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Visual Acuity Measurements with the Betts Test Cards

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VISUAL ACUITY MEASUREMENTS WITH THE BETTS TEST CARDS

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Three commonly accepted notations for visual acuity are: (1) the Snellen System, which follows an arithmetic progression, (2) the Clason Decimal System, which bears a constant relationship to the Snellen System, and (3) the Snell and Sterling System, which follows a geometrical progression and is commonly referred to as the system of the American Medical Association.

Visual acuity is indeed difficult to measure and many types of acuity tests have been devised. One such test, which is administered on the stereoscope, has been devised by Betts, Director of Teacher Education, State Normal School, Oswego, N. Y., who worked jointly with the Keystone View Company of Meadville, Penn. The principle of the Betts tests is the ability to resolve a black dot set within a target when placed in the stereoscope.

In tests that were made the Betts acuity test was given simultaneously with the standard Clason acuity tests and curves were plotted showing the relationship between the two. Measurements were made on 5000 persons in connection with automobile drivers' tests given in several states.

A theoretical straight-line relationship exists between the two tests. The actual curves obtained show that the Betts tests give an acuity greater than the standard Clason values up to a point of 40 per cent Clason acuity and from there on the Betts values are less than the Clason.

An analysis of the cards was made in an attempt to determine the reason for the form of the curves obtained in the tests and to aid in designing an acuity test on the stereoscope that will be corrected to agree with the theoretical straight-line relationship. Since enough cards of the same type were not available to obtain a complete statistical analysis the conclusions are only generalizations, but enough measurements were taken to give some indication of the weaknesses to be overcome.

Measurements were made of the target diagonals (their largest dimension), of the separation between targets, and of dot diameters. The latter were made with a microscope and were found to be most important. Aside from finding that the dot diameters did

not diminish in accordance with their correct diminishing ratio, it was found that one of the dots was entirely out of order on its own curve. The straight line point-to-point curves obtained from the comparative tests showed this same discrepancy.

For complete data, curves, and results refer to the paper in the Physics Section entitled: "Psycho-physical Analysis of the Betts Visual Acuity Test," p. 191 of this volume.

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A STUDY OF EMOTIONAL RESPONSES TO MUSIC

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A group of sixty-five undergraduate students in psychology were given an opportunity to listen to four recorded symphonic selections and their subjective emotional responses were studied, in order to secure answers to the four following questions. The answers to the questions, as found through this experiment will follow the statement of each question. 1. Do musically trained people respond more or differently to emotional aspects of music than do the untrained? No significant differences between the two groups were found in this regard. 2. Is training necessary in order that one may sense the emotions that a musical selection is supposed to portray? This study shows that trained subjects did not do better than untrained subjects. However, in some selections neither group did very well. 3. What differences are there in the patterns of emotions stimulated by different selections? A wide variation in adjectives used to describe emotions was noted. However, there was a certain amount of similarity as to the general pattern structure in three of the four selections for both trained and untrained groups. 4. Are there generalized types of response to music that characterize different people? If so, does training bear any relationship to these types? In this group of subjects it was found that men tend to respond to music in an objective manner more than do women, who tend more towards an emotional response. The trained group tends to respond more objectively than does the untrained group.

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