DALTONIANA

NEWSLETTER
OF THE INTERNATIONAL RESEARCH GROUP ON COLOUR VISION DEFICIENCIES

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Tweemaandelijks Tijdschrift

Nr. 28 - 1st april 1977

THIS ISSUE CONTAINS THE ACTUAL STATE OF THE SCIENTIFICAL PROGRAM OF THE PARMA SYMPOSIUM (PLEASE CHECK YOUR CONTRIBUTION AND SPEAKING TIME), LISTS OF PREFERRED TERMS AND OF TERMS TO BE AVOIDED FOR YOUR PARMA PAPER, AND THE FIRST ANNOUNCEMENT OF A REGIONAL IRGCVD SYMPOSIUM IN DRESDEN

LITERATURE SURVEY

Some effects of chromostereopsis on stereoscopic performance, by R.B. MATTAS, Ph. D. thesis, Catholic Univ. of America, 1975. 98 pp. Univ. Microfilms 75-13, 628.

Revolves around improvement of chromatic stereo performance by nullifying the anomaly (under conditions of microscope use). Chromastereopsis is defined as "a visual phenomenon of perceiving different colors at different distances even though they are actually on the same plane". - From the Rev. sens. Disab.

Psychophysical measurement of cortical color mechanisms not sensitive to spatial frequency, by G. MEYER (Neurosensory Laboratory, School of Medicine, State University of New York at Buffalo, Buffalo N.Y. 14214). Perception 5, 143-145, 1976.

Discussion of a report by Virsu and Haapasalo (Perception 2, 31-40, 1973) who found that the Blakemore and Sutton apparent spatial frequency shift (Science 166, 245-247, 1969) is not color specific. Also a McCollough effect was demonstrated that is not specific to spatial frequency. The author suggests that inadequate test procedures and a confusion between retinal and cortical adaptation negates these results. - Ingeborg Schmidt.

McCollough Effect : specificity of induction and line width, by A. DALE, D.E. ANDERSON and M.G. SMITH (Department of Psychology, Allegheny College, Meadville, Pennsylvania 16335) Perceptual and Motor Skills 42, 1211-1218, 1976.

The binocularly induced McCollough aftereffect was stronger when orientation hues were tested simultaneously than sequentially. The hues were considerably weakened in a monocularly tested group in comparison to a binocularly tested group. Also long-lasting orientation specific after-effects were reduced under monocular testing conditions when binocularly induced. The results support the idea that the effect appears to be mediated centrally and to be enhanced by simultaneous color contrast.- Ingeborg Schmidt.

Independence of channels in colour contrast perception, by B. ELLIS, G.J. BURELL et al. (Royal Aircraft Establishment, Farnborough), Nature 254, 691-692 (April 24, 1975).

Experiments were conducted with subjects viewing red and green displays at very high luminance. Contrast is apparently assessed independently of other channels. For display purpose (e.g., cockpits) contrary to belief green would not be superior to red. - From the Rev. sens. Disab.

Hue is an absolute code for young children, by M.H. BORNSTEIN (Dept. of Psychology, Yale University, New Haven, Conn. 06520, U.S.A.), Nature 256, 309-310 (July 24, 1975).

Infants are able to code wavelength absolutely by apparent hue, and also respond to wavelength changes according to a set of basic absolute hue codes. - From the Rev. sens. Disab.

Study on color naming test for congenital color defectives (1) Dvorine's Nomenclature Test, by K. HUKAMI (Dept. Ophthal., Kyoto Prefect. Univ. Medicine), Acta Soc. ophthal. jap., 79/9, 1207-1212, 1975.

Forty-seven protans and 133 deutans have been sujected to Dvorine's Nomenclature Test. Dichromats have less ability to name colors than anomalous trichromats, but some dichromats respond correctly to all colors used in this test, while some anomalous trichromats make much errors. The color namings of subjects who passed the D-15 test resemble those of anomalous trichromats while that of subjects who failed the D-15 resemble those of dichromats. The cases classified as mild by the Okuma, T.M.C. and H-R-R plates respond correctly to this test, while those classified as severe respond wrongly. The remaining cases respond variously. Thus, there is a close correlation between the results of the tests. Unsaturated colors are much more mistaken by color defectives than saturated ones. Purple is mistaken for blue, brown and gray for green, but blue, yellow and green are hardly misinterpreted. - Yasuo Ohta.

Assessment of the Color Discrimination Test as an aptitude test. (4) Modified methods, by K. HUKAMI (Dept. Ophthal., Kyoto Prefect. Univ. Med.), Acta Soc. ophthal. jap. 79, 110-114, 1975.

Four modifications were brought to the Color Discrimination Test. (1) The 96 colors were otherwise divided into 4 panels : the colors in 2 panels (Nos. 13-36, and Nos. 61-84) confused deutans at a high rate and the colors in the other panels (Nos. 37-60, and Nos. 85-12) hardly confused them. (2) The 96 colors were again divided into 4 panels : the protans were confused at a high rate by the colors of 2 panels (Nos. 16-39, and Nos. 64-87), but the colors in the other panels (Nos. 40-63, and Nos. 88-15) hardly confused them. (3) Forty-eight colors were chosen from the 96 ones, namely the odd numbered ones (Nos. 1, 3, 5, etc. to 95). They were separated into 2 panels. (4) In this test only 24 colors (Nos. 1, 5, 9, 13 etc. to 93) were used in one panel. In all these modified tests total error scores were calculated as in the original test; low scores were recorded in those who passed the D-15 test, and high scores in those who a failed the D-15. - Yasuo Ohta.

Assessment of the Color Discrimination Test as an aptitude test. (5) Discussion and conclusions, by K. HUKAMI (Dept. Ophthal., Kyoto Prefect. Univ. Med.), Acta Soc. ophthal. jap. 79, 480-485, 1975.

In this study the Color Discrimination Test was investigated as an aptitude test. The total errors scores obtained from the original method did not show characteristic features for protans and deutans. Two indices exhibited the patterns displayed on the diagram of the test. Other indices, which were calculated on the above mentioned indices and total error scores, were deduced, but did not correlate with the results of several color vision tests. Then modified tests were introduced : their total error scores were just correlated with pass or fail of D-15 Test, the high score groups corresponding to the fail-group and the low score groups to the pass-group.

In some modifications of the Color Discrimination Test, dichromats and severe anomalous trichromats are confused by colors on the opposite sides of the color circle : this is equivalent to failing on the D-15. On the other hand, as mild anomalous trichromats are not confused by those colors, their color discrimination abilities are estimated by the test. However, the results do not separate them clearly from the normals.

As a consequence, the Color Discrimination Test has not excellent characters as aptitude test, either in the original as in the modified methods. The Panel D-15 Test is to be preferred as aptitude test. - Yasuo Ohta.

Portable photodiode apparatus for investigating the critical frequency of the light flicker fusion (CFFF)", by N.N. PIVOVAOY and V.K. ZHDANOV (All-union ophthalmological Research Institute and C.V. Kravkow Laboratory of Physiological optics of the H. Helmholtz Research Institute for Ophthalmology, Moscow) (in Russian) Vestn. oftalm. No. 3, 85-89, 1976.

Description of a portable apparatus for measuring the CFFF. Color flicker light produced by photodiodes of red, orange and green color are mounted so that they can be moved along a perimeter arc. The light impulses are of approximately 40 nt and of variable duration. The apparatus was tested on 50 healthy persons and on 92 patients with different eye diseases, of 20 to 68 years of age, and also on 5 normal volunteers on whom the CFFF was measured while the intraocular pressure was increased artificially. The apparatus is recommended especially for early diagnosis of retrobulbar neuritis and for detection of a beginning atrophy of the fibers of the papillomacular bundle in glaucoma. - Ingeborg Schmidt.

Visually evoked potentials : theory, techniques and clinical application, by S. SOKOL (Department of Ophthalmology, Tufts- New England Medical Center, Boston, Mass.) Survey of Ophthal. 21/1, 18-44, 1976.

A review on the visually evoked potentials (VEP) which are more specific than the EEG and more sensitive to changes in the visual stimulus. The VEP provides information unavailable by other methods. Among others it is of special value in the area of color blindness. Theory, techniques and instrumentation are described. - Ingeborg Schmidt.

Tritanopia, by M. ALPERN (University of Michigan, Ann Arbor, Michigan 48104, U.S.A.), Amer. J. Optom. 53/7, 340-349, 1976.

This article appeared in a special issue of the Amer. J. Optom. dedicated to Glenn A. Fry. The author analyzes the problem why the color-matching functions of individual tritanopes differ significantly from those predicted on the base of the assumption that the two cone pigments of the tritanopes are those he has in common with the standard observer. The differences cannot be explained completely by the abnormal luminosity curve of the standard observer nor by abnormalities in transmissivity of the eye media. The results are consistent with the view that there are a variety of different long- and medium-wave sensitive cone visual pigments among different tritanopes. - Ingeborg Schmidt.

Rod monochromatism- An incomplete form, by V. GODEL, L. REGENBOGEN, A. ADAM and R. STEIN (Dept. Ophthal.,Tel Aviv University School of Medicine, Israel), Journ. Pediatr. Ophth. 13/4, 221-225, 197[illegible].

A 17 years old man had an incomplete form of rod monochromatism. Visual acuity was normal, nystagmus and photophobia were absent. The fundus and the visual fields were normal. On the Ishihara charts he saw only the first number "12". He was unable to arrange the Panel D-15 in any characteristic pattern. On the Pickford-Nicolson anomaloscope he accepted in each of the three tests, red-green, green-blue and yellow-blue, both endpoints as excellent matches to the respective standard halves of the viewing field, provided that their luminances were properly adjusted. In the ERG the threshold sensitivity in white and blue lights was normal but the first portion of response in red light was absent. The dark adaptation curve has a small rod-cone break at 3 min and a fast drop in sensitivity with a normal terminal level. - Ingeborg Schmidt.

Effects of sound stimuli on color vision, the visual field and acuity, by J.E. LETOURNEAU and M. ARTIZZU, Atti Fond. G. Ronchi 29, 707-712, 1974.

A short and timely review, valuable moreover for international content (see, e.g., S.V. Kravkov's contributions). As late as 1974, Letourneau and M. Millodot were reporting a diminution of achromatic visual field, though not statistically significant, resulting from sound exposure (Eye, Ear, Nose, and Throat Monthly 53, 49-51). Lazarev (cited by Kravkov, 1966) has remarked (inversely) on the influence of visual stimuli on audition. - From Rev. Sens. Disab.

An acquired color defect of the opponent-color system, by P.E. KING-SMITH, K. KRANDA and I.C.J. WOOD (Ophthalmic Optics Dept., Univ. of Manchester Inst. of Science and Technology, PO Box 88, MANCHESTER M60 1QD, England), Invest. Ophthal. 15, 584-587, 1976.

An acquired unilateral color defect in a 22-year-old man has been investigated with standard clinical tests and by using techniques which, it is thought, test specifically for the sensitivity of the luminance and opponent-color systems. The spectral sensitivity of the defective left eye, using 1° 200 ms. test flashes on a white background, has a single broad peak at about 550 nm and resembles the photopic luminosity curve; in contrast, the normal curve, measured in the same conditions, has three peaks at about 440, 520 and 600 nm. However, the subject's spectral sensitivity curve for detecting 20 Hz flicker is quite normal and is similar to his curve for 200 ms. flashes. It has recentely been proposed that the three peaks of the normal curve for 200 ms flashes reflect the activity of the opponent-color system, whereas the single peak for flicker detection is related to the luminance system. The preceding observations may thus be interpreted in terms of a specific loss of the sub-

ject's opponent-color system and this would explain his poor color discrimination. His luminance system appears to be normal, and evidence is presented for the maintained function of red- and green-sensitive (but not blue-sensitive) cones. The spectral sensitivity of the subject's right eye is nearly normal, suggesting a precortical origin of the defect; however, there seems to be some abnormality in this eye, indicating a less developed form of the same defect. - The Authors.

On the quantitative and chromatic perimetry in affections of the optic tract, by A.S. NOVOKHATSKY and V.M. ZAKHARCHENKO (W.F. Filatow Research Institute of Ophthalmology and Cytological Therapy, Odessa) (in Russian) Vestn. oftalm. No. 3, 59-61, 1976.

A comparison of the value of quantitative and of color perimetry on 136 patients with affections of the optical pathways (neuritis, atrophy, papilledema) demonstrated the unquestionable advantages of the quantitative perimetry on 97.75% of the patients. In view of an early and effective diagnosis of lesions of the optical pathway the authors recommend to introduce into the clinical practice the quantitative perimetry as a more reliable and indicative procedure than color perimetry. - Ingeborg Schmidt.

Chromatic adaptation in the Goldmann perimeter; evaluation of congenital colour vision defects, by G. HANSEN (University Eye Clinic, Rikshospitalet, Oslo, Norway), Physica Norvegica 7 (No. 4), 207-210, 1974.

Combines static color perimetry with two-color threshold technique of Stiles. - From the Rev. Sens. Disab.

Evidence for acute effects of alcohol and marihuana on color discrimination, by A.J. ADAMS, B. BROWN, G. HAEGERSTROM-PORTNOV, M.C. FLOM and R.T. JONES (School of Optometry, Univ. of California, Berkeley, California 94720, Smith-Kettlewell Institute of Visual Sciences, San Francisco, California, 94115 and Langley Porter Neuropsychiatric Institute, University of California, San Francisco, California 94143, U.S.A.), Perception and Psychophysics, 20/2, 119-124, 1976.

Significant dose-related impairments in hue discrimination on the Farnsworth-Munsell 100 hue test were produced by acute doses of alcohol and marihuana. Nine persons with normal color vision as screened by the AO HRR test served as subjects. The post-drug changes were compared to the post-placebo changes. Hue discrimination was significantly altered by acute doses of alcohol (1.0 ml/kg) and marihuana (15 mg Tetrahydrocannabinol THC).

The drug-induced reduction in discrimination appears to be greatest in the blue region for both alcohol and marihuana; a second region of decreased performance is found in the yellow-green for alcohol and red- to-yellow-red for marihuana. The

changes are similar to those seen in mild acquired color-vision disorders associated with retinal disease. The impairment has a much shorter time course for marihuana. The transient nature of the reduced color discrimination raises practical problems in tasks which require stable color perception. - Ingeborg Schmidt.

Color vision in autosomal dominant hereditary optic atrophy, by N. OHBA, M. IMAMURA & T. TANINO (Dept. Ophthal., School of Medicine, Univ. of Tokyo), Acta Soc. ophthal. jap. 79/9, 1213-1224, 1975.

Six patients in a family with autosomal dominant optic atrophy were studied with special reference to color vision. Tritan deficiencies were found in all the patients by means of clinical color vision tests as the AO H.R.R. plates, the Panel D-15 and the 100-hue test. Two patients were further studied by means of quantitative tests as foveal luminosity curve, color confusions, neutral point, and wavelength discrimination : the results were similar to those described in subjects with congenital tritan defects. It was also observed that all patients had few trouble in vision, while the ophthalmological examination revealed only mild abnormalities, so that the disease might have been unrecognized without careful studies. These features would suggest the identity between autosomal dominant optic atrophy and congenital tritan defect, as hypothesized previously. However, there are some dissimilarities between the two entities : in the patients with autosomal dominant optic atrophy a concomitant red-green color vision defect is often added to the acquired tritan defect. It is thus concluded that autosomal dominant optic atrophy is not identical to the congenital tritan defect. - Yasuo Ohta.

Hypertension and color blindness in young men, by W.E. MORTON (Department of Public Health and Preventive Medicine, Univ. of Oregon Medical School, Portland, Oregon), Arch. Int. Med. 135, 653-656, 1975.

Among 29119 Selective Service registrants for the US Armed Forces born from 1939 to 1941 in Oregon and Colorado, 1073 (3.6%) had definite hypertension and 1226 (4.2%) had some type of color blindness. Definite hypertension was present in 6.0% of color blind individuals but in only 3.6% of those with unimpaired color vision, while color blindness occurred in 6.8% with definite hypertension, in 5.8% with borderline hypertension and in only 4.0% with normal blood pressure. Color vision was tested by the AO HRR plates, in some cases by the Ishihara or Dvorine plates. Color blindness was not identified by type. - Ingeborg Schmidt.

Chloroquine retinopathy, by J.J. BERTRAND, Bull. Mém. Soc. franç. Ophtal. 156-157, 1973.

This iatrogenic retinopathy must be avoided. However it is necessary to explore the visual functions before the apparition of the ophthalmoscopic lesions : colour vision, luminance thresholds and electroretinogram. The impairment of colour vision is in a blue-yellow axis. The 100 hue is the best test for appreciating quantitatively a progressive aggravation, but it is difficult to decide when the treatment must be stopped. Increment thresholds for red lights are recommended by some authors for an early diagnosis. Finally ERG is the best examination. - Jean Vola.

The signs of retinal lesions ordering to stop antimalarial treatment, by P. FRANCOIS, G. CONSTANTINIDES, P. TURUT & J.C. HACHE, Bull. Mém. Soc. franç. Ophtal. 158-163, 1973.

Study of 426 cases. Colour sense was examined by means of the 100 hue test, and only the total score was taken in account. The mean values are about age + 30 for normals and (age x 2) + 30 in pathological cases. As Babel, J. François and Verriest showed, a dyschromatopsia appears progressively and more or less early. An increasing of 25% of the score is an important alarm sign. - Jean Vola.

Optic neuritis by ethambutol, by H. SARAUX, A. BECHETOILLE & A. FLORQUIN, Bull. Mém. Soc. franç. Ophtal. 183-187, 1973.

The authors describe 3 stages : (1) The early stage is infraclinical. Only functional examinations can show some impairment of the visual functions, especially an acquired dyschromatopsia with no definite axis (according to the different authors the found axis varies from deutan to tritan). This stage is entirely reversible. (2) When intoxication is well established there are a decrease of visual acuity, a central scotoma and a severe dyschromatopsia. The recovery of the visual functions after discontinuation of the treatment is often incomplete. (3) Severe neuritis in cases in which the treatment was continued during at least 11 months. Colour vision is always impaired. A decrease of the rate of zinc in the retinal cells could play a role in this intoxication.

Before treatment by ethambutol it is recommanded to examine the patient with the 100 hue test and to follow the evolution with the test. - Jean Vola.

Review and analysis of color coding research for visual displays, by R.E. CHRIST (Department of Psychology, New Mexico-State University, Las Cruces, New Mexico) Human factors 17/6, 542-570, 1975.

Review of 42 experimental studies published between 1952 and 1973 on the effects of color on visual search and identification performance. Quantitative analyses of the results indicated that colour may be a very effective performance factor under some conditions but that it can be detrimental under others. A guide for design decisions and an indication of knowledge gaps are also provided. - Ingeborg Schmidt.

Predictive validities of several clinical colour vision tests for aviation signal light gun performance, by K.N. JONES, J.A. STEEN and E. COLLINS (Federal Aviation Admin., Office of Aviation Medicine, 800 Independence Ave., S.W., Washington, D.C. 20591, U.S.A.), FAA-AM-75-1, Jan. 1975.

Scores on various tests obtained from men with color-defective and normal vision were assessed as predictors of light gun performance scores. Thus the efficiency of the color vision tests could be determined. - From the Rev. sens. Disab.

FOURTH SYMPOSIUM OF THE INTERNATIONAL RESEARCH GROUP ON COLOUR VISION DEFICIENCIES

(PARMA 27th-30th JUNE 1977)

STATE OF THE SCIENTIFICAL PROGRAMME AT 28TH MARCH

(S = summary received)

27th june 1977

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14.00 Meeting of the IRGCVD Committee on Standardization

16.00 Meeting of the IRGCVD Directorial Committee

28th june 1977

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NEUROPHYSIOLOGICAL APPROACH OF COLOUR VISION AND ITS DEFICIENCIES. Chairman : X...

8.30 SPERLING H.G., CRAWFORD M.L.J. & ESPINOZA-CIFUENTES S. (Houston, USA) : Threshold spectral sensitivity of single neurons and performing monkeys (invited paper)

S 9.00 REGAN D.M. (Halifax, Canada) : Investigations of normal and defective colour vision by evoked potential recording (invited paper)

9.30 PONTE F., ANASTASI M. & LAURICELLA M. (Palermo, Italy) : Electroretinography as a diagnostic test in colour vision deficiencies

S 9.40 MEYER J.J., KOROL S. & GRAMONI R. (Geneva, Switzerland) : Psychophysical flicker thresholds and ERG flicker responses in congenital and acquired colour vision deficiencies

9.50 CORDELLA M., CRIPPA P.R., PROSPERI L., FRANCHI A. & PONGHELLINI G. (Parma, Italy) : Clinical electroretinography on chromatic saturation

S 10.00 MIERDEL P. & MARRE E. (Dresden, GDR) : The effect of the rise time of colour stimuli on the VECP

10.10 Discussion

10.20 Break

METHODS OF EXAMINATION. Chairman : K. RUDDOCK

(a) Subjective

S 10.40 HIGGINS K.E., MOSKOWITZ-COOK A. & KNOBLAUCH K. (Philadelphia, USA) : Color vision testing : An alternative and inexpensive "source" of illuminant C

10.50 VELHAGEN K. (Berlin, GDR) : Charts for examination of the colour sense of children and persons suffering from dyslexia

S 11.00 LANTHONY P. (Paris, France) : Quantitative study of the neutral zones in dyschromatopsia

S 11.10 PINCKERS A., NABBE B. & VAN DEN BOGAARD P. (Nijmegen, The Netherlands) : Lanthony's New Color Test

S 11.15 HILL A.R., CONNOLLY J.E. & DUNDAS J. (Glasgow, Scotland) : An evaluation of the City Colour Vision Test

S 11.20 OHTA Y., KOGURE S., IZUTSU Y., MIYAMOTO T. & NAGAI I. (Tokyo, Japan) : Clinical analysis on colour vision deficiencies with the City University Test

S 11.30 VERRIEST G. & CALUWAERTS M.R. (Ghent, Belgium) : An evaluation of three new colour vision tests

S 11.40 PINCKERS A. & BARON J. (Nijmegen, The Netherlands) : Clinical evaluation of Lanthony's New Color Test and Desaturated 15 Hue

S 11.50 OHTA Y., KOGURE S. & YAMAGUCHI T. (Tokyo, Japan) : Clinical experience with the Lovibond Colour Vision Analyser

S 12.00 TAYLOR W.O.G. (Ayr, Scotland) : Computer operated calculation and automated plotting of Farnsworth's 100-hue test

S 12.15 DONALDSON G.B., PRITTY D.W. & BRYAN W. (Glasgow, Scotland) : Developments in the instrumentation of the FM 100 hue test

S 12.20 FLETCHER R. (London, England) : Recent experiences with the City Spot Test

12.30 Dinner

S 14.00 KEELY E. (Bristol, England) : The formulation and assessment of the Keely/Bristol Colour Vision Test

S 14.10 MORELAND J.D. (Waterloo, Canada) : Temporal variations in anomaloscope equations

S 14.20 MORELAND J.D. & KERR J. (Waterloo, Canada) : Optimization of stimuli for trit-anomaloscopy

S 14.30 ROTH A., RENAUD J.C. & VIENOT J.C. (Besançon, France) : Advancement of a direct observation anomaloscope

14.40 REYFTMANN (Paris, France) : Automatic measurements of chromatic differential thresholds at a constant luminance

14.50 DUPONT-HENIUS G. (Paris, France) : Measurement of differential color perception thresholds
15.00 DUBOIS-POULSEN A. (Paris, France) : Changes of the hue discrimination curve in pathology
15.10 MAIONE M., CARTA F., SCOCCIANTI L. & ORSINI J.G. (Parma, Italy) : The color naming at different suprathreshold extramacular stimulations
15.20 VERDUYN LUNEL H.F.E. & CRONE R.A. (Amsterdam, The Netherlands) : Determination of peripheral spectral sensitivity and saturation discrimination characteristics with a modified Goldmann perimeter
15.30 DAVIDOFF J.B. (Edinburgh, Scotland) : A new screening test for colour defective vision
15.40 PARRA F. (Paris, France) : New results in searching the neutral bands in colour vision deficiencies
15.50 Break

(b) Objective

S 16.10 OHBA N. & TANINO T. (Tokyo, Japan) : Photographic demonstration of cone pigment bleaching in living human eye
16.20 COHEN G.H. (Rochester, USA) : The human pupil response as an objective determination of color vision deficiency
16.30 Discussion
16.50 General meeting of the International Research Group on Colour Vision Deficiencies

29th june 1977
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VARIOUS SUBJECTS. Chairman : L. ROSITANI-RONCHI

(The papers of Enoch and Franceschini are deleted)

S 9.00 KALMUS H. (London, England) : Teleonomy of normal and defective colour vision
9.10 GAVRIYSKY V., BANKOV A. & KECHLIBAROV T. (Sofia, Bulgaria) : The photopic spectral efficiency curve in the normal bulgarians
9.20 KIENLIN O. (Paris, France) : Influence of coloured backgrounds on chromatic perception
S 9.30 COBB S. (Glasgow, Scotland) : The examination of Class I and Class II normals and colour defectives on the exchange threshold colorimeter and analytical anomaloscope
9.40 COHEN J.D. & Mac CUE R.K. (South Hadley, USA) : Unique-green spectral loci and differential adaptation in normal observers

9.50 RUDDOCK K.H. & WATERFIELD V.A. (London, England) : Central representation of colour vision deduced from studies on a subject with a central colour vision defect

S 10.00 VAN DEN BERGH T.J.T.P. (Amsterdam, The Netherlands) : Rod-cone interaction with homogeneous field stimulation

10.05 PERDRIEL G., SANTUCCI G.F. & CHEVALERAUD (Paris, France) : Visual acuity on TV color screen

10.15 KOLIOPOULOS J. (Athens, Greece) : Colour vision perception in ancient greek literature

10.25 Break

10.45 Discussion

COLOUR VISION UNDER REDUCED ILLUMINATION. Chairman : H. SPERLING

11.00 RUDDOCK K. (London, England) : Review : Colour vision under reduced illumination (invited paper)

S 11.15 DE MATTIELLO M.L.F. & FUIRAO M. (Buenos-Aires, Argentina): Saturation functions under reduced illumination

S 11.20 HILL A.R., CONNOLLY J.E. & DUNDAS J. (Glasgow, Scotland) : The performance of ten colour vision tests at three illumination levels

S 11.30 VOLA J.L., LEPRINCE G. & CORNU L. (Marseille, France) : The 100 hue at mesopic level

S 11.40 BOWMAN K.J. (Melbourne, Australia) : The effect of illuminance on colour discrimination in senile macular degeneration

11.50 Discussion

12.15 Dinner

CONGENITAL DEFECTS. Chairman : J. POKORNY

S 13.45 BAILEY J.E. (Fullerton, USA) : Flicker fusion luminosity functions of red-green color defectives

S 13.55 SCHEIBNER H. & PAULUS W. (Düsselforf, BRD) : An analysis of protanopic colour vision

14.05 ROMESKIE M. & YAGER D. (New York, USA) : Opponent response functions of dichromats

14.15 NUNN B.J. & RUDDOCK K.H. (London, England) : Non foveal colour vision characteristics of anomalous trichromatic colour vision

S 14.25 VERRIEST G. & UVIJLS A. (Ghent, Belgium) : Central and peripheral spectral increment thresholds on white backgrounds in different kinds of congenitally defective colour vision

14.35 DE VRIES-DE MOL E.C., VAN NORREN D. & WENT L.N. (Soesterberg, The Netherlands) : Increment spectral sensitivity of hemizygotes and heterozygotes for different classes of colour deficiencies

S 14.45 VOKE-FLETCHER J. & FLETCHER R. (London, England) : A case of "tritanopia"

S 14.55 PICKFORD R.W., PICKFROD L.R., BOSE J., JOARDAR B.S., NAG P.K., RAY G.G. & SEN R.N. (Glasgow, Scotland/ Calcutta, India) : Incomplete achromatopsia in Bishnupur

S 15.05 VOKE-FLETCHER J. (Bristol, England) : Congenital rod monochromatism in a brother and sister

S 16.05 ZWICK H. & ROBBINS D.O. (San Francisco, USA) : Central protanomaly in the Rhesus

16.15 Break

16.35 Discussion

30th june 1977

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PRACTICAL ASPECTS OF COLOUR VISION DEFICIENCIES.
Chairman : H. KALMUS

8.50 MARRE M. (Dresden, GDR) : Practical aspects of colour deficiencies in traffic (invited paper)

S 9.20 VOKE-FLETCHER J. (Bristol, England) : Industrial requirements and testing of colour vision (invited paper)

S 9.50 RONCHI L. & STEFANACCI S. (Florence, Italy) : Color discrimination in the frame of illuminating engineering : effects of C- and high pressure Na-sources at different illuminances

S 10.00 KALMUS H. (London, England) : Colour vision in mixtures of monochromatic and white light

10.10 FLETCHER R. (London, England) : Confusion spot displays for endoscopy and other situations

10.20 Break

10.40 VOKE-FLETCHER J. (Bristol, England) : Role of colour in acquistion of military targets

S 10.50 LAKOWSKI R. & OLIVER K. (Vancouver, Canada) : Diamond grading by the colour deficient

S 11.00 NEUBAUER O. & HARRER S. (Vienna, Austria) : Protanopia and driving licence

S 11.10 LAKOWSKI R. & OLIVER K. (Vancouver, Canada) : Identification of grades of fuel oil by red-green deficient observers

S 11.20 POKORNY J., SMITH C.V. & LUND D. (Chicago, USA) : Technical characteristics of "color test glasses"

S 11.30 LAKOWSKI R. & OLIVER K. (Vancouver, Canada) : Modern industrial lighting and the protanope

11.40 Discussion

12.15 Dinner

ACQUIRED DEFECTS. Chairman : M. MAIONE

13.45 MARRE M. & MARRE E. (Dresden, GDR) : Different types of acquired colour deficiencies in dependence upon the fixation modus of the diseased eye

S 14.00 VERRIEST G. & UVIJLS A. (Ghent, Belgium) : Central and peripheral spectral increment thresholds on white backgrounds in acquired diseases

S 14.15 ZISMAN F. & KING-SMITH P.E. (Manchester, England) : Spectral sensitivities of acquired colour defectives analysed in terms of opponent-colour theroy

S 14.30 BAILEY J.E. (Fullerton, USA) : A case of red-green dischromacy with atypical neutral zone

S 14.35 VOLA J.L., CORNU L. & LEPRINCE G. (Marseille, France) : Clinical interpretation of the two-color-threshold method

14.40 MAIONE M., MORELAND J.D., CARTA F., BARBERINI E. & LETTIERI S. (Parma, Italy) : Further observations on the extra-macular chromatic mechanisms in retinal and neural pathology

S 14.50 MORELAND J.D., MAIONE M., CARTA F. & SCOCCIANTI L. (Parma, Italy) : Acquired "tritan" deficiencies in macular pathology

S 15.00 LAGERLÖF O. (Stockholm, Sweden) : Quantitative assessment of acquired color vision deficiency in maculopathy

15.05 MASSOF R.W. (Baltimore, USA) : Color discrimination in retinitis pigmentosa

S 15.15 CARAPANCEA M.T. (Bucharest, Rumania) : Manifestations and mechanisms of chromatic perception anomalies in quininic intoxication

S 15.25 SERRA A., MASCIA C. & DESSY D. (Cagliari, Italy) : Color discrimination under C- and high pressure Na-illumination in normal persons and in patients affected by various diseases

S 15.35 SMITH V.C., POKORNY J., DIDDIE K.R. & NEWELL F.W. (Chicago, USA) : Color matching and Stiles-Crawford effect in central serous retinopathy

15.45 Break

16.05 BIRCH-COX J. (London, England) : A comparison between congenital tritanopia and acquired tritanopia due to diabetic retinopathy

16.15 BELLEVILLE (Toulouse, France) : Diabetic retinopathy and New Color Test results

16.20 YURDAKUL S. (Bristol, England) : The comparative value of the K-B plates in diabetic retinopathy

S 16.25 BARCA L. & VACCARI G. (Florence, Italy) : Diabetic retinopathy and color discrimination under various illuminants

S 16.30 MARMION V.J. (Bristol, England) : The colour vision deficiency in open angle glaucoma, A comparison of tests

16.40 MARRE M. (Dresden, GDR) : Colour vision in squint amblyopia

S 16.50 LAKOWSKI R. & MORTON A. (Vancouver, Canada) : Acquired colour losses and oral contraceptives

17.00 ZWICK M. & BEATRICE E.S. (San Francisco, USA) : Long term changes in spectral sensitivity and retinal ultrastructure after low level visible laser exposure

17.10 BIRCH-COX J. (London, England) : Acquired colour defects in diabetic retinopathy before and after laser photocoagulation

17.20 Discussion

TERMS TO BE PREFERRED OR AVOIDED IN THE PARMA PAPERS

In order to give unity of presentation to the published proceedings of the symposium, authors are requested to use the following preferred terms recommended by the Standardisation committee of the International Research Group on Colour Vision Deficiencies and to avoid the ambiguous or imprecise terms listed below.

PREFERRED TERMS

Normal colour vision, normal trichromacy, normal trichromat
Abnormal colour vision, colour deficiency, colour defect
Trichromat Trichromacy Trochromatic
Dichromat Dichromacy Dichromatic
Monochromat Monochromacy Monochromatic (Rod or Cone Monochromat)
Anomalous trichromat...
Protanope Protanopic, Deuteranope Deuteranopic, Tritanope Tritanopic, Protanomalous trichromat, Protanomaly Deuteranomalous trichromat, Deuteranomaly Tritanomalous trichromat, Tritanomaly

Group terms to indicate dichromats and anomalous trichromats of similar type with abbreviations
Protan Protan defects, Deutan Deutan defects, Tritan Tritan defects
Protanopia (P) Protanomalous trichromat (PA)
Deuteranopia (D) Deuteranomalous trichromat (DA)
Tritanopia (T) Tritanomalous trichromat (TA)

Arbitrary degrees of deficiency within anomalous trichromacy
mild, medium, strong protanomalous trichromatism....
slight, moderate, extreme protanomalous trichromatism....
Congenital colour vision defects (Present at birth, primarily due to an inherited anomaly of the visual pigments, genetically determined)
Acquired colour vision defects (Generally occuring later in life and secondary to pathological conditions, varying aetiology)
For acquired defects the terms red green defects and blue-yellow defects can be used but Verriest's classification of types I, II, and III is preferred

Colour Agnosia (an aphasic condition)
Chromatopsia (coloured vision)
Achromatopsia (absence of hue discrimination)

Preferred colorimetric terms and units can be found elsewhere
Decimal classification of visual acuity is preferred

TERMS TO BE AVOIDED

Colour blindness Incomplete dichromacy Typical monochromat
Colour weakness, amblyopia or asthenopia (Poor hue discrimination preferred)
Colour deviant, protan/deutan/tritan deviant
protan/deutan/tritan series (except when referring to the results of particular tests)
protan/deutan/tritan axes

Tetartanopia Achromat
Protanous, deutanous, tritanous
Protanoid, deutanoid, tritanoid
Inherited colour defects Congenital red-green defects.

Jennifer Birch-Cox.

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, Augenklinik 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 (one per form)

AUTHOR(S) : .....
.....

TITLE : .....
.....
.....

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

Name

Full address