

Johann Wolfgang Goethe

German poet, playwright, novelist, scientist, statesman, theatre director, and critic. His works include plays, poetry, literature, and aesthetic criticism as well as treatises on botany, anatomy, and colour.

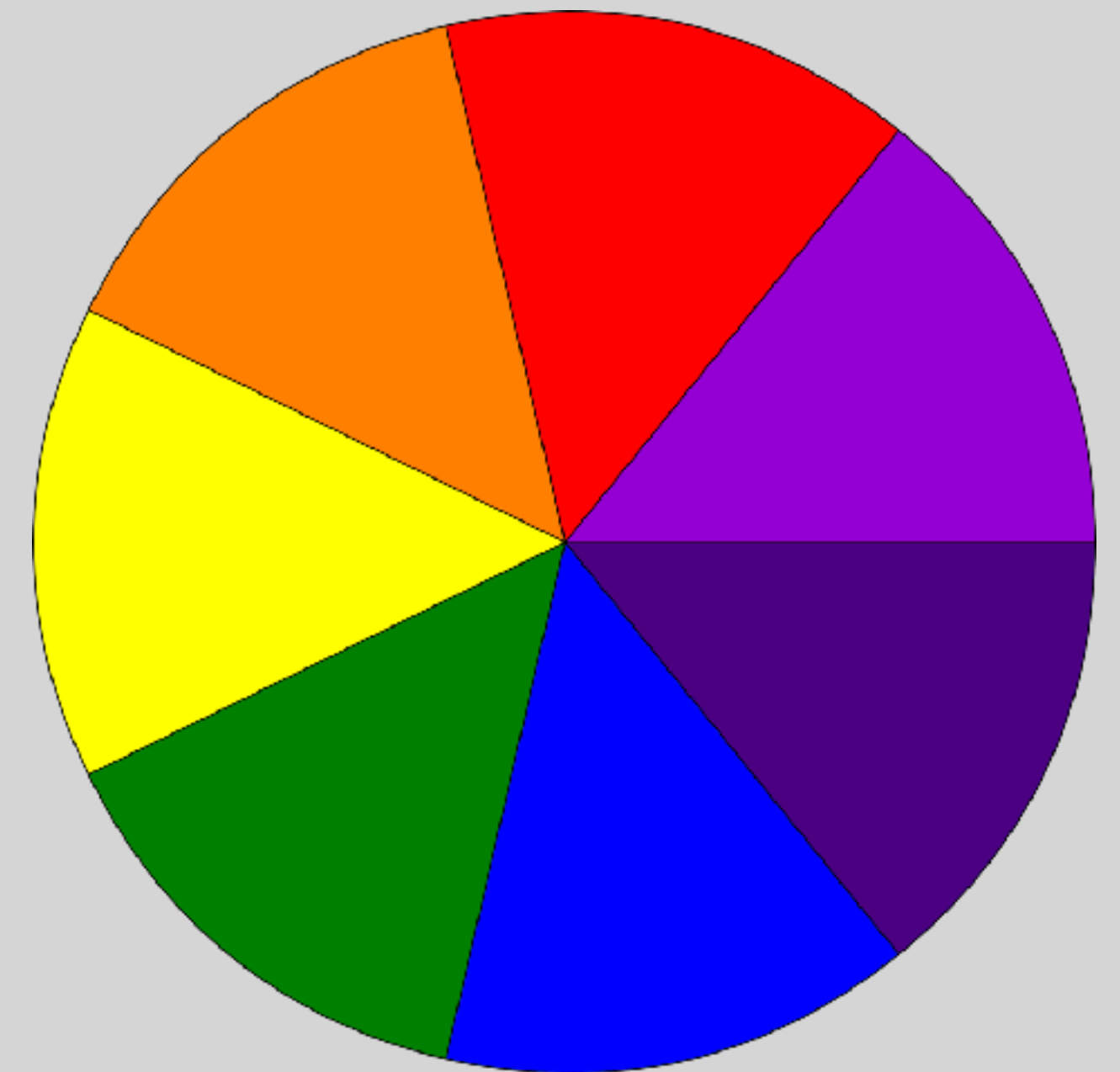
Born: 28 August 1749, Frankfurt, Germany

Died: 22 March 1832, Weimar, Germany

Sir Isaac Newton PRS (25 December 1642 – 20 March 1726/27) was an English mathematician, physicist, astronomer, alchemist, theologian, and author

Isaac Newton's conclusions divide sunlight into primary colors and mix them back together into white light. Newton presented a colour circle to illustrate the relations between these colors in his book *Opticks* (1704)

The Newton disc, also known as the Disappearing Colour Disc, is a well-known physics experiment with a rotating disc with segments in different colors (usually Newton's primary colours: red, orange, yellow, green, blue, indigo, and violet or ROYGBIV) appearing as white (or off-white or gray) when it spins very fast. (Source:wiki)

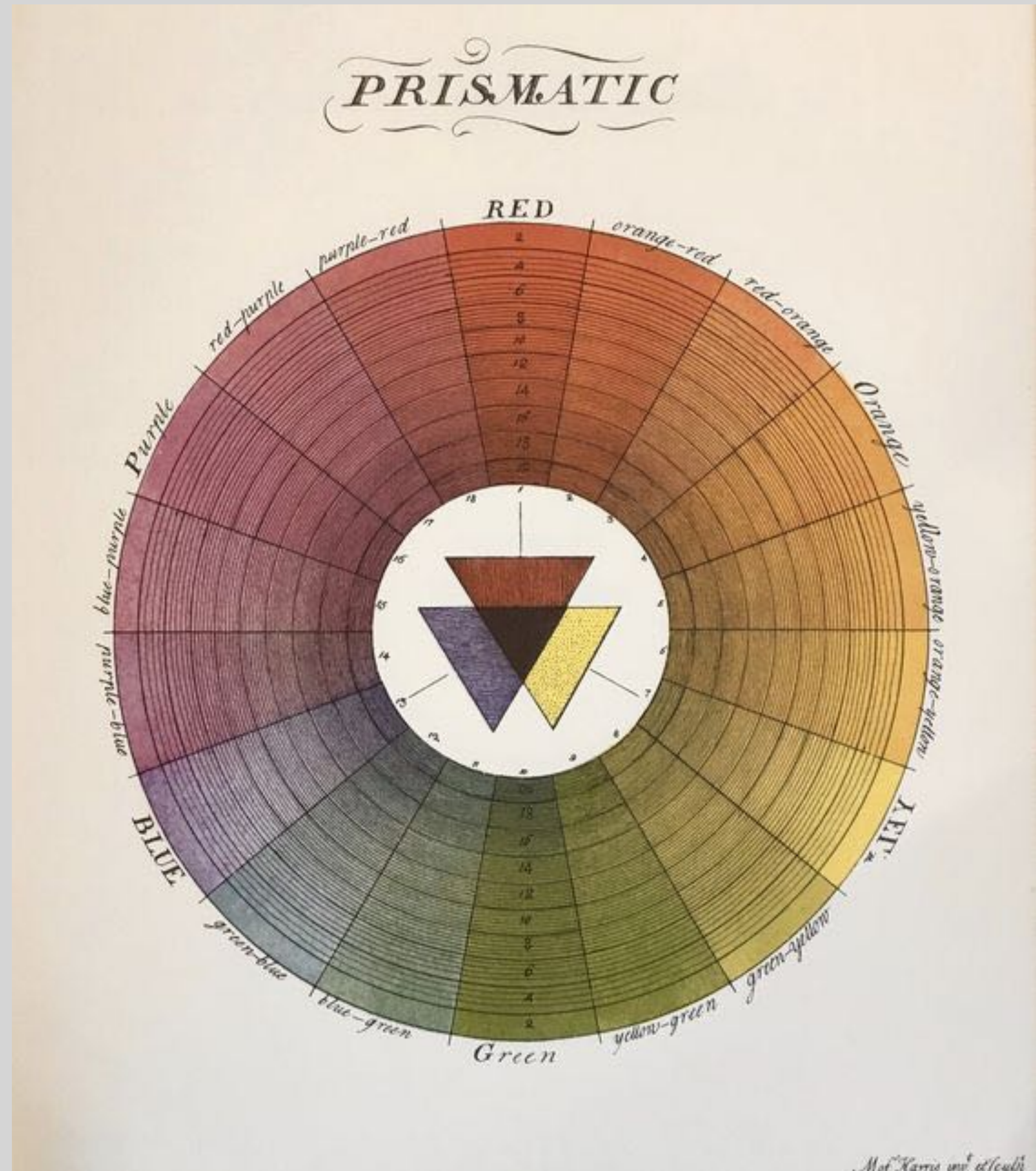


Moses Harris

15 April 1730 – 1787) was an English entomologist and engraver.

explained how three colours can be intermixed, tinted and shaded to create 660 colours "materially, or by the painters art".

Harris referred to red, yellow and blue as "Primitives" and attempted to link these to Isaac Newton's colour theory by making reference to colours "seen in the rainbow refracted by the prism".



the same time produce the same states together which light and dark occasioned in succession.

16.

A dark object appears smaller than a bright one of the same size. Let a white disk be placed on a black ground, and a black disk on a white ground, both being exactly similar in size; let them be seen together at some distance, and we shall pronounce the last to be about a fifth part smaller than the other. If the black circle be made larger by so much, they will appear equal.*

17.

Thus Tycho de Brahe remarked that the moon in conjunction (the darker state) appears about a fifth part smaller than when in opposition (the bright full state). The first crescent appears to belong to a larger disk than the remaining dark portion, which can sometimes be distinguished at the period of the new moon. Black dresses make people appear smaller than light ones. Lights seen behind an edge make an apparent notch in it. A ruler, behind which the flame of a light just appears, seems to us indented. The rising or setting sun appears to make a notch in the horizon.

18.

Black, as the equivalent of darkness, leaves

* Plate i. fig. 1.

the organ in a state of repose; white, as the representative of light, excites it. We may, perhaps, conclude from the above experiment (16) that the unexcited retina, if left to itself, is drawn together, and occupies a less space than in its active state, produced by the excitement of light.

Hence Kepler says very beautifully: "Certum est vel in retinâ caussâ picturæ, vel in spiritibus caussâ impressionis, exsistere dilatationem lucidorum."—*Paralip. in Vitellionem*, p. 220. Scherfer expresses a similar conjecture.—Note A.

19.

However this may be, both impressions derived from such objects remain in the organ itself, and last for some time, even when the external cause is removed. In ordinary experience we scarcely notice this, for objects are seldom presented to us which are very strongly relieved from each other, and we avoid looking at those appearances that dazzle the sight. In glancing from one object to another; the succession of images appears to us distinct; we are not aware that some portion of the impression derived from the object first contemplated passes to that which is next looked at.

20.

If in the morning, on waking, when the eye is very susceptible, we look intently at the bars

Fig 1.

1

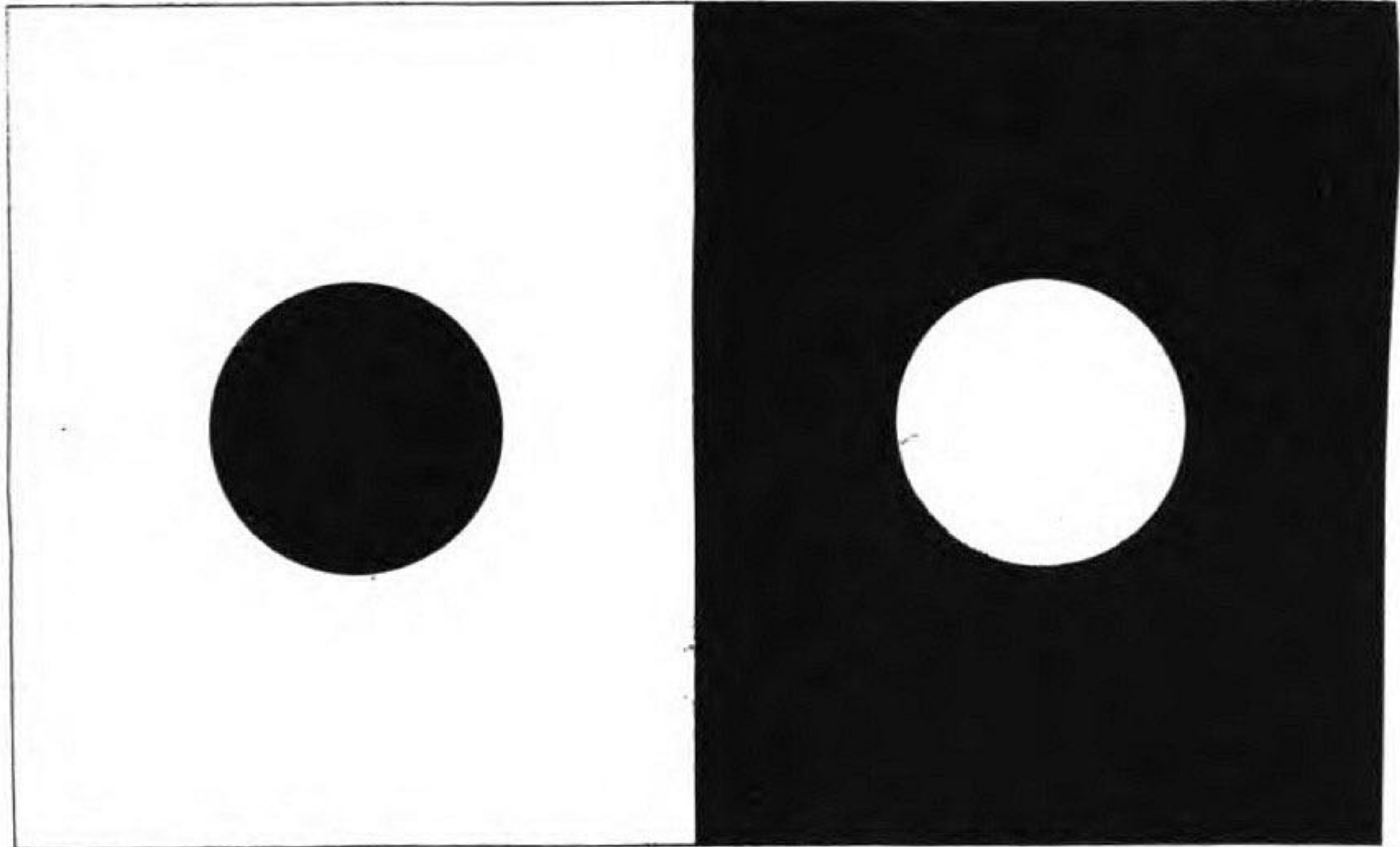


Fig 2.

Fig 3.

red. Perhaps we might insert under the same category the story that drops of blood appeared on the table at which Henry IV. of France had seated himself with the Duc de Guise to play at dice.

V.

COLOURED OBJECTS.

47.

WE have hitherto seen the physiological colours displayed in the after-vision of colourless bright objects, and also in the after-vision of general colourless brightness; we shall now find analogous appearances if a given colour be presented to the eye: in considering this, all that has been hitherto detailed must be present to our recollection.

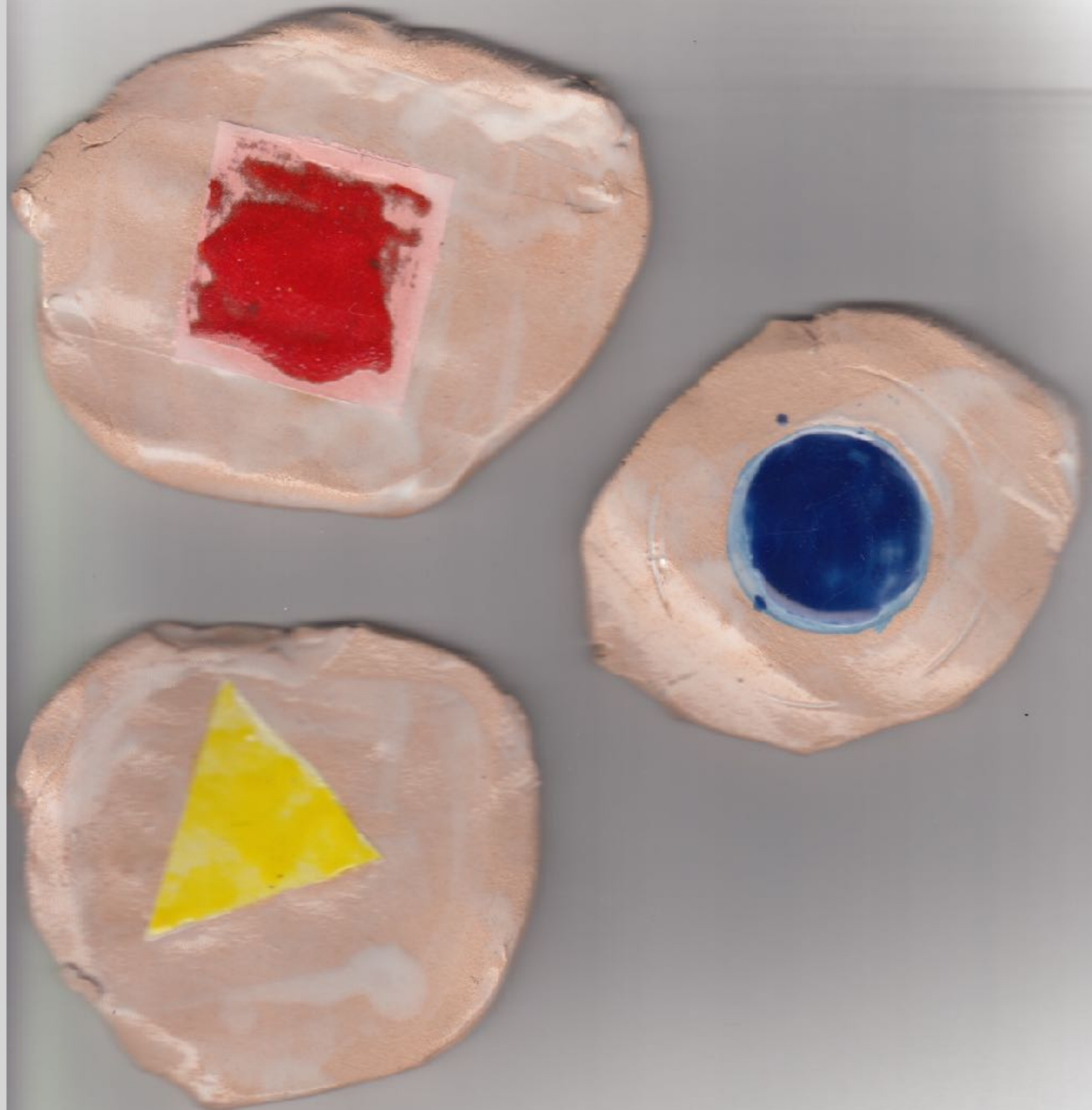
48.

The impression of coloured objects remains in the eye like that of colourless ones, but in this case the energy of the retina, stimulated as it is to produce the opposite colour, will be more apparent.

49.

Let a small piece of bright-coloured paper or silk stuff be held before a moderately lighted white surface; let the observer look steadfastly

on the small coloured object, and let it be taken away after a time while his eyes remain unmoved; the spectrum of another colour will then be visible on the white plane. The coloured paper may be also left in its place while the eye is directed to another part of the white plane; the same spectrum will be visible there too, for it arises from an image which now belongs to the eye.



1. Paint a coloured object.

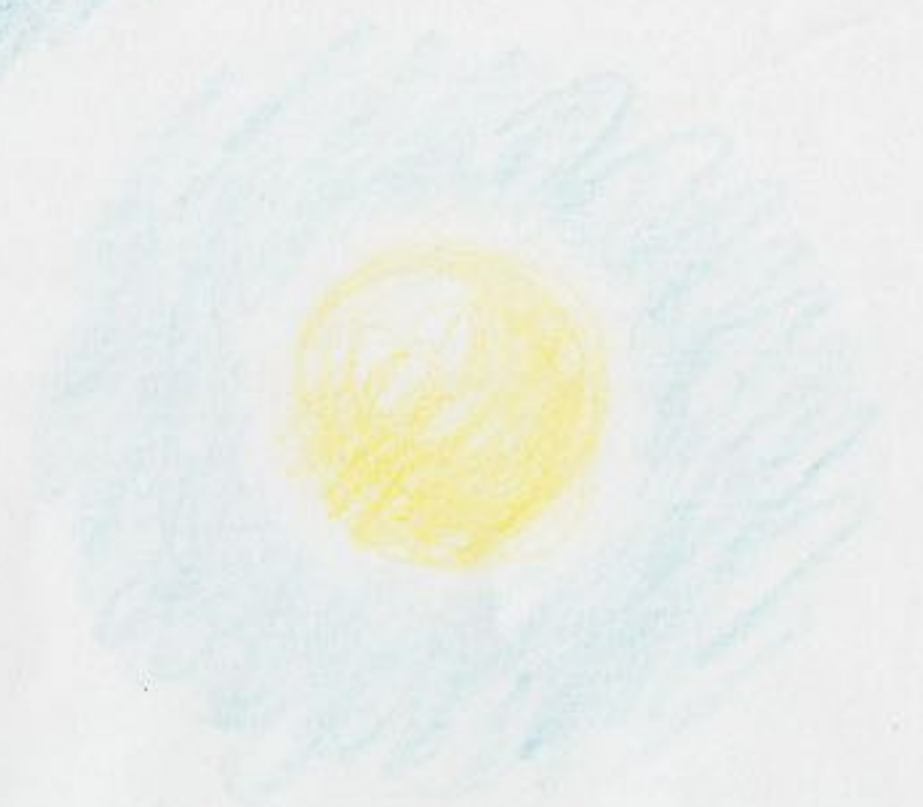
2. Use layers of watercolour for intensity.

3. Look at one coloured object for 30 seconds - 1 min

4. Look at white paper.

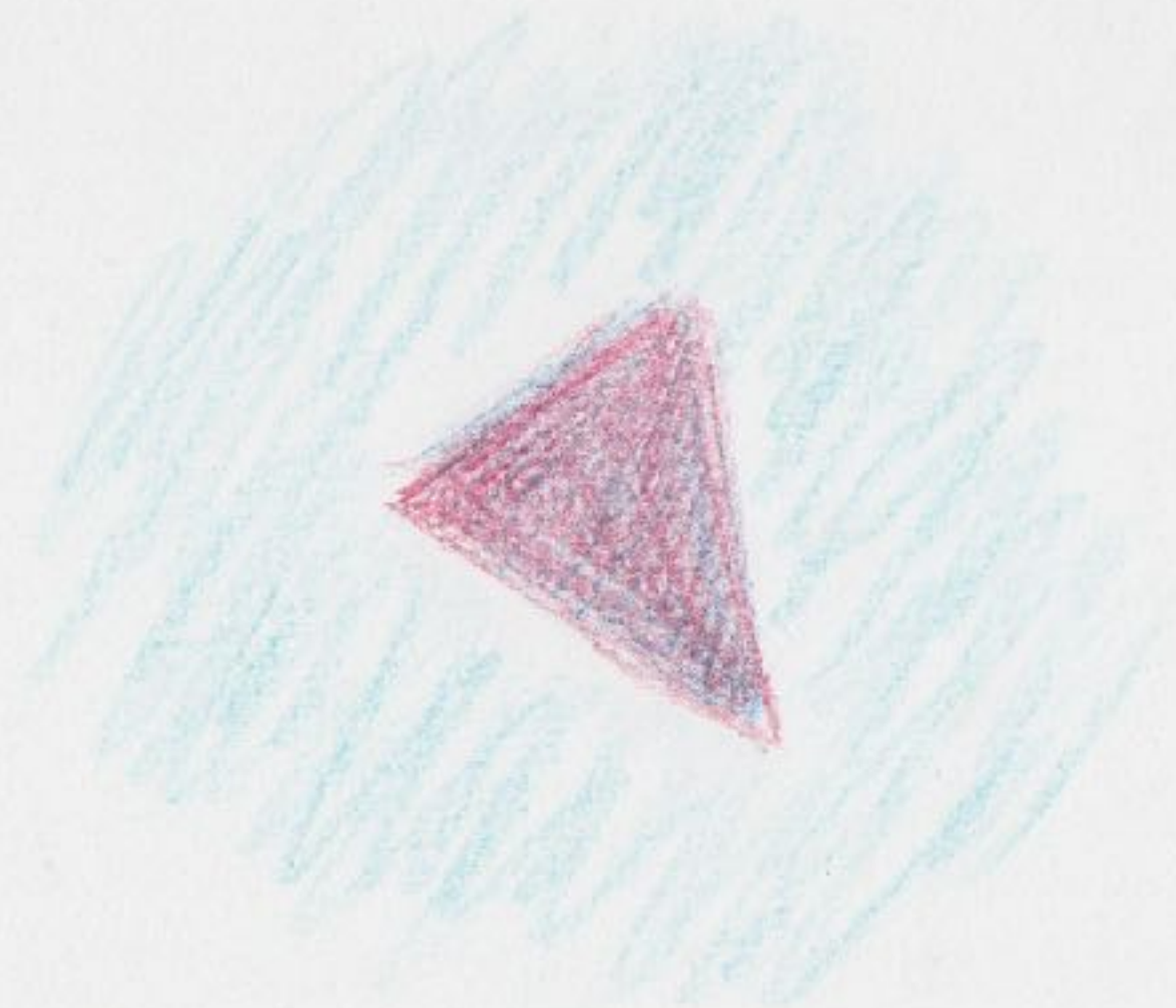
Do you see another image?

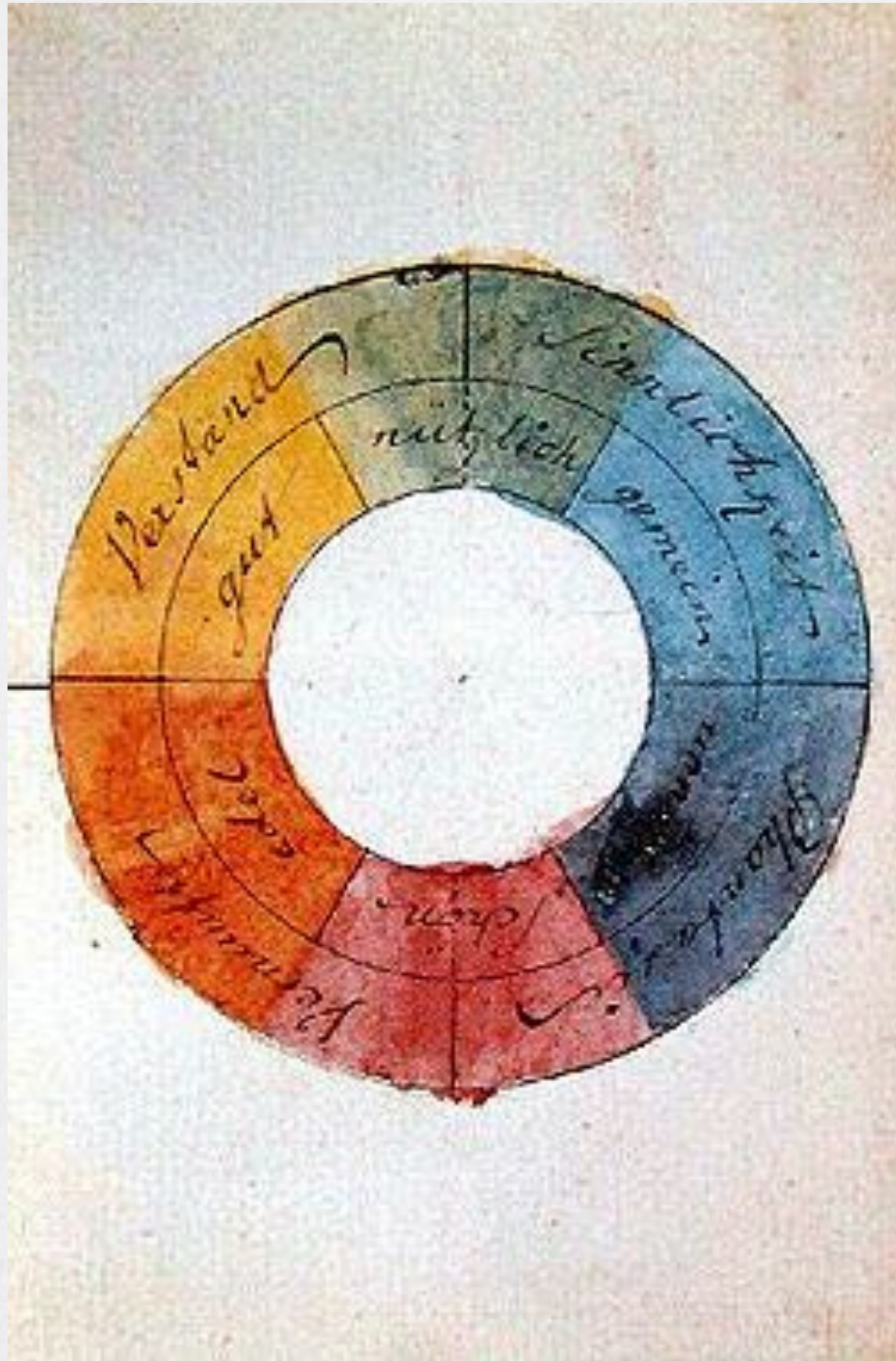
What colour is it?



observer took steady
on small coloured obj
Taken away after
eyes removed
Spectrum of another
Colour - visible on
white plane:
arising from image
how belongs to e
P 2
G 01

- 1) To look out at coloured object
- 2) After removed - 'coloured image'





on the small coloured object, and let it be taken away after a time while his eyes remain unmoved; the spectrum of another colour will then be visible on the white plane. The coloured paper may be also left in its place while the eye is directed to another part of the white plane; the same spectrum will be visible there too, for it arises from an image which now belongs to the eye.

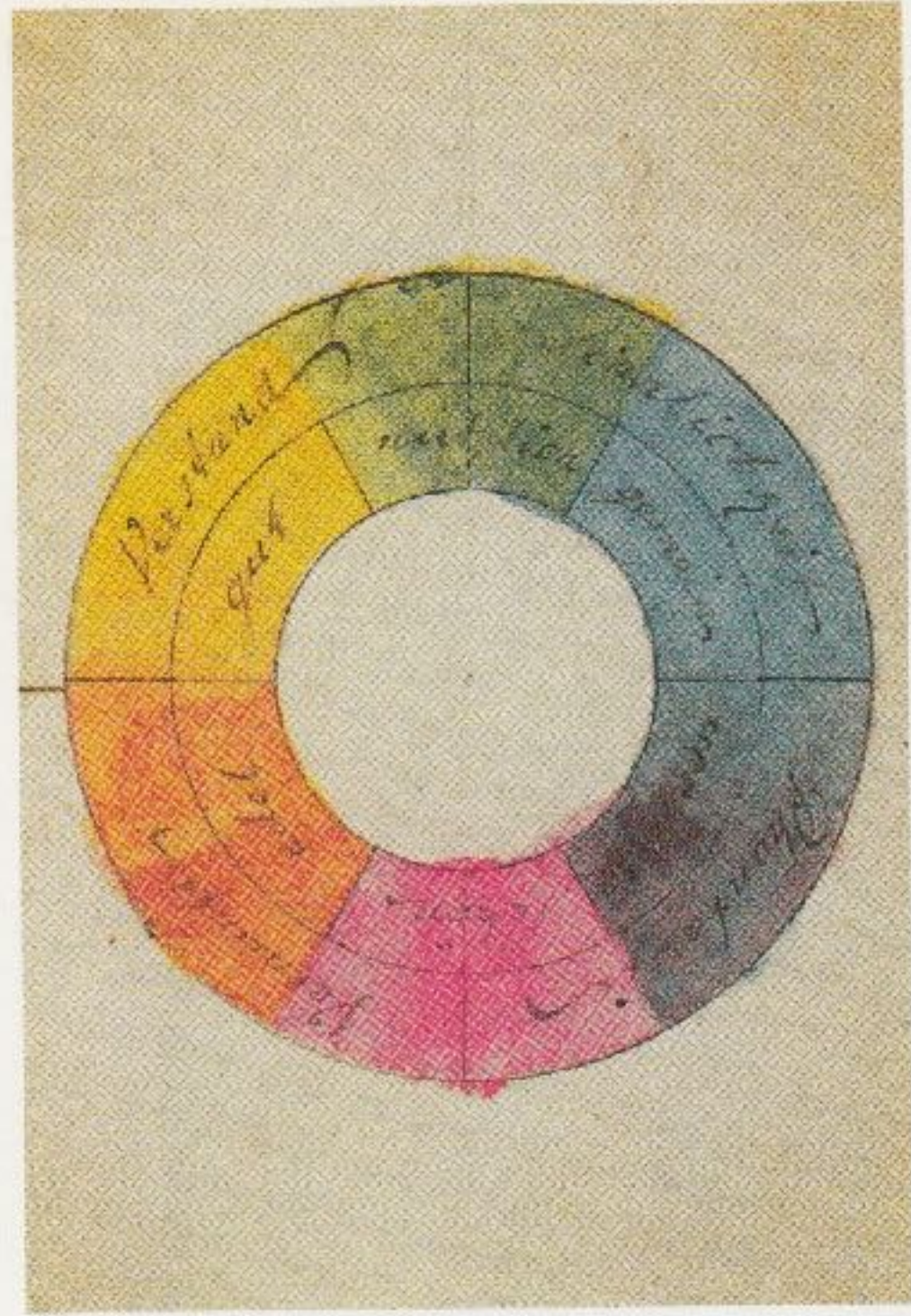
50.

In order at once to see what colour will be evoked by this contrast, the chromatic circle* may be referred to. The colours are here arranged in a general way according to the natural order, and the arrangement will be found to be directly applicable in the present case; for the colours diametrically opposed to each other in this diagram are those which reciprocally evoke each other in the eye. Thus, yellow demands purple; orange, blue; red, green; and *vice versâ*: thus again all intermediate gradations reciprocally evoke each other; the simpler colour demanding the compound, and *vice versâ*.—Note C.

51.

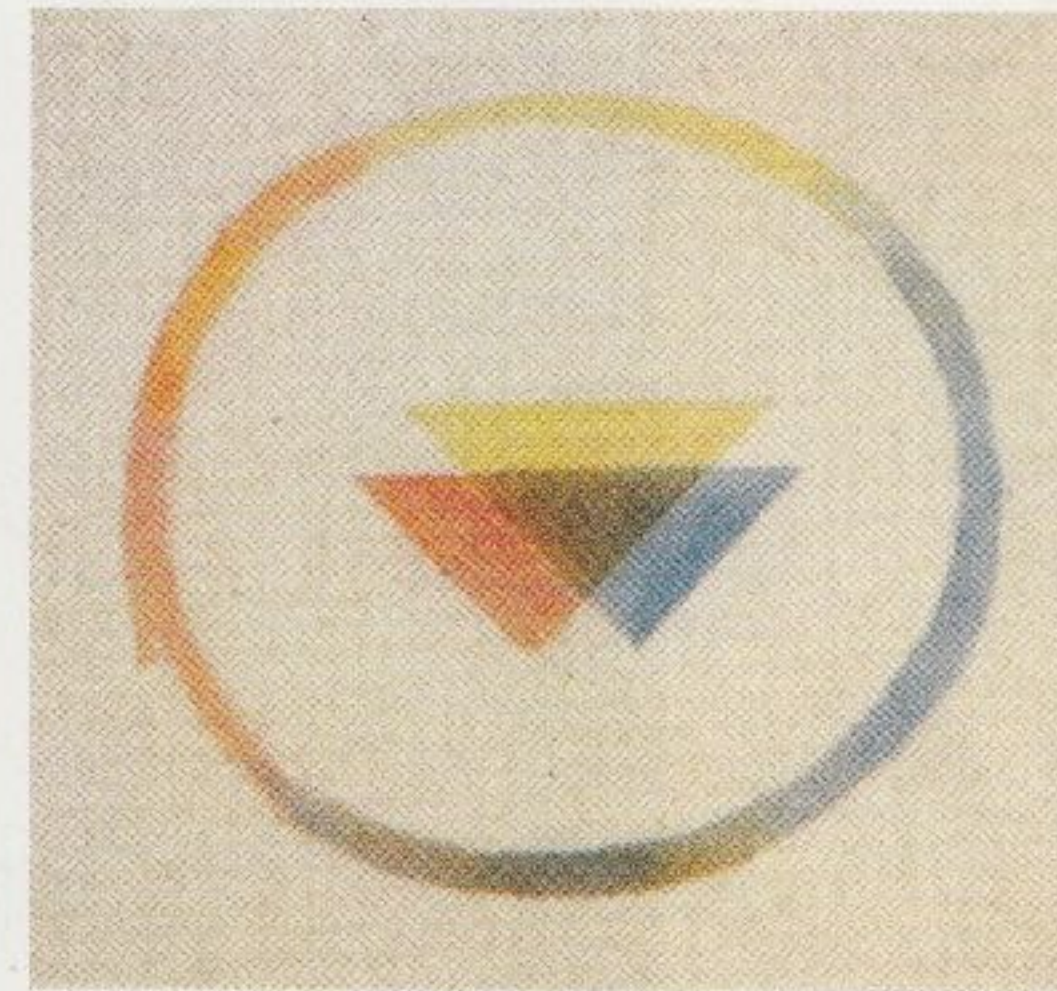
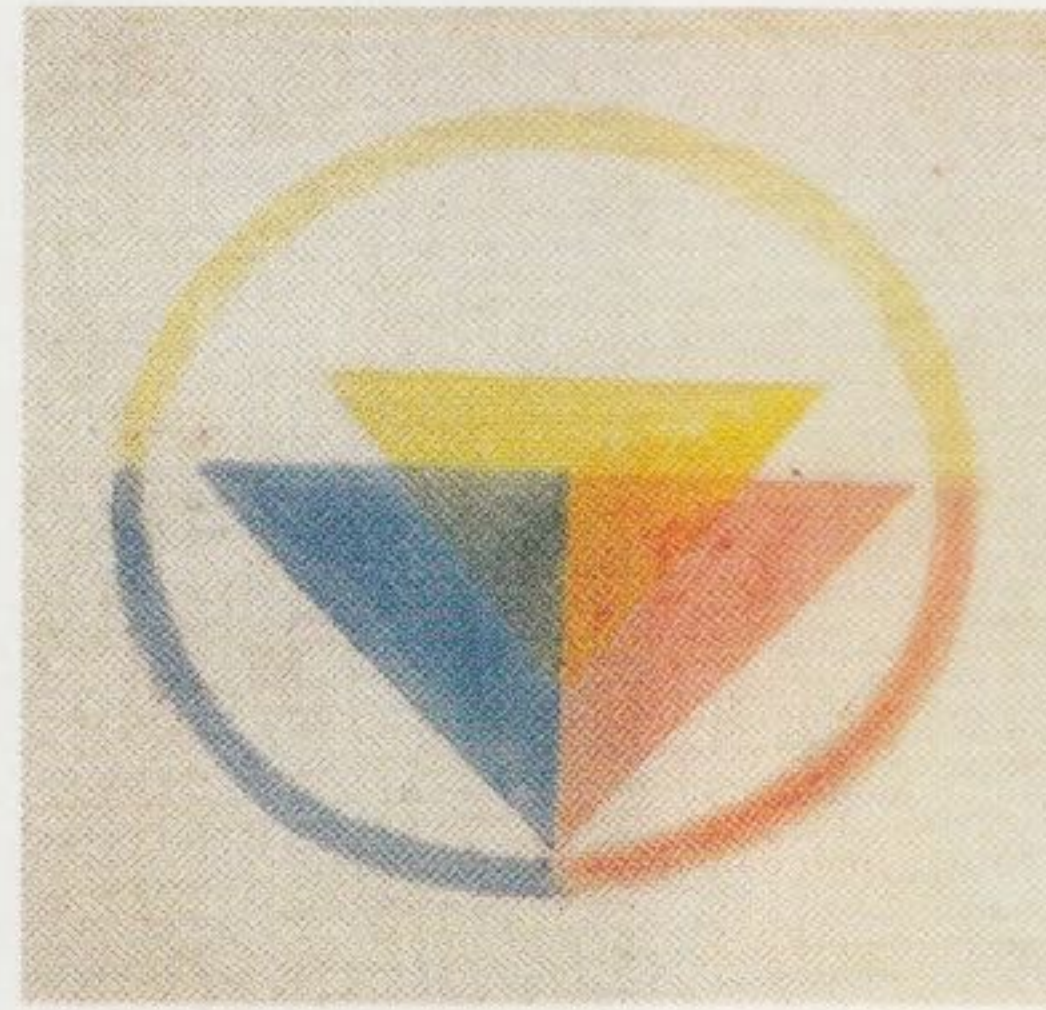
The cases here under consideration occur oftener than we are aware in ordinary life; in-

* Plate 1, fig. 3.



Johann Wolfgang von Goethe
Colour circle, 1808–10
Farbenkreis
Frankfurt am Main, Freies Deutsches Hochstift,
Goethemuseum; sketched – possibly also col-
oured – by Goethe himself

"§155. If the darkness of endless space is seen through an atmospheric haze illuminated by daylight, then the colour blue appears. The sky, as observed from high mountains during the day, appears royal blue, since the quantity of fine haze floating in front of endless, dark space is but small; as soon as one descends into the valleys, the blue becomes lighter in hue, finally turning completely into a white-blue in certain regions and with increasing haze."
(Goethe, *Theory of Colours*, HA, vol. 13, p. 363)



Colour circles
Watercolour
London, The British Museum

J.M.W. Turner - Painter

Born: Covent Garden, London 1775

Died: Chelsea 1851

Turner owned a translation of Goethe's *Färbentheorie* which divided colours to two symbolic registers: 'plus' (red, yellow and green), associated with warmth and happiness, and 'minus' (blue, blue-green and purple), associated with anxiety. The painting was first exhibited with a companion, *Shade and Darkness – the Evening of the Deluge* (fig.57), whose palette was organised around Goethe's 'minus' colours. In contrast, the colours used here are 'plus' colours, which ought to support an optimistic reading of the picture, but Turner's appended verses, when he exhibited this painting in 1843, are pessimistic. Each bubble, 'Hope's harbinger', is 'ephemeral as the summer fly / which rises, flits, expands, and dies'. God's covenant, it seems, is temporary and therefore delusive.

Beyond the symbolic register of the painting, Turner seems to have been concerned to advance the potential of light as a source of sublimity. It is not merely in the conventionally sombre tones of *Shade and Darkness*, but also in the prismatic radiance of *Light and Colour* that sublimity may be experienced. The light, retreating into the distance in *Shade and Darkness*, advances here towards the spectator, suggesting a vision of the ineffable not unlike the impulses of heaven offered in Baroque ceiling paintings. Here, though, this sublime radiance is produced by natural, not divine light. Beyond the (earthly) delusions of hope lie intimations of transcendence in nature.

—The idea that light and colour might have almost a moral force is not direct-



56 *Light and Colour (Goethe's Theory) – the Morning after the Deluge – Moses Writing the Book of Genesis* 1843 Oil on canvas 78.5 × 78.5 (30% × 30%) Tate



Shade and Darkness – the Evening of the Deluge,
exhibited 1843
Oil on canvas, 78.7 x 78.1 cm
London, Tate

The moon put forth her sign of woe unheeded;
But disobedience slept; the dark'ning Deluge closed around,
And the last token came; the giant framework floated,
The roused beasts forsook their nightly shelters screaming,
And the beasts waded to the ark.



*Light and Colour (Goethe's Theory) – the Morning after the Deluge –
Moses writing the Book of Genesis*, exhibited 1843
Oil on canvas, 78.7 x 78.7 cm
London, Tate

The ark stood firm on Ararat; th' returning Sun
Exhaled earth's humid bubbles, and emulous of light,
Reflected her lost forms, each in prismatic guise
Hope's harbinger, ephemeral as the summer fly
Which rises, flits, expands, and dies.



The Blue Rigi, Sunrise

1842



Turner's work cannot be reproduced. Even the best print only serves to awaken one's curiosity about the original. The fundamental significance attached both to nuances of colour and structure and to the fine differences between the traces of pen

Sun Setting over a Lake, c. 1840
Oil on canvas, 91 x 122.5 cm
London, Tate

Sun Setting over a Lake.

1840

"If the totality of colour is presented to the eye from the outside in the form of an object, it will be pleasing to the eye, because it thereby encounters the sum of its own sensory as reality." Turner's marginal comment: "this is the object of being [painting]". (Goethe, *Theory of Colours*, §808, HA, vol. 13, p. 502)

going to discover
sense of seeing
for first time
Ruskin

way of looking

eye

Nature + art

what is revealing
itself exactly?

Process

J.M.W. Turner is numbered among the greatest of English painters. He worked tirelessly for over sixty years, leaving behind a vast legacy of 19,000 drawings and colour sketches. His artistic span is remarkable, extending from around 1790 – the closing years of the 18th century – to the 1840s, when he died.

It is only with difficulty that we can understand the man whom we now regard as the greatest English painter of the 19th century. Not until his later work did he achieve a vision of nature hitherto impossible. Even in the 1840s, he was still a man who was discovering the world for the first time.

As early as 1843, John Ruskin, the most influential art critic and the first passionate defender of the Impressionist movement, called Turner's pictures "Modern Painters". Ruskin's way of looking at art was revolutionary. He argued that the whole effect of painting is not in the ability to acquire once again that state of mind which we find in other words a way of looking at things in nature. In other words, a man would see them if his sight were restored. It is not to change our vision that renders Turner's pictures so important – not only to the dating of his works – which is a matter of course – or to the efforts of art historians to place his work in the artistic development of the first half of the 19th century, but to the fact that his pictures, "but I wished to show what was intended exclusively for the eye. The pictures were made by access through the act of observation to the nature of the picture equally, fresh access to the nature of the picture appears substantiated precisely by the interaction of the picture with the other. His painting defines anew the relationship between the picture and the other. Extensive research has been conducted into how he developed a style of painting through his own observations of nature. A conscious understanding of the process by which Turner's pictures were made is essential. This effect is anything but a matter of course. It is the result of creative possibilities in art, something which is not predetermined by the course of his creative activity. His later pictures and their comprehension depends on a consciousness which they disclose themselves to the eye. It is in the interaction of these diverse elements interacting here, to take notice



"§154. The sun, when seen through a certain amount of haze, presents a yellowish disc. Its centre is often bright yellow, the edges already turning red. In a situation where the air is filled with smoke (as was the case in the north in 1794, for example), and even more so with regard to the physical condition of the atmosphere in southern regions when the sirocco is blowing, the sun appears ruby-red, as do all the clouds surrounding it in the latter circumstances, which then reflect this colour. The red sky in the morning or the evening is due to the same cause. The sun announces itself to us via a red hue as it shines through a dense mass of mist. The further it rises, the brighter and yellower it shines."

(Goethe, *Theory of Colours*, HA, vol. 13, p. 363)

* Goethe
how is his
observation?

ILLUSTRATION PAGE 82:
Detail from *The Fighting 'Ténéraire' tugged to her last berth to be broken up*, 1838
(cf. illus. p. 85)