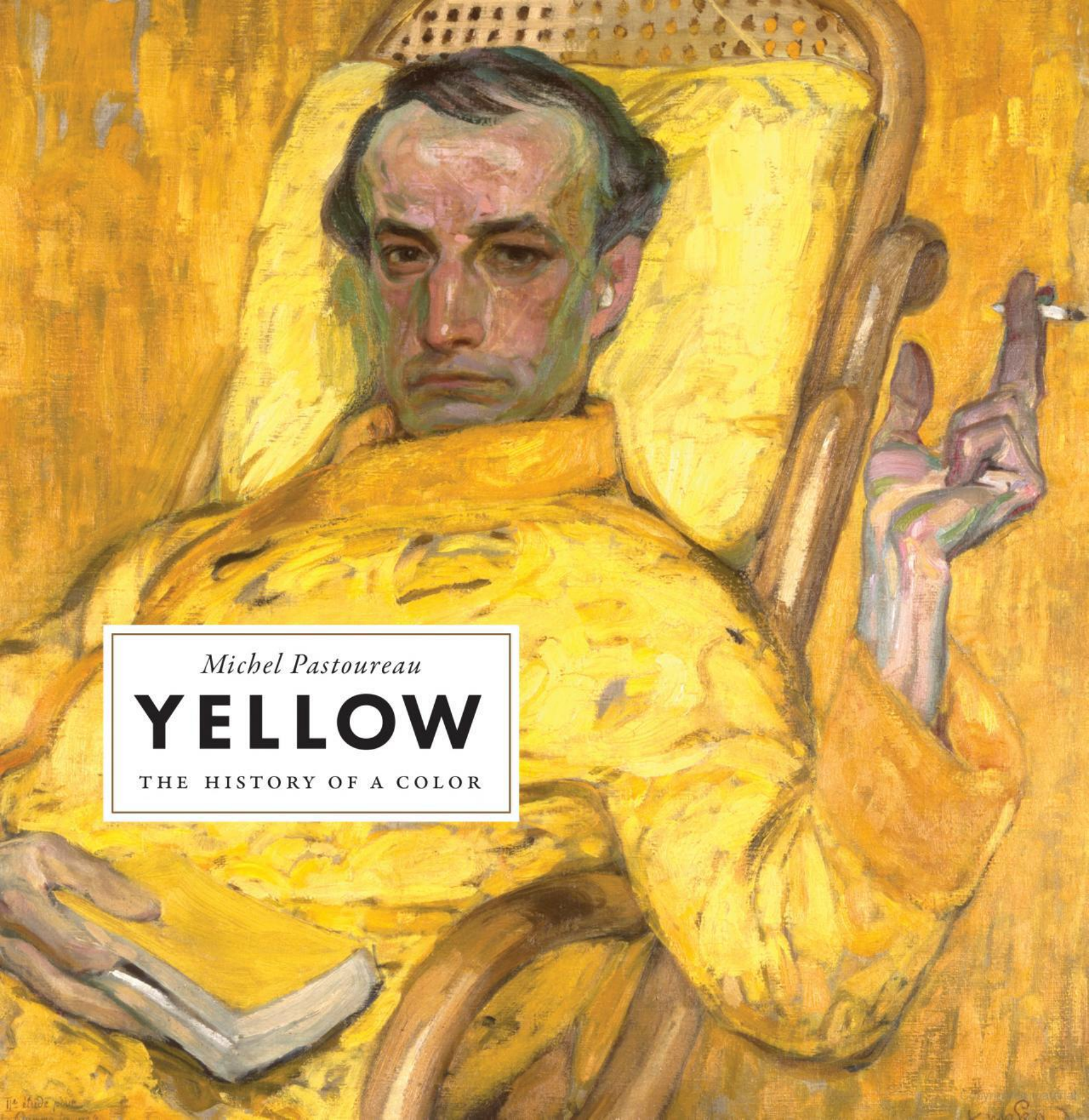

Michel Pastoureau

YELLOW

THE HISTORY OF A COLOR

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MICHEL PASTOUREAU
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THE HISTORY OF A COLOR

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Yellow is a gay, soft, and joyous color,
but in poor light it quickly becomes unpleasant,
and the slightest mixing makes it
dirty, ugly, and uninteresting.

Goethe

Defining what constitutes color is not an easy exercise. To understand this, we only have to open a dictionary. It is always difficult for authors to offer a clear, pertinent, intelligible definition, within a reasonable number of lines. Often the text is long and involved, and still somehow incomplete. Sometimes it is inaccurate or fairly incomprehensible to most readers. With the word *color*, dictionaries rarely fulfill their function adequately, in French or any other European language, or any language on the planet, for that matter.

There are various reasons for these difficulties. Not only has the definition of color varied widely over the centuries according to periods and societies, but even just within the present age, color is not perceived the same way across the five continents. Every culture conceives of it and defines it according to its own environment, history, knowledge, and traditions. In this regard, Western thinking is by no means the final authority, much less the "truth," but only one kind of knowledge among many. Or not even one kind. Often I find myself participating in interdisciplinary conferences on color that bring together researchers with diverse backgrounds: sociologists, physicists, linguists, ethnologists, painters, chemists, historians, anthropologists, musicians. We are all very happy to meet with one another to discuss a subject that is dear to us, but after a few minutes we come to understand that we are not discussing the same thing. Each specialty has its own definitions for color, its own classifications, certainties, and sensibilities. Sharing them with others is not easy, even impossible sometimes.

Over the course of centuries, color was first defined as matter, then as light, and later as a sensation: that of light falling on an object, received by the eye, and transmitted to the brain. In many languages, the etymology of the word designating color emphasizes the first of these definitions. Originally, color was conceived (and perceived) as a material, a thin film covering beings and things. That is especially the case in Indo-European languages. The Latin word *color*, for example, from which derive the Italian, French, Spanish, Portuguese, and English terms, among others, is part of the large family of the verb *celare*, which means "to hide," "to envelop," "to conceal." Thus color is that which hides, covers, clothes. It is a material reality, a second skin or surface that envelops the body. The same idea is already present in Greek: the word *khrōma* (color) derives from the word *khrōs*, which designates the skin or any bodily surface. The same is true in German and most Germanic languages. To consider just one example, the term *Farbe* comes from the Germanic **farwa*, which means skin, film, envelope. Other languages, whether Indo-European or not, express similar ideas. Color is a material, a surface covering another surface.

The lexicon is one thing, however, and scholarly theories are something else. Early on, color stopped being considered simply matter, becoming also and especially light, or rather, a part of light. Aristotle, one of the first theorists, viewed color as a weakening of the light from the sun coming into contact with objects, and he proposed the oldest chromatic scale known, ranging from light to dark: white,

yellow, red, green, purple, black. In the West this arrangement of colors remained the basic scientific order until the late seventeenth century. Or more precisely, until 1666, the year that Isaac Newton carried out his famous experiments on the prism and succeeded in dispersing the white light of the sun into variously colored rays. Having done so, he proposed a new color order to the scholarly world: the spectrum, an order within which there was no longer a place for either black or white, and where colors formed a sequence unrelated to the Aristotelian classification in use until then. In the eighteenth century, this new Newtonian order—violet, indigo, blue, green, yellow, orange, red—gradually emerged as the standard reference in most of the sciences, first among them physics, followed by chemistry.[1] That is still the case today.

Defining colors as light and no longer simply as matter constituted a major turning point in the world of science and technology. Scientists gradually learned to master and measure colors, to produce and reproduce them as they pleased. Artisans learned to break them down into multiple shades. Henceforth controllable, verifiable, and reproducible, color gradually lost some of its mystery, especially since artists themselves, as early as the eighteenth century, submitted to the laws of physics and optics, articulating their palette around the spectrum and distinguishing primary, complementary, and even tertiary colors.

More recently, the neurosciences have taken an interest in colors and have stressed the importance of visual and perceptual phenomena; color is not simply a material coating or a set of subtle variations of light, it is also and especially a phenomenon of perception. It emerges from the conjunction of three elements: a source of light, an object upon which that light falls, and a receptor organ, that is, the human being equipped with complex apparatus—simultaneously anatomical, physiological, and cultural—formed by the eye-brain pair. Opinions begin to diverge when the human being as receptor is replaced experimentally by a simple recording device. For the hard sciences, what is recorded is still color, measured in wavelengths. For the human sciences, what is recorded is not color but simply light; color does not exist if it is not perceived; that is, not only is it seen with eyes but it is also decoded with memory, knowledge, and imagination. "A color that is not seen is a color that does not exist," declared Goethe already in 1810, in the third part of his famous *Farbenlehre*. Today, however, various tests and experiments show that a person blind from birth who reaches adulthood possesses almost the same chromatic culture as a sighted person, thus contradicting Goethe as well as Newton.

The colors of the physicist or chemist are not those of the neurologist or biologist. But neither are the colors of the neurologist or biologist—at least not entirely—those of the historian, sociologist, anthropologist, or linguist. For these disciplines—and more generally for all the human sciences—color is defined and studied first as a social phenomenon. More than nature, pigment, light, eye, or brain, it is society that "makes" color, that gives it its definitions and meanings, that organizes its fields and modes of operation, that articulates it into multiple codes and value systems. Without society, without culture, there are no neatly outlined, named, categorized colors; there are only infinite colorations forming an improbable continuum.

*

If defining color is not an easy task, defining yellow is even harder. To say that it is the color of a lemon, saffron, gold, or ripe wheat—as one generally reads in dictionaries—is not false but does not really constitute a definition. As for asserting that yellow is the color located in the spectrum between this or that wavelength, such a proposition would only satisfy a physicist. What can the human sciences do with a definition like that? Nothing, absolutely nothing.

The case of yellow is by no means unique. The same comments could be made regarding any color whatsoever. The Austrian philosopher Ludwig Wittgenstein reminds us of

this in a quote that remains justly famous and that I like to cite in most of my books because it seems to me among the most important ever written with regard to colors:

> If we are asked what the words *red*, *yellow*, *blue*, and *green* mean, we can of course immediately point to things that are those colors. But our capacity to explain the meaning of those words goes no further. (*Bemerkungen über die Farben*, I, 68)

Despite this limitation, in the chapters that follow I have attempted to relate the long, slow history of yellow in European societies, from the Paleolithic period to the present. That has not been an easy task because it is a turbulent history, and the documents for studying it are less expansive than for other colors. In any given period, yellow is less conspicuous than red, black, blue, or even green. There are various reasons for that but one overrides the others: gold very often occupies a large part of the place reserved for the color yellow. Writing the history of yellow in the West thus also means writing in part the history of gold, an abundant and difficult history since there are so many areas gold enters into and so many issues that its study raises. The historian often has more to say on gold than on yellow. Gold presents us with a host of questions because it is not only a color, it is also light and matter and is well documented in every period (at least beginning with the third millennium BCE). As for yellow, it seems to play hide-and-seek with the researcher. Sometimes it is very present in the documentation, sometimes it remains inconspicuous, even hidden (as in the early Middle Ages). Then it becomes necessary to substitute gold, which in and of itself constitutes a vast problematic and chromatic ocean.

In order not to drown in that ocean, in order for this work to retain reasonable dimensions, for it to remain truly a history of yellow and not a history of gold, I have tried my best to keep gold at a distance, to call on it only for the periods and cases in which it was indispensable: ancient mythologies, the origin of coins, medieval heraldry, alchemy, baroque art, and a few others. Despite the documentary silences I sometimes encountered, this book is very much a history of yellow, constructed around a few solid axes allowing us to find our way in a shifting and multiple chromatic labyrinth.

*

The present book is the fifth in a series undertaken twenty years ago. Four works have preceded it: *Blue: The History of a Color* (2001); *Black: The History of a Color* (2009); *Green: The History of a Color* (2013); *Red: The History of a Color* (2017), all published by Seuil and Princeton University Press. As with the preceding books, the plan for this one is chronological; it is very much a history of the color yellow, not an encyclopedia of yellow, and even less a study of yellow in the contemporary world alone. I have tried to study this color over the long term and in all its aspects, from lexicon to symbols, and by way of everyday life, social practices, scientific knowledge, technical applications, religious values, and artistic creations. Too often histories of color—what few exist—are limited to the most recent periods or to pictorial matters alone, which is very reductive. The history of painting is one thing, the history of colors is another, and much more vast.

That said, as with the four preceding works, this one only appears to be a monograph. A color never occurs alone; it only derives its meaning, it only fully "functions" from the social, lexical, artistic, or symbolic perspective insofar as it is combined or contrasted with one or many other colors. Hence, it is impossible to consider it in isolation. To speak of yellow is necessarily to speak of red, green, blue, and even white and black.

These five works form an edifice I have been working to build for almost half a century: the history of colors in European societies, from Roman antiquity to the eighteenth century. Although, as readers will find in the pages that follow, I range considerably beyond and before those

periods, it is within that—already quite ample—slice of time that the essence of my research lies. Similarly, I limit my research to European societies because for me the issues of color are first of all social issues. As a historian, I am not competent to speak about the whole planet and not interested in compiling, second- or third-hand, works by other researchers on non-European cultures. In order to avoid making foolish claims, plagiarizing, or recopying the books of others, I have limited myself to what I know and what was the subject of my seminars at the École Pratique des Hautes Études and the École des Hautes Études en Sciences Sociales for almost forty years. A warm thanks to all my students and doctoral students, as well as my auditors, for the fruitful exchanges we had then, and which I hope will continue.

Scales of Yellow, Gray, Green, Pink

Colors and music are closely related and share a common vocabulary: tone, shade, scale, harmony, value, not to mention the adjective "chromatic." Aristotle already emphasized this kinship between sounds and colors, but it was only in the eighteenth century, after Newton's discovery of the spectrum, that notes and colors began to appear in single diagrams. Yellow found its place between *fa* and *sol*. Paul Klee, *Monument im Fruchtland*, 1929. Bern, Zentrum Paul Klee.

A BENEFICIAL COLOR

(FROM EARLIEST TIMES TO THE FIFTH CENTURY)

Defining yellow, as we have seen, is a difficult task, but identifying the period in which human beings began to make it into a specific chromatic category is perhaps even more difficult. And it happens that the two questions are linked. In truth, color is not a fact of nature but a cultural construction; it is society, not nature, that "makes" color. Of course plants, minerals, and many other natural elements present multiple colorations that human beings—like other animals, but much later—gradually learned to observe, recognize, and distinguish for utilitarian ends (to spot ripe fruit, dangerous creatures, favorable soils, beneficial waters, and so on). But those colorations were not yet colors strictly speaking, at least not for the historian. For the historian, as for the anthropologist, ethnologist, and linguist, colors only truly appear when societies begin to group those colorations observable in nature into several large sets, limited in number but coherent, and when they gradually isolate some from others, to which they eventually give names. In this way, the origin of colors really does appear to be a cultural construction and not a natural phenomenon, whether physical or physiological. That construction took place at different times and following different rhythms according to society, latitude, climate, utilitarian needs, symbolic goals, and aesthetic concerns. And according to each color as well; they did not all emerge at the same time, at least not in the West.

In this slow, complex process, three large sets seem to have been developed before all others: red, white, and black. That does not mean, of course, that other colorations like yellows, greens, blues, browns, and purples did not exist; they were found abundantly in nature. But these colorations did not become "colors"—that is, categories established by society and conceived in an almost abstract way—until later, sometimes very much later (blue, for example). Moreover, that is why the red-white-black triad long retained superior lexical and symbolic power in many areas.[1] And that is perhaps more true for red than for white or black. Indeed red was the first color to be made and then mastered in Europe, first in painting, as early as the Paleolithic period, later in dyeing, in the Neolithic period. It was also the first color to be linked to stable, recurrent ideas that played an essential role in social life: strength, power, violence, love, beauty. Red's preeminence also explains why the same word signifies "red" and "color" in some languages, "red" and "beautiful" in

PREVIOUS SPREAD

The Riches of Agriculture

Agriculture constituted the principal resource of the Mediterranean Basin and occupied the majority of the population, as much in Egypt as in ancient Greece and Rome. Recalling the color of gold, the golden yellow of ripe wheat and grains, fruit and honey, and even the coats of certain sheep and cattle, enjoyed very positive symbolism: light, warmth, happiness, fertility, prosperity. The Latin lexicon reflects this link between the fruits of agricultural labor and the color yellow: *croceus* designates saffron yellow, which tends toward orange; *luteus*, a dull yellow from weld and broom; *helvus* and *melleus*, yellows the color of honey; *vitellus*, the yellow yolk of an egg; and *flavus*, the golden yellow of all that ripens in the sun.
Mural painting representing the labors of the field. Deir el-Medina, Egypt, tomb of the artisan Sennedjem, c. 1280–1270 BCE.

Ancient Gold Coin

Gold stater of Philip II of Macedon, head of Apollo with laurel wreath, c. 320 BCE. Paris, Bibliothèque nationale de France, Cabinet des médailles.

others.[2] Gradually, white and black were added to red to form an initial triad around which the oldest color systems were constructed. Ancient mythologies, the Bible, tales and legends, toponymy, anthroponomy, and especially the lexicon provide a wide range of evidence for this.[3] Green and yellow only joined this original triad later, the dates varying according to the culture, but rarely before the Greco-Roman period. As for blue, it does not seem to have become a color entirely its own, definitively ranked with the other five, until well into the Christian Middle Ages.[4] That does not mean it did not exist before then, obviously, but its various colorations had not yet been grouped into a single coherent set, abstracted from their physical occurrences.

Pompeiian Yellow

In Pompeii, most of the yellow tones found on walls are ocher based (limonite, geothite), sometimes with carbonate of lime added. Various receptacles discovered in many villas teach us that once heated, these yellow ochers were transformed into red and even brown pigments.
Centaur and maenad. Mural painting in the "Villa of Cicero" in Pompeii, c. 40–60 CE. Naples, Museo Archeologico Nazionale.

Painted Pebbles from Mas-d'Azil

The decorated cave of Mas-d'Azil, located in what is now Ariège, at the foot of the Pyrenees, has revealed many mammoth, bear, and rhinoceros bones as well as abundant movable objects dating from 17,000 to 10,000 BCE.

Among these objects are many stones painted with ocher in yellows, reds, and browns. Today they are found in various museums in France and Europe. Saint-Germain-en-Laye, France, Musée d'Archéologie Nationale.

seems already to fulfill prophylactic, deictic, and aesthetic functions. Yellow ocher is not absent but it is less common and less old (about 45,000 or 40,000 BCE for the earliest traces). Attempting to know what it represents returns us to conjecture.

The best place to study the prehistoric painters' palette is on cave walls where it is most complete, rather than in tombs or on objects. That palette is, in truth, limited, even in great works like those found in the most famous caves: Chauvet, Cosquer, Lascaux, Pech-Merle, Altamira, and a few others, dating from 33,000 to 13,000 BCE. The number of shades present there is minimal, at least in relation

to later practices, whether Egyptian, Phoenician, Greek, or Roman. There one finds primarily reds and blacks, sometimes yellows and browns, more rarely whites (undoubtedly more recent), and never greens or blues. The black pigments have a plant carbon or manganese oxide base; the yellows come from clay soils rich in ocher; the reds have a hematite base, one of the most widespread iron ores in Europe, but they also quite frequently come from yellow ocher that was heated. Thus the questions are not so much those of sources, relatively easy to identify, as those of production. How did the painters of the Paleolithic period learn to transform a natural earth element—an ore—into a product that could be used for painting—a pigment? Similarly, where did they get the idea of heating yellow ocher to obtain red ocher, or even brown ocher? Can we already speak of a chemistry for colorants? In fact, various finds have proven that certain yellow ochers were heated in stone crucibles to rid them of water and change their color; some of those crucibles survive today and still show traces of color: yellow, red, and brown.[5]

Thanks to laboratory analyses, we also know that some yellow and red pigments were enriched with products now considered to be charges, meant to alter their covering power and their relationship to light, or even to facilitate their application on walls: talc, feldspar, mica, quartz, various fats. Surely, chemistry is very much present here. Burning wood to make charcoal to use for drawing is a relatively simple technique. But extracting blocks of clay from the earth, washing, diluting, filtering, and drying them, then crushing the collected lumps of ocher with a pestle to obtain a fine yellow powder, and finally mixing this powder with chalk, vegetable oils, or animals fats to give it different shades or make it adhere better to a rock surface is another, much more complex process. And it was already known and practiced by cave painters some fifteen, twenty, even thirty thousand years before our era.

Yellow ocher is a natural clay soil, very fine and colored by iron hydroxide. It is generally found in sandy strata composed of up to 80 percent quartz. After it is extracted, it must be separated from this sand (always in greatest quantity) and rid of its impurities. To do this, the clay must be more or less finely ground, then dispersed in water; sand and impurities settle to the bottom while the lighter particles of ocher remain in suspension. After filtering, evaporating, and drying processes, these ocher particles are collected and combined to form a sort of dense, fine-grained paste, soluble in water. Diluted and mixed with various fats and charges, this paste can be used as a pigment with often very intense coloring power. For the painters of the Paleolithic period, it was thus a relatively easy material to find and to use, neither toxic nor precious, light resistant, and able to take on many different shades of yellow.

With regard to actual pictorial techniques themselves, perhaps it is too early to speak of true "formulas," but we can sometimes observe a great variety of shades of the same color on a single wall. That is frequently the case with reds but can also be observed with yellows. No tones fall within the range of yellows tending toward green or those we now call "lemon yellow." They are all closer to orange, beige, or brown, presenting hues that could be described, from lightest to darkest, as straw, chamois, apricot, honey, russet, tawny, bister, bronze. Is this diversity on the same wall and for works dating from the same time deliberate, determined in advance, and implemented using learned procedures (mixing, diluting, adding charges, choosing specific binders)? Or is it the result of the work of time? It is difficult to know because we are not seeing the shades produced by those pigments in their original state but as time has transformed them. In any case, even in caves that remained sealed until the twentieth century, the gap between the original state and the present state is always a significant one. Moreover, we are looking at these paintings in light conditions that bear no relationship to those experienced by the prehistoric painters. On a computer screen or in a photographic print, all colors are misrepresented. And on site, electric lighting does not produce light similar to that

of torches, obviously. But how many specialists remember that when they study the cave paintings? And, simply among visitors, who is truly aware that between these paintings and the present, millions—billions?—of color images from all eras have intervened, images that neither our gaze nor our memory has been spared? These images are distorting filters; we have consumed, "digested," and recorded them in a kind of collective unconscious. Time has done its work, millennia have passed, the art has continually been transformed. That is why we do not see and will never see the cave paintings as our distant prehistoric ancestors did. That is true of the forms; it is even more true of the colors—and perhaps even more true for the yellows than for the reds and blacks.

Thus the earliest evidence of yellows produced by humans are these ocher-based pigments; for a long time they were the only evidence. The first traces of dyeing did not appear until much more recently, as late as 3000 or 4000 BCE. But even if no earlier fragments of dyed cloth survive, the appearance of dyeing must date back further, following soon after weaving, during a period when human beings were already sedentary, practicing agriculture, and living in well-organized societies.[6] Clothing increasingly fulfilled functions that were not only utilitarian but also symbolic and taxonomic, similar to those of earlier body painting: classifying individuals within groups and those groups within the whole of society. To these ends, color already played an essential role.

The oldest surviving traces of dye come from the Indus valley; they appear on cotton and fall within the range of reds. But it is possible that humans were dyeing in yellow before dyeing in red since there are a greater number of wild plants with tinctorial properties for this color than there are plants used to obtain red. Actually, most plants contain color constituents capable of dyeing any textile fiber yellow: "it almost seems that any cloth boiled with a few handfuls of leaves, bark, grass, or flowers will come out yellow."[7] Recent discoveries seem to confirm this long history of dyeing in yellow: weld seeds found during excavations of lakeside settlements located on the shores of many Swiss lakes (Pfäffikon, Zurich, Neuchâtel). The oldest of these lakeside settlements date back to 3000 or 4000 BCE.[8] Of course we cannot confirm that those seeds were harvested to use for dyeing, but we must note that weld, a tall herbaceous plant that grows in many kinds of soil, was the main plant used for dyeing in yellow from antiquity until the nineteenth century in Europe. And was it already being used in the Neolithic period? Probably so.

THE YELLOW METAL

Let us linger briefly at the end of that period prior to the appearance of writing when many societies were no longer nomadic and humans were already producers, farmers, builders, artists, artisans, and finally dyers. Color was already fully part of their daily lives, and yellow undoubtedly occupied an important place there. It was present in the minerals, plants, and animals that surrounded them, as well as on a great number of objects they used (made of stone, bone, clay, wood, hide, and wicker), not to mention fabrics and clothing henceforth dyed. It was also in the products they collected from their own agricultural activities. Beginning with grain, oil, honey, wax—all products for which yellow remains the symbolic color even today. In many languages, their names were used to construct part of the repertoire of adjectives designating that color.

In fact it was in the late Neolithic period and in the age of metals that the first lexical references to yellow are established in the West. The sun was no longer alone in that role, as demonstrated by various enduring expressions that appeared very early: "yellow as honey," "yellow as wax," "yellow as ripe wheat," "yellow as blond hair," "yellow as bile." The lemon, which is familiar to us as a referent, is not part of this list because it only arrived in Europe eons later. But gold finds a place there early on and gradually surpasses the sun as the principal referent for yellow.

The Varna Necropolis

Discovered in 1972, the vast necropolis in Varna (Bulgaria), with nearly three hundred tombs, revealed the most ancient gold objects ever found in Europe: jewelry, scepters, weapons, tools, belt buckles, plates bearing the images of animals. They can be dated to between 4600 and 4200 BCE and attest to the presence of various cults (solar, agrarian, funerary) on the shores of the Black Sea. Solid gold plate in the shape of a bull, c. 4600–4200 BCE. Sofia, Bulgaria, Natsionalen Istoritcheski Muzej.

artist.[10] Never again would the goldsmith be confused with the bronzesmith, much less with the blacksmith. This specialized work with gold seems to have begun very early, much earlier than was long believed. The oldest gold objects discovered to date were in a vast necropolis near Varna (Bulgaria) among significant funerary materials: rings, necklaces, bracelets, plates, objects in the form of animals, and others resembling penis sheaths. Recent analyses have dated some of these objects to between 4600 and 4200 BCE.[11] Perhaps this is the birthplace of the European goldsmith trade, on the shores of the Black Sea, or more widely in the lower Danube valley and the Balkans?

Did gold's prestige contribute early on to the enhanced value of the color yellow? In classical antiquity that is certainly the case. Earlier than that, it is difficult to say. But there are places where gold and yellow can be linked, as in Egypt, in the tombs of a few pharaohs where royal finery and votive objects in gold abound and where the walls of the sarcophagus room are painted yellow, perhaps to signify immortality or, more simply, to represent papyrus. Sometimes the sarcophagus itself is solid gold, as is the case

Ancient Gold Coins

Precisely identifying the distant origins of currency is a difficult exercise, so long and varied is the list of materials used as means of exchange before metal coins. Metal coins first appeared in Lydia (Asia Minor), then around the Aegean Sea in the seventh century BCE. Their use expanded rapidly throughout the Greek world. The earliest coins were first electrum (alloy of gold and silver), then gold, and then silver, with bronze only appearing later. *Left*: Gold stater of the Parissi, 1st century BCE. *Right*: Aureus of Tiberius struck in Lyon, 34 CE. Padua, Musei Civici agli Eremitani.

with Tutankhamen. Moreover, brilliant and incorruptible gold, extracted abundantly from mines in Nubia and the great eastern desert (between the Nile and the Red Sea) was considered to be the flesh of the sun and divinities issuing from it. That is undoubtedly the reason why in funerary paintings—clean and brilliant, to the point that they sometimes seem almost new—the bodies of gods and goddesses are often painted in vivid yellow, by means of orpiment (a natural arsenic sulfide), while those of humans present red or reddish-brown flesh for men and yellow or yellow-beige flesh for women.[12]

Although it is impossible to speak of the symbolism of color—it is too early—we are not prevented from assuming a link between gold and yellow or thinking that the prestige of the first reflects onto the second. Among the Egyptians and in much of the ancient Near and Middle East, gold, the divine metal that maintained close relations with the sun and was sometimes even considered to be the sun buried in the earth, was associated with ideas of light, heat, power, wealth, beauty, perfection, and immortality.[13] Is the same true for the color yellow? Perhaps, at least for the warm, vibrant, brilliant shades of the color. But it is impossible to prove this, especially since gold is not always looked upon favorably. It has its bad aspects as well, prompting covetousness, greed, theft, violence, war, injustice, and betrayal—all vices and crimes for which the Bible and mythologies provide much evidence.

Gold in Ancient Egyptian Tombs

There was an overabundance of gold in the tombs of the pharaohs: jewelry, necklaces, bracelets, pendants, pectorals, gold coins, vases, mirrors, sarcophagi, funeral masks, and furniture plated with gold, like this cedar cabinet entirely covered with gold, found in Tutankhamen's tomb.

A few mines were worked in the mountains located east of Luxor, but most Egyptian gold came from Nubia, Ethiopia, and southern Arabia.
Gold-plated cabinet from Tutankhamen's funeral chamber, c. 1330–1320 BCE. Cairo, Egyptian Museum.

Etruscan Mural Painting

The Monterozzi necropolis, located near Tarquinia in central Italy, shelters many thousands of tombs dug into the rock. About two hundred of them were decorated with mural paintings that constitute the most important evidence on Etruscan painting, which was strongly influenced by Greek painting. The yellow pigments were essentially ocher based. A few traces of orpiment and massicot (lead oxide) can also be found.
Tibia player, detail from a mural painting in the tomb of the Leopards, Tarquinia, Monterozzi necropolis, first half of the 5th century BCE.

MYTHOLOGIES OF GOLD

Golden Apples from the Garden of the Hesperides

The Hesperides were the nymphs of the Sunset, daughters of the giant Atlas. They lived in a marvelous garden, located in the far west of the known world, and their apple trees produced golden fruit belonging to the goddess Hera and guarded by a dragon with a hundred heads, believed to be invincible. The eleventh labor required of Heracles by Eurystheus, king of Argos, consisted of seizing those apples and delivering them to him. After many attempts, the hero succeeded in doing so, but when he presented the apples to Eurystheus, the king refused them. Heracles then offered them to the goddess Athena who had protected him in his quest. Athena wisely had the golden apples returned to the garden of the Hesperides. Hydria with red figures (*detail*), c. 420–400 BCE. London, The British Museum.

Leaving aside the Bible for a moment, let us see what ancient mythologies can teach us about gold, its various meanings, and its possible ties to the color yellow. Let us begin with Greek and Roman mythology, the richest in material, so abundant are the stories and legends that feature this precious metal.

The first thing we learn from them is that a hierarchy exists within the world of metals and that gold ranks highest: it is a perfect metal, impervious to time; it is the sign of power, wisdom, happiness, and prosperity. The best illustration of this is the myth of the golden age that distinguishes four periods in the history of the world: the golden age, the silver age, the bronze age, the iron age. This symbolic classification obviously bears no relationship to our modern technical system for naming the various phases of prehistory: the copper age, bronze age, iron age, and so on. Hesiod, writing in the seventh century BCE, is responsible for this myth of the four ages of the world. In his poem *Works and Days*, he explains that the history of humanity begins with four races succeeding one another, each evoked by a metal (gold, silver, bronze, iron). The first, the race of gold, lived in happiness and harmony, while the last, the race of iron, contemporary with Hesiod, had forgotten what justice, mercy, and morality were.[14]

Following Hesiod, many authors vied with one another to elaborate on this framework. Replacing "races" with "ages," they turned it into a trope that permitted them to celebrate the past, especially the very ancient past, and denounce the vices and woes of the present. The most expansive on this subject, those who provide the historian with the most details, are the Latin poets: Catullus, Virgil, Tibullus, Horace, and especially Ovid.[15] The golden age is the one of delights: humans living intimately with the gods, pure hearted and carefree, exempt from pain, weariness, and old age. Peace, love, and justice reign throughout; spring is eternal, war is unknown, and nature is kind. Berry bushes produce abundant, delicious fruit, and the

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wool on the backs of sheep comes dyed in vivid, varied colors, without any human intervention. The silver age begins when Zeus succeeds his father Chronos. This is the period when humans, who have annoyed Zeus, become mortal; they must work to fulfill their needs, live according to the rhythm of the seasons, confront heat, cold, and hunger. Then comes the bronze age. Henceforth humans are hard-hearted, they experience violence, make war, and must struggle against monsters and dangers of all kinds. Finally the iron age arrives, a horrifying time of endless war when vices reign supreme and humans no longer know anything but fear, suffering, and death.[16]

Without really understanding it, an anonymous author from the fifteenth century took up this myth of the four ages of the world and applied to it the correspondences that his period often established between colors and metals. This led him to perceive a yellow age, white age, red age, and black age.[17] Heraldry followed the same path in symbolizing everything by color and making the age of yellow the one of happiness and the age of black the one of misfortune. There is nothing comparable to be found among the ancient authors, and even though the Latin poets—Ovid in particular[18]—use the expression *aetas aurea* to characterize the age of gold, the adjective *aurea* really refers here to the metal, considered symbolically, rather than the color.

The myth of the four ages considers gold favorably and holds it in highest regard. Other myths and stories are more nuanced, for instance, the story of the golden apples in the garden of the Hesperides, which Heracles had to obtain as his eleventh labor. Having killed his wife and three sons in a fit of madness, the Greek hero found himself forced by the oracle of Delphi into strict obedience to his cousin Eurystheus, king of Argos, who envied and hated him. Eurystheus imposed on him twelve superhuman tasks, six in

of Ulysses], and so on), Jason embarked on his ship, the Argo ("the Swift"). After a long voyage, with numerous adventures and trials of all sorts, he finally reached Colchis, on the banks of the Phases river, known for containing gold. There he enlisted the help of the sorceress Medea who was in love with him and managed, through trickery, to claim the Golden Fleece. The return voyage was a true odyssey, comparable to the (later) one of Ulysses. In the end Jason was able to present the Golden Fleece to Pelias who, despite his promise, refused to cede the throne to him. The Golden Fleece ended up in a cauldron where Medea boiled it to perform some magical operation intended to lead to Pelias's death. The story of Jason and Medea continues, tumultuous and tragic, but there is never another word about the Golden Fleece. Once again, the quest was long and futile, as vain as any quest for so precious a material good, especially if it is a gold object belonging to a deity.[20]

The story of King Midas is different but leads to a similar conclusion: any mortal filled with greed who seeks to possess gold, huge quantities of gold, is severely punished sooner or later. Midas, the legendary king of Phrygia, one day saved the life of Silenus, the foster father of the god Dionysus who, in gratitude, promised to grant Midas his first wish. The king immediately asked for everything he touched to be changed into gold. This wish was granted, but very quickly proved lethal; everything Midas held in his hand was transformed into the precious metal, notably food and drink. He could no longer drink or eat, so that, on the point of death, he implored the god to rid him of this fatal power. Taking pity, Dionysus made Midas bathe in the Pactolus river which, like the Phases, flowed with flakes of gold henceforth. Thus the king was cured of his greed (but not of his stupidity, as other stories demonstrate).[21] In any case, this strange story seems to constitute the oldest evidence of a strong and enduring tie between envy or avarice and the color yellow. This link was already evident in ancient Rome, then frequently presented in images from the late Middle Ages, and still very much present in the art and literature of the early modern period. Envy, avarice, jealousy, and greed have long had close connections to the color yellow.

Greek mythology is not alone in discussing gold, adventurous quests for it, the dangers of possessing it, and the conflicts and crimes it spawns. Celtic, Slavic, Nordic, and Germanic mythologies do so as well.

Let us consider, for example, the last of these and look briefly at what we can learn from the Rhine gold legend, which did not become grafted to the legend of Siegfried and the Nibelungs until much later. Originally, the Nibelungs were dwarfs who lived in the mountains "in the fog country" (the proper noun *Nibelungen* means "those of the fog"). They possessed a fabulous treasure of precious metal and three magic objects: a sword that made one invincible, a cape that made one invisible, and a gold wand that replenished the treasure trove whenever objects were removed. The treasure had previously been stolen from the daughters of the Rhine, river nymphs who had taken vows of chastity to better protect their father's gold. Henceforth it was buried under a mountain and guarded by the dwarf Alberich and a ferocious dragon. Following a disagreement over how to divide the treasure, the two kings of the Nibelungs appealed to the young Siegfried, son of the king of Niederland, to arbitrate their quarrel and divide the treasure fairly. But Siegfried betrayed them; he killed them, seized the magic cape and sword, vanquished the dragon, bathed himself in the dragon's blood (which made his body invulnerable), stole the treasure, and forced Alberich to serve him. After numerous adventures, Siegfried married the fierce Kriemhild, sister of the Burgundian king, but he fell victim to Queen Brünhild's jealousy and the treachery of Hagen. The traitor Hagen killed him with a sword blow between the shoulder blades where a single linden leaf had kept the dragon's blood from penetrating. Kriemhild then took bloody vengeance, resulting not only in her own death and Brünhild's but also in the destruction of

Rhine Gold

In the fifth century, the Burgundians occupied a large area around the confluence of the Rhine and the Main; their capital was Worms. It was in that city that the *Song of the Nibelungs*, written in Middle High German about 1200, located the court of Gunther, king of the Burgundians and Siegfried's brother-in-law. Siegfried defeated the Nibelungs and seized their fabulous treasure, which they had stolen from the daughters of the Rhine. After much drama and bloody revenge, after the death of Siegfried and the annihilation of the Burgundian people, the treasure was finally returned to the Rhine and restored to its place at the bottom of the river where it would forever remain. Burgundian coins in gold, "Triens à la victoire," 7th century. Paris, Galerie Les Chevau légers.

the Burgundian people. The treasure was returned to the Rhine, to a location forever unknown.

This dense story with its vast number of episodes has been passed down to us in multiple versions, Nordic and Germanic. The most famous one, on which Richard Wagner would base his Tetralogy, is found in the *Song of the Nibelungs* (*Nibelungenlied*), an epic written in Middle High German at the very beginning of the thirteenth century. But many older versions exist, containing one part or another of the legend. Nevertheless, they all seem to be structured around a single theme: the theme of accursed gold.[22] Although this yellow metal may be the symbol of power, even of sovereignty, it becomes the object of many taboos that, if violated, always lead to great misfortune. Furthermore, it inspires jealousy, covetousness, greed, theft, war, and destruction—better to leave it where one finds it. In fact, after tragic confrontations and destruction on all sides, the treasure of the Nibelungs returned to its place of origin, in the depths of the Rhine, exactly like the golden apples stolen by Heracles that find their way back to the garden of the Hesperides.[23]

Gold in the Pactolus River

Having been granted by Dionysus the gift of transforming into gold everything he touched, King Midas was no longer able to drink or eat; food and liquid immediately solidified into the precious metal. Midas implored the god to take back his appalling gift. Dionysus took pity on him and commanded him to go wash in the waters of the Pactolus river. The king was freed from his torment, and the waters of the river began to flow with flakes of gold. Nicolas Poussin, *Midas Washing at the Source of the Pactolus*, 1627. Ajaccio, France, Palais Fesch, Musée des Beaux-Arts.

SUN WORSHIP

Artemis-Diane, Goddess of the Moon, the Hunt, and Wild Nature

Artemis (Diane for the Romans) was the twin sister of Apollo. Just as her brother was the god of solar light, she was the goddess of lunar light, among other things. Thus she was closely associated with two colors: white and yellow. In Greece, in many places of worship dedicated to her, the priestesses wore yellow. A virgin and wild in nature, she possessed many attributes like her brother did. One of them, the bow and arrow, can be seen here. Mural painting found in Villa Ariane on the Varano hillside near Stabiae, 1st century CE (?). Naples, Museo Archeologico Nazionale.

Viewed from the earth, the sun generally appears yellow, at least in good weather in the middle of the day. For astrophysicists however, its true color is white, because it is white light that the star sends toward the earth. This light is composed of different colored rays that the atmosphere filters, deflects, or reflects. Because they have the shortest wavelengths, violet and blue in particular are dispersed and more or less reflected from the solar spectrum when this white light crosses through the various layers of the atmosphere (which explains why the sky is blue when the sun is at its maximum intensity). The dominant color in the solar spectrum thus becomes yellow or yellow-orange when the sun is at its zenith, and yellowish red, pinkish red, or even red when it is rising or setting.

Obviously these are modern scientific explanations, unknown to ancient societies. Nevertheless, although ancient societies may not have always represented the sky as blue—far from it, in fact—they seem to have usually seen the sun as yellow. Thus a link between this color and light was established very early. Yellow is luminous, radiant, and dazzling. It is also hot because the sun emits heat and warmth. For this reason, early on, yellow appeared as a beneficial color and remained so for centuries. It was not until well into the Middle Ages, as we will see, that the negative aspects of yellow would overtake its positive values.

Let us pause for a moment to consider the ancient sun. King of the stars, source of heat, light, and fertility, enemy of darkness and the forces of Evil, it was deified very early, giving rise to various cults in the Old and New Worlds. They were not all as bloody as in the case of the Aztecs, who offered human sacrifices to the sun for fear that it might stop in its course, lose its energy, and cease to rise each morning. But many societies saw it as the basis of all life, the ancestor of their gods, and sometimes of their kings or their people. For the Egyptians, for example, Ra, the most ancient sun god, who made his journey each day by boat, was considered the creator of the universe and the father of the first