of the discovery that the sinus gland is the source of more than one chromatophorotropic principle[1] and that the commissural ganglia