HARRIS, Moses [1731-1785]. 1770 (circa). *The natural system of colours, wherein is displayed the regular and beautiful order and arrangement, arising from the three primitives, red, blue, and yellow, the manner in which each colour is formed, and its composition ...* (London: Laidler).

Transcripto de la reproducción en *Color Research and Application* **29** (5), 333-341, del ejemplar que posee Werner Spillmann.

Se ha actualizado la grafía antigua y corregido algún evidente error de imprenta (no obstante, se ha dejado “Premitives” —por “primitives”— en la página de título). Las aclaraciones a pie de página y sus envíos entre corchetes son agregados.
THE NATURAL

SYSTEM of COLOURS,

Wherein is displayed the regular and beautiful Order and Arrangement,

Arising from the Three Premitives, Red, Blue, and Yellow,

The manner in which each Colour is formed, and its Composition,

The dependance they have on each other, and by their

HARMONIOUS CONNECTIONS

Are produced the Teints, or Colours, of every Object in the Creation,

And those Teints, tho’ so numerous as 660, are all comprised
In Thirty Three Terms, only

BY MOSES HARRIS,

AUTHOR of the AURELIAN, &c. &c.

Printed at LAIDLER’s OFFICE, Princes-street, Licester-Fields,
TO

SIR JOSHUA REYNOLDS,

P R E S I D E N T

O F T H E

ROYAL ACADEMY,

S I R,

ENCOURAGED by your Approbation of the following pages, and which was done with that peculiar candours, which marks and distinguishes, the greatest master of the pencil in Europe: I do with the greatest happiness place it under your patronage, as an honour, preferable to any other which can be conferred, either on this work, or myself.

It would be needless in me to declare those merits, already echoed through the world, yet I cannot help reflecting what that mind must be, which directs the pencil to give life to mere substance
substance: and birth to an almost new creation, who has also, swept away those doubts which hung on my mind, as sensible of my own fallibilities, and encouraged me to bring that forth to the world, which otherwise might have remained for ever in oblivion; it is therefore with the strongest symptoms of gratitude, I subscribe myself,

Sir,

Your most humble,

Obliged, and most

Obedient servant,

MOSES HARRIS.
EXPLANATION OF
THE NATURAL SYSTEM
OF
COLOURS, &c.

THE present mode adapted in this attempt is to discover all the variety of
colours which can be formed from Red, Blue, and Yellow; which three
grand or principal colours the author presumes do contain all the colours and
teints in nature when mixed or blended with each other in the various proportions
of their powers: each of these mixtures or compounds arising from such inter-
course being degraduated insensibly from the deepest or greatest powers, to the
weakest or most pale, gave some flattering hopes of effecting that, in some
measure which the author has so long been labouring to discover. The very
plain and easy principles on which it is founded, it is hoped will not prejudice
the reader disfavour of it, but as nature in general in all her operations is sim-
ple and plain it is hoped it should rather plead in its behalf than otherwise.

He has endeavoured to take nature for his guide and assistant, as the arrange-
ment of the principal colours is methodized according to those reflected by the
prism, where we find the orange colour lays between the red and yellow—
green between yellow and blue—and purple between the blue and red, which
coming in continual succession gave the first hint that they should be placed in
a circular form, to give opportunity for that succession which he conceived so
necessary in an attempt of this kind, or agreeable to that order which nature
seems to demand. Here we cannot help taking notice of the difference which
nature seems to pay to the six first principal colours, viz. red, yellow, blue,
which are the primitives, and orange, green, and purple, the mediates. For
these are the colours with which she has decorated most of her flowers: but
she seems to give the preference by far to the three first or grand primitives,
and more commonly dresses then in red, blue or yellow, especially those which
grow naturally wild, neither will any translucid body from the proud dia-
mond to the humble glass reflect any other colours, as the prism proves to a
demonstration.
The nature of the thing therefore seems to insist in our dividing the whole into two parts, which for distinction sake are called, one the prismatic because it admits of no other colours but such as are shewn[*] by the prism; The other compound as it admits of all other colours in nature, not found in the prismatic part.

By the word colour, or colours, we would be understood to mean one or all of those appearances which are seen in the rainbow refracted by the prism, or that so beautifully decorate the leaves of flowers, or any other substance except such as are white, which is but a term for a total privation or absence of colour, and may be understood by the appearance of snow, or any other colourless substance whether transparent or opaque, as allum which is transparent and colourless in its natural state, but opaque and white as snow when reduced to an impalpable powder, but then as colourless as before. That appearance which is in general term’d black, is a compound of red, blue, and yellow, in equal force, and of the strongest powers, which by violently opposing each other, and in very unequeal contest, (for as each one has to contend with the other two,) are all three continually defeated, causing a total confusion and an obscurity in darkness, so that neither of them can be any more distinguished, viz. examples, fig. 9. At the end of this book. This appearance finds its place in the centre of both parts of the system, where all the colours are supposed to meet in their fullest powers, or strength; but it was thought at the same time it would not be improper to represent it by three triangular pieces of stain’d glass, the points of which lay one over another in the centre of each scheme whereby the interposing parts become black. It will, it is conceived, become necessary in this place to say what is meant by the terms red, yellow, blue, which are the three grand primitives; and orange, green and purple, which are call’d mediatcs, so as to convey them to the ideas by some known substance, fruit or flower, giving at the same time a pecimen of each in water colours as beneath.

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PRIMITIVES

Red — Vermillion, Wild-poppy.

Yellow — Kings Yellow, Butter-flower, or Meadow-renunculus.

Blue — Ultra Marine, Cornbottle-flower.

Orange — Red Orpiment, Garden Marigold.

GREEN — Sap-green, Leaves of the Lime-Tree.

Purple — Hairy Sheeps-seabious, or the flower of the common Judas-Tree.

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MEDIATES

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[*] shown
To begin with the first or prismatic part, it has been said before that the three primitive colours are red, yellow, and blue, and from which all other colours are supposed to originate, they are the greatest opposites in quality to each other and naturally take their places at the greatest distance from each other in the circle. Between these respectively are placed the mediates, viz. Orange, Green, and Purple, for if red and yellow be mixed together they will compose an orange: and therefore it is placed between the red and yellow. If yellow and blue are mixed together, green is produced and accordingly takes its place between those two colours, and to blue and red producing a purple, the purple must be placed between them. Respecting the whole circle, the gradual changing of the colours seen by the eye when moved round from the red at the top toward the right, it will be seen how the red softens gradually to an orange: the orange to yellow, the yellow to green, that again to blue which graduates to purple, and that coming to the upper part of the circle is lost in red, which compleats the whole circle of prismatic colours, and clearly demonstrating at the same that in this system there cannot be a colour in the whole circle composed of more than two of the others. The number of colours in this circle are supposed to be eighteen, each of these being divided into twenty parts or degrees of power, from the deepest or strongest, to the weakest; or from the outermost circle to the innermost are called teints, of which the whole circle contains, 360, so that each of the colours in the innermost or smallest circle contains 20 degrees of power, but each of the outermost but one.

We now come to that part called compound which is supposed to contain all those colours possible to be made where all the three primitives are employed, in order to effect this: instead of the primitives, red, yellow, and blue; the three mediates, orange, green, and purple are substituted in their places, each of which being composed of two primitives, will according to the example of the first, and by the same mode of proceeding, produce all the compounds and their teints possible to be formed of the three grand primitives, which in this second part (exclusive of the orange, green, and purple included in the prismatic) amount to 15 colours, which, when each is divided into twenty degrees of power, will produce 300 teints, which when added to the 360 contain’d in the first or prismatic part amounts in the whole to 660, these, altho numerous, yet the colours amount to no more than 33, which are ranged in such natural order as easily to be retain’d in the memory and are as beneath.

PRISOMATIC

Red,
Red, orange-red, red-orange,—Orange, yellow-orange, orange-yellow—Yellow, green-yellow, yellow-green—Green, blue-green, green-blue—Blue, purple-blue, blue-purple—Purple, red-purple, purple-red.

**COMPOUND.**

Orange, olave-orange, orange-olave—Olave, green-olave, olave-green—Green, slate-green, green-slate—Slate, purple-slate, slate-purple—Purple, brown-purple, purple-brown—Brown, orange-brown, brown-orange.

If the colours were divided into a greater number of teints, or divisions, which it is conceived is all that can be done in attempting to improve it, it would not render it more useful but rather tend to create confusion between the teints which is now but sufficiently conspicuous; and would be one step toward reducing it to its premative[1] chaos, from which the author has taken so much pains to extricate it.

In contrasting colours so frequently necessary in painting, this work will be of great use, for if a contrast is wanting to any colour or teint, look for the colour or teint in the system, and directly opposite to it you will find the contrast wanted, viz. Suppose it is required what colour is most opposite, or contrary in hue to red, look directly opposite to that colour in the system and it will be found to be green, the most contrary to blue is orange, and opposite to yellow is purple, and of every colour, and teint, throughout the whole system no one of them contain in their compositions any of the colours of which those on the opposite side are formed, blue for instance which is one of the primitives, has for its opposite the orange, which is composed of red and yellow, the other two primitives, and consequently of contrary natures. It was thought necessary to say so much respecting the use of this system in contrasting colours: as it not only illustrates and in some measure serves to confirm the property of the principles on which it is founded; but opens a door whereby farther information may be obtain’d respecting the mixing and blending of colours, and seems plainly to point our the reason why the science or systematic knowledge of colours in general hath been so dark and occult, as there has been no form, or mode, for mixing the various teints wanted in a vast variety of subjects painted. Many ways are commonly try’d by the young artist in mixing, or compounding teints, and nothing but experience in consequence of many attempts can set him right, and this is a difficulty with which he is always teazed, when his ideas are fixed and deeply bent on some other object.

It is a known fact that there are many colours which never will admit of being

[1] primitive
ing mixed together: which are these viz. green and red, as at 4, vid. examples, yellow and purple as at 6, blue and orange as at 5. As each of these mixtures is a dirty unmeaning colour, but if the colours so mixed are possess of all their powers, they then compose a deep black, as all opposites in either system or scheme will do, for these in the circle as said before are opposites, therefore no colour or teint can be formed by a connection so unnatural, therefore any two colours wanting to be mixed, must not be chosen as to great a distance as one third of the circle, the nearer they are situated the better; suppose an orange colour was wanted, red and yellow will effect it, as at No. 1 in the Examples, but red orange and yellow orange mixed will do much better, as at 8, because they are nearer by four colours. So with respect to composing a green, blue and yellow will make one, as at 2, but yellow and blue green will make a far brighter colour, as at 7. In short if red and blue will not make a fine purple, which every painter knows, it cannot be expected blue and yellow will make a proper green, nor red and yellow a fine orange, as they are not inclined in hue toward each other. With respect to the colouring of both parts of the system it is intended but to elucidate, direct the eye, and assist the ideas of the reader, and it must be observed here, that the author treats on colour in the abstract. Colour which we may call material, or artificial, are very imperfect in themselves, and being made of various substances as animal vegetable and mineral, maketh the colouring part extremely difficult if not impossible to be done, with any degree of perfection, a colour according to the system cannot be perfect, except if possesses in itself all the twenty degrees of power or more, how useful soever it may be in painting, viz. indigo, gambodia, carmine, sap green, &c. are what may be called perfect, because they each of them contain twenty degrees of power and more, the thicker they are laid on the deeper the colour, even until they are lost in themselves.

Vermillion, virditer, red lead, &c., are imperfect for if they are laid on ever so thick they will not become darker, being naturally opaque and light of themselves. Some farther observations may be agreeable to the curious reader. It was mentioned before that any two colours which are opposite each other in this system, when blended together will compose a black, but those when mixed in their weakest powers will so deceive they eye that it will, and does appear white, and this deception is visible every day in our linen.

The linen by frequent washing will change into a pale saffron colour, caused by the iron, with which all water is impregnated more or less, except rain water. The laundress to remove this appearance has recourse to the blue bag, as it is
is termed, which when used to that nicety required, will cause that neutrality which deceives the eye, and nothing being near it truly white to compare it with, it has all the appearance of a total absence of colour, look into the system and opposite to pale orange the colour of the linen, and you will find pale blue.

Glass in the making is always more or less of an olave green, to remove the appearance of which, they make use of manganese, which being of a purple-brown causes a neutrality when mixt, and the glass appears white, look in the compound scheme, and opposite to olave green you will see purple brown. It is not every eye which can convey a proper idea to the mind of what it sees, especially when troubled with comparatives: viz. if a pair of green spectacles are placed before the eyes, and viewed through for about five minutes, and then taken away every scene and object will look of a fiery red, opposite to green you will find red.

About the time of twilight in morning or evening, light a candle and set it on a table near the window, a sheet of white paper by it, so that the paper and the candle may be in a parallel line with the window; then hold a piece of stick upright with one end on the paper, so that the candle by its light may throw the shadow of the stick on the paper, which will be of a very fine blue colour, this appearance arises from the orange colour which the flame of the candle casts all over the paper, except that part shadowed by the stick. Look into the prismatic system which will account for this, by inserting the reader that blue is the contrast to orange.

What has been said in the course of this work, I hope is sufficient to prove that the three primitives will compose any teint in nature, and to prove them the only primitives, no teints or colour in nature will compose one of them, four could that be done (which is contrary to nature) they would be no longer primitives but loose that grand title, and the honourable situation which they demand at presenting the prismatic or first system. The mediates orange, green and purple, are only formed by the gradual approaches of the primitives toward each other, and perhaps it may be worthy observation, that the primitives and mediates have each of them a name or term peculiar to itself, and which have no meaning or tendency to any thing but colour, the word orange seems indeed as if the colour took its name from the fruit, but the fruit took its name from the colour, for the proper name of the fruit is the orange citron.

**FINIS.**
[Esta página tiene cuadrados calados a través de los cuales se ven las mezclas de la página siguiente]