A STUDY OF THE PURKINJE PHENOMENON WITH SPECTRAL LIGHTS, A DISSERTATION

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A STUDY OF THE PURKINJE PHENOMENON WITH SPECTRAL LIGHTS, A DISSERTATION

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A DISSERTATION

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DOCTOR OF PHILOSOPHY

DEPARTMENT OF PSYCHOLOGY

BY

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I. INTRODUCTORY STATEMENT

The present study of the Purkinje phenomenon grew out of a desire to work over, with the use of reflected spectral lights, the field which had already been covered many times by experimenters who used pigments or direct spectral lights. The paper will first briefly review the work which has been done by these investigators. This will be followed by a discussion of brightness criteria and their relation to this problem. The experiments performed in the course of the investigation will be described and their results analyzed, and the paper will close with a formulation of the conclusions derived therefrom. The experiments here described were performed during the academic year, 1910–11, and the historical sketch and bibliography cover the period ending Jan. 1, 1912.

The Purkinje phenomenon may be provisionally defined as the changes in color and brightness undergone by the spectrum when its light-intensity is diminished during total or partial dark-adaptation of the eye of the observer. These changes are roughly describable as a relative darkening of the less refrangible end of the spectrum and a relative brightening of the more refrangible; that is, the brightest point in the spectrum shifts from yellow to the region of the green.