

The Diagnosis of Colour Defect.*

THE Address by Dr. Mary Collins is devoted to an exhaustive examination of "Tests in Common Use for the Diagnosis of Colour Defect" with reference to their theoretical and practical consequences, failure to discriminate which is, in the judgment of Dr. Collins, responsible for the difference of opinion regarding the commoner tests now in vogue. The study is confined to some of the recent investigations particularly relating to red-green defect, though three varieties of colour-blindness are said to be familiar to modern psychology (*i.e.*, total colour-blindness, red-green blindness, and blue-yellow blindness). Dr. Mary Collins then refers to the more or less agreed view that red-green colour-blindness is a reduction system of normal colour-vision and observes that there exist different degrees of colour-blindness ranging from the extreme in which yellow and blue are the only two colours seen to milder cases in which sensibility to red and green is not totally impaired. Troland who has emphasized the inadequacy of the division or classification of the colour-blinds into protanopes, deuteranopes, and tritanopes, and Collins who concludes it is quite unprofitable (a despair like this would indirectly reinforce conclusions of Indian Psychology is the feeling of the epitomizer) to classify the colour systems of the colour-blind as there exist so many individual variations are cited in support of the existence of degrees of colour-blindness.

Dr. Mary Collins then refers to "anomalous trichromates" (*i.e.*, cases which reveal unequal sensitiveness to red and green) and the Rayleigh equation (*i.e.*, equating red and green to match yellow) results obtained by the use of which after an examination of 200 individuals (hundred men and hundred women) are shown in a graph (logarithms of the ratio of red to green). It is difficult to know where the normal curve terminates and abnormality begins, observes Dr. Collins and that the normal curve permits of fairly wide deviations.

The question next considered is—Do anomalous trichromates form an intermediate state between normal trichromates and dichromates? This is followed up with another—Are these "dangerous colour-blinds"? Testing of colour-blindness becomes exceedingly difficult, because, adult colour-blinds avail themselves of all kinds of secondary aids to enable them to discriminate colour. It then, becomes obligatory so to devise the tests as to make the subject rely entirely on his own colour sensations, without recourse to auxiliary, artificial or adventitious aids.

Dr. Mary Collins gives in the latter half of the address results obtained from the application of two tests. The field is the *Ishihara Test for Colour Blindness* (5th Edition) in which pseudo-isochromatic plates are used with coloured numerals on coloured backgrounds. The results of testing 42-colour blinds are tabulated. The test is described to be "very reliable" and did not allow any of the colour blinds to pass.

The second is the *Schauff's Mosaic Test* (*Tableaux-Mosaique-pour la Recherche du Daltonisme*). Results are tabulated of testing 40-colour blinds. Dr. Collins remarks that this can be "recommended as a fairly satisfactory test".

The spectrometer is the most fundamental test, but, it is seldom available for practical purposes. Majority of tests, except those conducted in scientific laboratories, are either *lantern tests*, or *pigment tests*.

Dr. Collins suggests that a combination of the Ishihara, the first three tables of the Stilling and the Schaaff Mosaic tests should give "fairly satisfactory diagnosis" of colour blindness. But in vocations relating to Railway, Navy (certain branches) in aviation, and to a lesser degree motoring, in which coloured signals have to be discriminated, and re-acted to, the lantern test should be applied *in addition*. Dr. Collins makes no secret of the fact that the results obtained from the application of these tests can by no means be considered decisive or conclusive, but, concludes the Presidential Address indicating the "inference that we are dealing not with linear variations in degree, but with multi-dimensional variations". This is claimed to open up a wide, new field of investigation in the psychology of colour vision.

The Phenomenon of colour-vision, normal, and abnormal, is undoubtedly more physical, physiological and anatomical than *psychological*. From the Presidential Address of Dr. Mary Collins, which reveals painstaking and thorough-going investigation, *distinctive psychological colour* seems to me to be missing. What is the distinctively psychological, or para-psychological contribution made by the different theories of colour-vision and experimental tests connected with them? Sooner or later, this straight question must be answered if the independent status of psychology is to be vindicated. Otherwise, psychology merged in physics, physiology and anatomy will altogether be lost leaving behind just an insipid mixture of non-descript *Behaviourism* or *Adaptationism*. This is the only comment which the epitomizer has permitted himself. His colour-vision, let Dr. Collins rest assured, is perfectly Normal!

* Summary of the Presidential Address of Dr. Mary Collins. Psychology Section, British Association for the Advancement of Science, Nottingham, 1937.