Blue; nor any Blue so pure as to be without any mixture of Yellow or Red. If pigments could be obtained truly representing each primary, the laws of colour might be perfectly illustrated; but since this is not possible, either as respects purity of colour or power of mixing, explanations of the laws of harmony are beset with many difficulties. Even when pigments are obtained which nearly represent the respective primaries from various causes, such as difference of transparency or opacity, chemical components, or other qualities, they do not perhaps mix to produce even an approach to a perfect secondary colour.

14. The three primaries, Yellow, Red, and Blue, in the state of transient colours (that is to say, in the colours of the prism), when *re*-composed, or mixed by the contrary process to that by which they have been *de*-composed or separated, produce White light.

16. Field, in his work on Chromatography, has shown that material colours, mixed in the proportion of *three* Yellow, *five* Red, and *eight* Blue, are neutralised and destroyed.

17. Any two of them, mixed in these proportions, produce a perfect SECONDARY, which harmonises with the remaining primary.

18. Thus *three* Yellow and *five* Red produce Orange, which harmonises with the remaining primary Blue in the proportion of eight, either as to surface or intensity;

19. Or *five* Red and *eight* blue produce PURPLE, which, in a like manner, harmonises with YELLOW in the proportion of three Yellow to thirteen Purple.

20. Or *eight* Blue and *three* Yellow produce GREEN, harmonising with Red in the proportion of five Red to eleven Green.

21. The three colours thus produced, namely, Orange, Purple and Green, are each complementary to, or complemented by, a primary.

22. Orange is complementary to Blue and Blue to Orange.

23. Purple is complementary to Yellow, and Yellow to Purple.

24. Green is complementary to Red, and Red to Green.

25. To satisfy the eye and produce harmony of colour, the presence of all the three primaries is required, either pure or in combination; thus, Red when not supported by the due proportion of Yellow and Blue is harmonised by the presence of the secondary Green, which is the union of those two primaries, and which is therefore called the complement to Red.

26. This is proved to be a physical want of the organs of sight by a simple experiment. If in a strong sunlight we gaze fixedly upon a red wafer placed in the middle of a sheet of white paper, and then suddenly remove it, a green spot of the same form will appear for a short time to replace it, gradually fading away as the nerves of the eye, fatigued with looking at the red, recover their tone by its removal.

27. This fleeting image of the object which floats before the eye is called an Ocular Spectrum. In a like manner, on looking at the sun when low in the horizon, an ocular spectrum of the form of the sun, but of a purple hue, will float before the eye as it is removed from gazing on the sun's brightness.

28. In these instances the eye decomposes the light, derived in one case from the paper, in the other from the sun; the nerves, fatigued with looking intensely at one primary, are unable to receive the rays of that colour, the other two rays therefore become mingled to produce the secondary colour of the ocular spectrum.

29. It should be remembered that as any one of the primary colours, by mixture with either of the others, loses its purity, and becomes *in a degree* secondary, the secondary which is complementary to it must contain more of the remaining primary: thus, if Red tends towards Scarlet, which is an Orange Red (a Red with Yellow in it), the Green, to be truly complementary, should incline towards the remaining primary Blue, and be a Blue Green.

30. When the Red, on the contrary, tends towards Crimson, which is a Purple Red, (a Red with Blue in it), then the complementary Green should incline towards Yellow, and be a Yellow Green; and the like rule holds good as to the other primaries.

31. Painters describe colours as being Warm colours or Cold colours: Orange and Red, and their hues and tints, being warm; Blue and Green being cold colours.

32. The mixture of secondary colours produces the tertiary colours.

33. Thus, the two secondaries, Orange and Green, produce the tertiary CITRINE,