

DALTONIANA

NEWSLETTER

OF THE INTERNATIONAL RESEARCH GROUP ON COLOUR VISION DEFICIENCIES

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LITERATURE SURVEY

Two-band model of heterochromatic flicker, by D.H. KELLY and D. VAN NORREN (Stanford Research Institute, Menlo Park, California 94025, USA, and Institute for Perception TNO, Kampweg 5, Soesterberg, Netherlands), J. opt. Soc. Amer. 67/8, 1081-1091, 1977.

By adjusting the relative amplitudes of red and green sine-wave stimuli that were flickering in opposite phase, conditions were obtained varying from purely chromatic (red-green) stimulation through each "silent-cone" condition to purely luminous (homochromatic) stimulation. Also the effects of adapting backgrounds were tested in each condition. The general conclusion is that flicker sensitivity is probably controlled by the pathways of the proximal retina, not by the temporal characteristics of the cone cells. - Ingeborg Schmidt.

Rod photoreceptors detect rapid flicker, by J.D. CONNER and D.I.A. MacLEOD (Department of Psychology, University of California, San Diego, La Jolla 92093, USA), Science 195, No. 4279, 689-699, 1977.

Light-adapted rods detect flicker frequencies as high as 28 hertz. Thus rods can detect rapid flicker. The function relating rod critical flicker frequency to stimulus intensity contains two distinct branches, a rising low intensity branch and a rising high intensity branch connected by a plateau. This was demonstrated by using techniques that desensitize cones and reveal rod responses. Human rod vision may depend on two independent mechanisms. - Ingeborg Schmidt.

Chromatic patterns of cone photoreceptors (1976 Glen A. Fry award lecture) by R.E. MARC (Jules-Stein Eye Institute, University of California, Los Angeles, California 90024, USA) Amer. J. Optom. 54/4, 212-225, 1977.

By using a cytochemical probe that permits visualization of the responses of cone photoreceptors to light stimulation it has been possible to describe the distributions and patterns of blue-, green- and red-sensitive cones in a lower vertebrate, the goldfish and in a primate, the baboon. Knowledge of the cone mosaic and cone types is important in analysing the connections between cones and retinal neurons. - Ingeborg Schmidt.

Direct readout of spectral sensitivity for clinical and research purposes, by F. ZISMAN, D. CARDEN, K. BAXENDALE and P.E. KING-SMITH (Ophthalmic Optics Department, University of Manchester M 60 1QD, England), Amer. J. Optom. 54/1, 52-55, 1977.

A simple electronic system is described which performs automatically calculations of corrections for nonlinearity and nonneutrality of a neutral wedge for adjustment of a spectral test flash to threshold, and of a correction for the quantum intensity (or energy) of the test flash as the subject makes the spectral sensitivity setting. The sensitivity is recorded automatically on an XY plotter. The apparatus gives the clinician valuable data without considerable time and effort. - Ingeborg Schmidt.

The New Color Test (Le New Color Test), by Ph. LANTHONY (Paris), Bull. Socs Ophtal. Fr. 75, 217-221, 1975.

This new colour vision test consists of 100 moveable caps : 80 present different Munsell colours and 20 present different greys. The goal is to test hue and saturation discrimination. The 80 colours are the combinations of 20 hues with 4 saturation steps (Munsell chroma 2,4,6,8). The 20 greys range from 2 to 7.5 Munsell value (lightness). The neutral zones are defined by the confusion of the coloured samples with the greys. When saturation discrimination is lower the neutral zone is larger. The distinction between dichromats and anomalous trichromats can be made and the spectral luminosity functions can be assessed. - Jean Vola.

Clinical applications of the New Color Test (Applications cliniques du New Color Test), by Ph. LANTHONY (Paris), Bull. Socs Ophtal. Fr. 75, 1055-1059, 1975.

The New Color Test (N.C.T.) has the same meaning as the AO H-R-R (confusion of greys with colours of different saturations) and can be used instead of the HRR. It gives more information than the D-15 thanks to the saturation scale. The desaturated Panel 15 of Lanthony is a part of the N.C.T. The saturations of the standard D-15 lie between Munsell chromas 4 and 6 of the N.C.T. The N.C.T. is complementary to the FM 100 hue test. It can be used as the Sloan Achromatopsia Test. It is a quantitative test. - Jean Vola.

Instrumentation for the Farnsworth-Munsell 100 Hue test (JOSA letter), by G.B. DONALDSON (Dept. of Physics, University of Lancaster, Lancaster, England), J. opt. Soc. Amer. 67/2, 248-249, 1977.

An electronically scored modification of the Farnsworth-Munsell 100 Hue test that permits plotting and calculation automatically and quickly. The method treats the disks as a single continuous series ignoring the fixed discs, and the location is plotted rather than cap number. - Ingeborg Schmidt.

Validity of Pinckers' 100-Hue version of the Panel D-15, by W.E. HIGGINS and K. KNOBLAUCH (Pennsylvania College of Optometry, Philadelphia, Pennsylvania 19141, USA), Amer. J. Optom. 54/3, 165-170, 1977.

15 normals and 18 red-green deficient subjects, defined by the Nagel anomaloscope, were tested binocularly with the Farnsworth Dichotomous Panel D-15 test and with a version of this test consisting of 16 selected color chips from the Farnsworth-Munsell 100 Hue test as suggested by Pinckers (see also the abstract in Daltoniana No. 8, p. 8). The results indicate that the Pinckers 100 hue test is equivalent to the Panel D-15 test with respect to detecting and differentiating among the more severe red-green deficiencies. - Ingeborg Schmidt.

The Roth 28-Hue test, by J.F. AMOS and Th.P. PIANTANIDA (School of Optometry, University of Alabama, University Section, Birmingham Alabama 35294, USA), Amer. J. Optom. 54/3, 171-177, 1977.

Protans, deutans and tritans exhibit slightly different confusion axes on the Roth 28-hue test (Roth, A. Bull. Soc. Ophthal. France 66, 231-238, 1966) and the Farnsworth D-15 test. The Roth test which uses every third color cap from the Farnsworth-Munsell 100 Hue test, may be a good compromise between the D-15 and the FM 100-Hue test, but more evaluation is needed. It appears to be superior to the D-15 test in the detection of acquired defects. - Ingeborg Schmidt.

Statistical observation on deficient color vision at the Children's Medical Center of Osaka City, by M. KOZAKI, K. HARADA, Y. YAMAZAKI, K. KOYAMA, H. MAKAGISHI, H. IWAI, T. SATO and H. FUKUI (Dept. Ophthal., The Children Medical Center of Osaka City, Japan), Jap. J. Clin. Ophthal. 29, 1217-1223, 1975.

This paper presents data on deficient color vision in children examined at the Children's Medical Center of Osaka City during the 9-year period from 1966 through 1974.

The color-deficient subjects totalled 332. Six-year-old children constituted the largest group in age distribution. Their primary concern was about the social aptitude after their color deficiency was detected at health checks in the school.

Higher-grade junior high students formed the next largest group. They came for advice about going on to senior high schools.

Evaluation for color vision was made using isochromatic charts (Ishihara, Okuma, TMC and HRR), color panels (100 Hue Test and Panel D-15), lantern test and anomaloscope. Among them, Ishihara's charts proved to be the best for the detection of color deficiency. For the grading of color deficiency, TMC chart was most valuable, followed by Okuma's chart and HRR. Quite frequently, these three tests gave different gradings for the same subject. The Panel D-15 test gave frequently false negative results. In the 100 Hue test, more than half the patients gave 251 points or more in gross deviation value. Numerous patients gave 4 or more wrong answers in the lantern test.

The majority of the patients were desirous of guidances for future social activity rather than medical treatment. We strongly feel the necessity to establish the diagnosis for color vision deficiency with the patients' need in mind. - Yasuo Ohta.

A study on the hereditary colour vision deficiencies (Een studie over erfelijke afwijkingen van het kleurenzien), by E.C. DE VRIES-DE MOL (Dept. Human Genetics, Med. Fac., Univ. Leiden, The Netherlands), Doctorate Thesis, ed. Dutch Efficiency Bureau, Pijnacker, The Netherlands, 1977.

A short historical introduction in chapter 1 is followed by a review of the studies reported in this thesis. Also a short description is given of the different test systems that have been used for the diagnosis of colour vision disturbances.

Chapter 2 presents a report on a study of the frequency of different types of red-green colour vision disturbances as they have been observed in a group of 1586 male subjects; 4.0% of these were deuteranomals, 0.9% deuteranopes, 1.4% protanomals and 1.0% protanopes. This group consisted of 1093 pupils of a technical school and 493 students. The student group consisted also of 416 girls, amongst whom one had a colour vision disturbance. The 64 deuteranomalous subjects could be divided into three groups, labelled "mild", "medium" and "severe", based on the findings mainly of the Ishihara test. The validity of the subdivision found some support in the average results per group of the HRR test, the F-15 test and the anomaloscope. It is suggested that the observed differences might be of a genetic origin.

In chapter 3 a total of 23 families are reported, of whom 15 originated from index cases presented in chapter 2. In these families 109 males had a colour vision defect. The variability of the results of colour vision testing of different affected individuals within one family seemed to be very much smaller than the variability within each of the groups reported in chapter 2. This is considered to be additional evidence for a relatively constant expression of a given gene for a colour vision defect within one family and for the existence of more allelic forms than those already postulated in chapter 2.

Chapter 4 is a compilation of three already published articles that resulted from some of the family studies undertaken on index cases from chapter 2. The first article describes a case of unilateral colour vision disturbance. None of the various explanations that were sought such as : ocular pathology, abnormal numbers of sex chromosomes, mosaicism with lyonisation and somatic back mutation were satisfactory. In the second article a family is presented with an autosomal dominant tritan defect, with a possible age-dependent and rather variable expression of the gene. In the third article amongst others a family is described in which a phenotypically normal mother has three types of sons : with normal colour vision, with deuteranopia and with protanomaly. It follows from this observation that recombination exists between the deutan and protan genes, and might also have occurred in another family. This is presented in chapter 5 in which the localisation of some genes on the X-chromosome is discussed. In this chapter also one family with G6PD deficiency and deuteranomaly in coupling, as well as seven families with haemophilia A or B and different forms of colour vision defects, each time in coupling, are being discussed. These families have already been described in chapter 3 in relation with the study of the constancy of genes for colour vision disturbances. The only recombinants occurred in the two families with haemophilia B and a deutan defect. The observed findings confirm previously published results about the closeness of the genes for G6PD and deutan, for haemophilia A and deutan, and for haemophilia A and protan. With considerable caution it is postulated that possibly the genes responsible for deutan and protan colour vision defects might be situated on opposite sides of the closely linked genes for G6PD and haemophilia A.

Chapter 6 presents an analysis of the efforts that were undertaken to distinguish between different groups of hemizygotes and heterozygotes for colour vision deficiencies, making use of a portable instrument for the measurement of increment spectral sensitivity curves. The 97 investigated individuals belonged to 11 different groups : normal males, males with three different types of deutan disturbances, males with protanomaly and with protanopia, normal females and four groups of females proven to be heterozygous for deuteranomaly, deuteranopia, protanomaly and protanopia, respectively. With the aid of a computer a factor analysis was performed, from which it is concluded that possibly all four groups of heterozygous women might be distinguished from the group of normal females. Individual detection is not yet possible in many cases and will probably require a further refinement of the methods of investigation and analysis. - The Author.

A colour vision test for young children and the handicapped, by P. GARDINER (Guy's Hosp., London), Dev. Med. & Child Neurol. 15(4), 437-440, 1973.

Describes a simple screening test of colour discrimination suitable for children of school-entry age. The child watches cut-out plastic letters with Ishihara-like colour-confused plates. - Patrice M. Dunn.

The visual evoked cortical potential as a measure of stress in naval environments : III. The response to pattern and color, by J... KINNEY & C. MCKAY, U.S. Naval Submarine Med. Res. Lab. Report, No. 778, 1974.

Previous research has shown that it is possible to isolate a response to pattern from the visual evoked cortical potential. This study investigated the optimum conditions for yielding a pattern response and then applied the pattern response to a test of color vision in a total of 24 color-normal, 8 protanope, 1 tritanope, and 8 deuteranope Ss. Results show that Ss with normal color vision gave a response to pattern when the pattern was formed of either hue or luminance differences. Color defective Ss responded only to luminance differences and not to hue differences that they could not discriminate. The technique thus can be used as an objective measure of color vision. - Patrice M. Dunn.

Large-field trichromacy in protanopes and deuteranopes, by V.C. SMITH and J. POKORNY (Eye Research Laboratories, The University of Chicago, 950 East 59th Str., Chicago, Illinois 60637, USA) J. opt. Soc. Amer. 67/2, 213-220, 1977.

The authors investigate a phenomenon already noticed by W.A. Nagel (Zeitschrift f. Sinnesphysiol. 39, 93, 1905 and 41, 319, 1907) who although he was a deuteranope with a field of less than 2° extent became trichromatic with a field of 10°. They examined matches of spectral yellow to a mixture of red and green and dichromatic coefficients on protanopes and deuteranopes with field sizes of 1° to 8° using a modified Moreland Universal anomaloscope. It was shown that the failure to accept a large field match of 589 nm to 450 and 650 nm is not attributable to saturation differences between the two lights when large fields are used. The analysis of the data suggests that the large field matches are mediated by the dichromatic cone photopigments and a visual photopigment whose spectral sensitivity is that of rhodopsin. Matches on a 8° field of the primaries 545 nm and 670 nm in the mixture half to a series of 3 wavelengths, 610, 589 and 570 nm in the test half were not affected by a tenfold reduction of intensity, with the highest field luminance of about 5 cd.m⁻². The data suggest that large-field trichromasy is a general feature of protanopes and deuteranopes. - Ingeborg Schmidt.

The acquired (also called secondary) colour vision deficiencies (Les dyschromatopsies acquises, dites aussi "secondaires"), by A. ROTH (Besançon), Clinique ophtalmologique, 21-34, 1977.

This is an excellent post-graduate lecture covering not only the classical notions on the symptoms, the classification and the methods of examination of the acquired colour vision defects, but also references to the results of the Wald-Marré method and of Lanthony's New Color Test. Some interesting personal contributions are a fine analysis of the differential diagnosis of the acquired defects and the statement that in 4 fifths of the cases of diabetic retinopathy the colour vision defect precedes the first noticeable ophthalmoscopic changes. - Guy Verriest.

Blue and green cone mechanisms in retinitis pigmentosa, by M.A. SANDBERG and E.L. BERSON (Berman-Gund Laboratory for the Study of Retinal Degenerations, Harvard Medical School, Massachusetts Eye and Ear Infirmary, Boston, Massachusetts 02114, USA) Invest. Ophthalm. a. Visual Science 16/2, 149-157, 1977.

A comparison of thresholds determined by the blue and green cone mechanisms over a wide range of background intensities in 2 normal observers and in different genetic types of retinitis pigmentosa. Thresholds were measured in the fovea and 10° above the fovea with a 2.5° stimulus and either of 420 or 500 nm. Whenever cone thresholds were abnormal the thresholds determined by the blue cone mechanism (Stiles' π_1 and π_2) were more elevated than those determined by the green cone mechanism (π_3). Thresholds determined by the green cone mechanism were consistently more elevated at low background intensities than at intermediate and higher background intensities. The threshold elevations for the blue and green cone mechanisms relative to each other found on the retinitis pigmentosa patients could be simulated in normal observers tested with a single small stimulus. The findings support the idea that the summation pools for blue and green cone mechanisms are proportionally reduced below normal in retinitis pigmentosa at least in the perifovea. - Ingeborg Schmidt.

An examination of Ball's desaturation of intermittent monochromatic light in two patients with retinitis pigmentosa, by J.W. WALTERS (University of Houston, College of Optometry, Houston, Texas, USA), Amer. J. Optom. 54/1, 46-48, 1977.

According to Walters' hypothesis the Barley's brightness enhancement, the Broca-Sulzer phenomenon and the desaturation of intermittent trains of short-wavelength monochromatic light (the Ball-effect) were all the result of scotopic involvement at photopic levels (J.W. Walters, Vision Res. 11, 787-798, 1971). However, ERG's obtained when using red and blue flashes on no background and on a steady white background, the latter

to block the scotopic portion, on two patients with retinitis pigmentosa, seem to contradict Walters' hypothesis and to suggest a more complex mechanism. - Ingeborg Schmidt.

Using the Farnsworth 100-Hue colour test to get an early diagnosis of chloroquine maculopathy (in french), by P. BEC, D. BELLEVILLE, J.L. ARNE, V. PHILIPPOT and P. SECHEYRON (Service Ophtal., Hôpital de Purpan, Toulouse, France), Ann. Oculist. (Paris) 210, 291-296, 1977.

The authors compared the results of F.M. 100 Hue and adapto-electroretinogram (AERG) in 58 patients treated with chloroquine. They concluded that positive AERG means the presence of chloroquine in the retinal pigment epithelium and receptor cells, while colour vision disturbances indicate a lesion of sensorial cells. The AERG measures the risk that something will go wrong while colour vision deterioration reveals a real danger. - A. Pinckers.

Colour discrimination in ametropic eyes (in french), by P. CERNEA & F. CONSTANTIN (Dept. Oftal., 60 Boulevard 1 Mai, Craiova, Romania), Ann. Oculist. (Paris), 210, 383-386, 1977.

The authors investigate the discrimination stages corresponding to the hire for red, green and blue, as well as the extent of Rayleigh's match in 5 groups of subjects : normals, hypermetropes, myopes, subjects with aphakia and people with lens myopia.

In comparison to the normals, Rayleigh's match shifts to red in all hypermetropia and aphakia cases, while in myopia and lens myopia green has to be added.

The graphical representation of Rayleigh's match depending on the degree of ametropia shows that the match is more deviant and that the matching range is increased when myopia is heavier.

These investigations have been carried out by means of the AN-59 anomaloscope and the results have been correlated with the different modes of focalization of the radiations on the retina. - A. Pinckers.

Changes in psychological performance and blood chemistry on alcoholics during and after hospital treatment, by J.W. SMITH and T. LAYDEN (Shadel Hosp., Seattle, Wash.), Quart. J. Studies on Alcohol 33 (2-A), 379-394, 1972.

Administered a battery of tests to 69 35-56 yr old middle-class male alcoholics soon after hospital admission, after 1 wk of treatment, and after 6 wks of abstinence. After 1 wk significant improvements (all $p < 0.5$) were found in simple and cognitive reaction time, colour vision, Shipley-Hartford abstraction scores, conceptual and intelligence quotients, and on 8 of 15 items of a mood adjective checklist. At 6 wks further improvements were noted on all the above measures (except simple reaction time) and in addition hand steadiness improved and field dependence decreased. - Patrice M. Dunn.

"Flight of colours" in lesions of the visual system, by M. FELDMAN, L. TODMAN & M. BENDER (Mt. Sinai School of Med., City U., N.Y.), J. Neurol., Neurosur., & Psychiat. 37(11), 1265-1272, 1974.

In an experiment with 100 normal 15-70 yr old Ss, 17 Ss with congenital bilateral color blindness, and over 100 patients with various lesions of the visual system (e.g., in the retina, optic nerve, optic tract, optic radiation, and occipital lobes), a bright pocket flashlight was aimed directly into 1 eye at 2.2 cm distance for 10 sec. Ss then closed the eyelids and reported the sequence of after-image colors that had been observed. Lesions of the visual system which affected bilateral central color vision reduced or abolished the "flight of colors." It is suggested that this bedside test of each eye independently can be of value in detecting mild central vision defects. - Patrice M. Dunn.

Physiology of color vision and the pathological changes in reversible color blindness, a deficiency disease of the retina, by L.F. RAYMOND (121 W. Greenbrook Rd., P.O. Box 73, Caldwell, N.Y., 07006, USA), Ann. Ophthal. 7/4, 532-534, 1975.

R. presented his views on color blindness (see also Daltoniana No. 7 p. 5) at the VIIIth Annual Symposium of the Civil Aviation Medical Association, Guadalajara, Mexico, October 1973. He assumes that "reversible color blindness" is usually due to a cellular respiratory blockage from one or two causes. This blocking effect may be due to immunoglobulin. R. claims to have effectually treated a total of 24 cases by antigenic therapy which reestablishes the normal neurocellular respiration. He concludes: "My clinical experience indicates that the hereditary concept of color blindness cannot be valid." - Ingeborg Schmidt (for information).

Editorial Comment by STELL (School of Optometry, University of California, Berkeley 94720, USA), Optometric Weekly 68/10, 286-287, 1977.

In his comment to the paper by L.F. Raymond, abstracted above, St. criticizes that the criteria were not stated that were used to determine that a patient is cured and that R. has no basis whatsoever for challenging the hereditary concept of color vision defects. - Ingeborg Schmidt.

Are visual anomalies related to reading ability? by Th. GROSVENOR (School of Optometry, Indiana University, Bloomington, Indiana, 47401, USA), J. Amer. Optom. Assoc. 48/4, 510-517, 1977.

A review of the literature indicates that among other visual anomalies, which are of less interest for the readers of Daltoniana, also color vision anomalies tend to be associated with poorer than average reading performance in children.

The author experienced that young children whether learning-disabled or not have more difficulty performing the Farnsworth D-15 test than pseudo-isochromatic plate tests. - Ingeborg Schmidt.

Summary of a 3-year study of academic and school achievement between color-deficient and normal primary age pupils : Phase Two, by J. LAMPE, M. DOSTER and B. BEAL (Denver Public Schools, Dept. Health Services, Colo.), J. School Health 43(5), 309-311, 1973.

Summarizes a 4-yr study initiated in Denver with kindergarten and 1st grade groups to evaluate various test responses and their validity. The important relationship of color vision to early learning is evaluated. - Patrice M. Dunn.

Color Vision deficiency : A learning disability? by S. ESPINDA (Orange Unified School District, Calif.), J. Learn. Disab. 6(3), 163-166, 1973.

Hypothesized that color vision deficiency would be associated with inappropriate classroom behavior, and a higher frequency of referrals to programs for the educationally handicapped. Diagnostic color vision screening was conducted for 83 males in 11 classrooms for the elementary level educationally handicapped (EH) and for 139 males in 11 regular 3rd and 6th grade classrooms. Deficient color vision was found in 13.25% of EH and 5.04% of regular class ($p < .05$). The hypothesis was confirmed. - Patrice M. Dunn.

The psychological implications of being color blind, by C. SNYDER (U. Kansas), J. Special Educ. 7(1), 51-54, 1973.

Presents an autobiographical account of growing up with and compensating for color blindness. - Patrice M. Dunn.

A review of peripheral vision capabilities for display layout designers, by R.F. HAINES (Man-Machine Integration Branch, Ames Research Center - NASA, Moffett Field, Calif. 94035), Proceedings of the S.I.D. 16/4, 238-248, 1975.

Basic psychophysical vision data are presented on various capabilities of the normal human retina for use by display layout designers. Research areas reviewed include : detection sensitivity of achromatic and chromatic stimuli located in the periphery and viewed against unilluminated and illuminated backgrounds, static and dynamic peripheral visual acuity, peripheral motion sensitivity, recognition capability of various visual characteristics of targets located in the periphery, and visual response time (and missed stimulus data) within the entire dark-adapted binocular field of view. These data have been presented in a common format whenever possible and relevant spatial, temporal and intensity information is provided to help the reader more adequately relate the data to his own design situation. Areas that need further research are noted throughout the review. The paper concludes with an example how selected portions of the data reviewed

might be applied to an aircraft cockpit environment design situation and a description of a hand-held, optical viewer which "projects" preselected psychophysically derived response data upon the work surface to be designed. - The Author.

Designing illuminants that render given objects in prescribed colors, by N. OHTA and G. WYSZECKI (Division of Physics, National Research Council of Canada, Ottawa, Ontario KIA OR 6, Canada), J. opt. Soc. Amer. 66/3, 269-275, 1976.

A technique is used to design examples of spectral power distribution of illuminants that, when irradiating a limited number of given objects, render these objects in prescribed colors. - Ingeborg Schmidt.

A contact lens for the treatment of color vision defects, by D.L. DITMARS and R.J. KEENER (Optometry Service, Letterman Army Medical Center, Presidio of San Francisco, Calif. 94128, USA), Military Medicine 141/5, 319-322, 1976.

The authors used an X-chrom contact lens with a transmission range of 592 to 750 nm which was very near to that of red trial lens in their trial lens set (612 to 750 nm). Ten color deficient subjects were tested both with and without the X-Chrom lens, using the American Optical pseudoisochromatic plates (AOPIP), the Dvorine plates and the Hardy-Rand-Rittler test. Improvement in performance resulted with the X-Chrom lens : 2 mild deuterans passed the AOPIP test and 1 mild and one moderate protan and 2 mild and one medium deutan passed the Dvorine test. No differences in initial color vision test scores were noted between the red trial lens and the X-Chrom lens. Further study of this new lens by the military seems warranted. - Ingeborg Schmidt.

Letter to the editor, by H.I. ZELTZER, Can. Journ. Optom. 39/1, 3, 1977.

Z. comments to the study by La Bissoniere (s. Daltoniana No. 23 p. 7, 1976) reviewed by I. Schmidt in "Visual aids for correction of red-green colour deficiencies" (see Daltoniana No. 27 p. 6, 1977). He criticizes that La Bissoniere used a red trial lens instead of a red contact lens fitted to the patients eye and that he ignored the importance of a learning period. Z. believes that the reports of hundreds of successful wearers of the X-Chrom lens are more convincing than the information presented by La Bissoniere. - Ingeborg Schmidt.

Visual aids for correcting red-green colour deficiencies, by I. SCHMIDT, The Optician Vol. 173 no 4472, 7-12 and No. 4475, 32, 34-35, 1977.

A reprint of the article published in Can. J. Optom. 38, 38-47, 1976; see Daltoniana No 27 p. 6, 1977.

Color Vision. A bibliography with abstracts, 1964 - Jan. 1977. NTIS/PS-77/0039. National technical Information Service, US Department of commerce, Springfield, Virginia, USA.

A compilation of selected references on defective color vision, genetic characteristics, tests for color blindness, use of optical filters in enhancing color images, human engineering for military personnel, pilots and other operations and color vision requirements for various occupations. Ten of the 163 abstracts are new entries to a previous edition. - Ingeborg Schmidt.

Applied genetics for the practicing optometrist. Pt. I and II, by R.D. NEWCOMB and R.T. JOSEF (Univ. of Alabama, Medical Center, School of Optometry, Birmingham, Alabama 35294, USA), J. Amer. Optem. Assoc. 48 Pt. I 173-182, Pt. II, 635-641, 1977.

A brief and general review of some of the more common inherited ocular disorders, designed to serve as a guide for practicing optometrists. A short paragraph is dedicated to achromatopsia and to red-green color deficiencies. - Ingeborg Schmidt.

REPORT OF THE I.R.G.C.V.D. WORKING PARTY ON STANDARDS

The Working Party on Standards met in Parma to discuss progress with the proposed guide to colour vision tests and testing procedure. It was hoped that the project would be completed in time for the symposium but delays in correspondence between members have deferred completion. The working party discussed various aspects of the report so far presented. It was then decided to continue the project with the revised completion date as May 1979. No detailed report was given to members of the I.R.G.C.V.D. attending the Symposium. However it was agreed that the I.R.G.C.V.D. should meet the various expenses of the committee and an offer by Professor Maione to arrange the final publication of the report was gratefully accepted. Dr. W.O.G. Taylor retired from the Working Party and Dr. Joel Pokorny was co-opted. - Jennifer Birch.

ANNOUNCEMENT

OBJECTIVES OF PICTORIAL COLOR REPRODUCTION

The Second Technical Conference on "Objectives of Pictorial Color Reproduction" will be held by the Inter-Society Color Council in Williamsburg, Virginia, on February 5-10, 1978. Photography, color television, photocopying, and color printing generally do not exactly reproduce the colors of objects depicted. The limitations of these processes limit the accuracy of

reproduction, but accurate colorimetric reproduction is not usually the most desirable objective.

The purpose of this conference is (1) to provide an opportunity for workers in this field to present and discuss facts and theories that have emerged since 1971, (2) to discuss desirable objectives of pictorial color reproduction or find new directions for research, and (3) to disseminate information to those interested in applying current knowledge.

Topics considered will include visual perception under various viewing conditions, current approaches and problems in establishing objectives of pictorial color reproduction, methods of evaluating reproduction errors, and techniques for optimizing results within the constraints of the various media.

Invited papers will read by B. Swenholt, R.W.G. Hunt, K. Staes, W.L. Rhodes, LeRoy De-Marsh, E. Carlton Winckler, Joy Turner Luke and W.D. Wright.

REGIONAL SYMPOSIUM OF THE INTERNATIONAL RESEARCH GROUP
ON COLOUR VISION DEFICIENCIES

DRESDEN(GERMAN DEMOCRATIC REPUBLIC) 5th - 6th SEPTEMBER 1978

PRELIMINARY INSCRIPTION FORM

(to be detached from one of the 1977 issues of Daltoniana and to be returned before 31st MARCH 1978 to Dr. MARRE, Augenlinik der MAD, Fetscherstr. 74, 8019 DRESDEN, German Democratic Republic)

This regional symposium held additionally to the international symposia - of the I.R.G.C.V.D. is especially organized for the members of the socialist countries. It can also be attended by members and guests of other countries.

The main themes of this regional symposium will be :

1. Methods of examination of central and peripheral colour vision.
2. Practical aspects of colour vision.
3. Toxicology and colour vision.
4. Electrophysiological aspects of colour vision.

Free papers will be accepted.

Languages : English preferred, Russian and German possible (according to the practice of the society the authors are asked to insert for there oral presentation slides with English text). Abstracts of the papers have to be given to Dr. MARRE before the end of the symposium. They will be published in DALTONIANA.

PAPER AUTHOR(S) :
(one per form)
TITLE :
.....
.....

Theme 1, 2, 3, 4, free.
Wanted duration of oral presentation : 5, 10, 15 min.
Accomodation wanted for 0, 1, 2 persons

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