

binations of absorbing media are selected in such a way that light which has passed through one of them and is then reflected from the corresponding part of c^1 will be confined to a very limited part of the spectrum, thus furnishing light just as pure as if a certain region of the spectrum itself had been taken, but not limited in intensity and space extension. This light is then seen through the observation tube T, and through the aperture of the diaphragm a , whilst the opaque parts of the latter are covered with another pigment paper illuminated in an analogous manner by means of I_2 in box C.

At the end of box C is inserted a gelatine preparation as required by the ground colour. Since the ground colour remains constant during a whole series of experiments there is no need for the gelatine preparations to be arranged in the form of a disc. They are identically the same as those for the other box but they have the form of squares of the same size as the opening of the box. The observation tube T is attached to the moving part of the diaphragm a by a lever arrangement e in such a manner that its end moves with half speed. This keeps the middle part of the diaphragm always in the centre of the field. At the ocular end of this tube o a large screen shuts off the eye of the observer from all other parts of the apparatus. The eye-piece f , the graduated slit g , and the screen h , render it possible to compare the light seen through the tube with real spectral light generated by a lantern and spectral apparatus in an adjoining room (the first annex of Room 16). Through the observing tube can now be seen the two surfaces, the ground colour on the diaphragm, illuminated by I_2 , and through the opening of the diaphragm the colour to be combined with the ground colour, illuminated by I_1 . There were twelve colours in all which could be changed by a revolution of discs c and d .

The intensity differences were eliminated in the following way: The distances of lights I_1 and I_2 were gradually changed until the two surfaces appeared of equal brightness.¹ The correct distances of the lights having been found, they were marked on the sliding scales of boxes B and C. The ground colour, which

¹ See also Dr. Lane's article.

² See also Dr. Lane's article, pp. 23-24.