

1933

Discrimination of Relatively Pure Spectral Colors by Normal and Color-Blind Subjects

A. A. Benedict

Iowa State College

Copyright © Copyright 1933 by the Iowa Academy of Science, Inc.

Follow this and additional works at: <https://scholarworks.uni.edu/pias>

Recommended Citation

Benedict, A. A. (1933) "Discrimination of Relatively Pure Spectral Colors by Normal and Color-Blind Subjects," *Proceedings of the Iowa Academy of Science*, 40(1), 148-148.

Available at: <https://scholarworks.uni.edu/pias/vol40/iss1/72>

This Research is brought to you for free and open access by the Iowa Academy of Science at UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

DISCRIMINATION OF RELATIVELY PURE SPECTRAL
COLORS BY NORMAL AND COLOR-
BLIND SUBJECTS

A. A. BENEDICT

Various methods for testing color blindness have been devised. In many of the tests commonly used, the light that reaches the retina of the subject's eye is reflected from bodies in which selective reflection and absorption of the pigments determine the wave lengths acting as a stimulus. It was thought worth while to try a series of tests in which narrow bands of relatively pure spectral colors were viewed directly. The apparatus for this purpose consisted of a constant deviation wave length spectrometer and a polarization spectrophotometer using the Brace prism.

In addition to the test mentioned above, which was given to both the normal and color-blind subjects, the Ishihara, Holmgren, and Nagel tests were used for the color-blind subjects. A study of the comparison of these tests is being made to determine the degree of correlation.

IOWA STATE COLLEGE,
AMES, IOWA.

PASCHEN-BACK EFFECT OF HYPERFINE STRUCTURE AND POLARIZATION OF RESONANCE RADIATION; CADMIUM ($6^1P_1 - 5^1S_0$)

N. P. HEYDENBURG

Because of the Paschen-Back effect of the hyperfine structure of the odd isotopes, the polarization of cadmium $\lambda 2288\text{A}$ resonance radiation excited by plane polarized incident light changes from 76.7 per cent in zero field to 100 per cent in a strong field parallel to the electric vector of the exciting light. The experimental results agree very closely with computations based on Goudsmit's modification of Darwin's theory of the Paschen-Back effect and give for the separation of the two levels into which the 6^1P_1 level of Cd (odd-isotopes) is split a value of $12.6 \times 10^{-3} \text{ cm}^{-1}$. From this result and Schüler's measurements of the hyperfine separations of the triplet lines $6^3P_{0,1,2} - 6^3S_1$ the constants a and b giving the interactions of the p and s electrons, respectively, from Goudsmit's **equation**