IX. Inquiries into the encaustic painting of the ancients

M. Chaptal

To cite this article: M. Chaptal (1815) IX. Inquiries into the encaustic painting of the ancients , Philosophical Magazine Series 1, 46:207, 21-27, DOI: [10.1080/14786441508638488](https://doi.org/10.1080/14786441508638488)

To link to this article: <http://dx.doi.org/10.1080/14786441508638488>

Published online: 27 Jul 2009.

Submit your article to this journal [↗](#)

Article views: 2

View related articles [↗](#)

by wine-merchants in their white wines, also in clarifying coffee, making jellies and creams; and lastly, it may be used instead of isinglass on all occasions.

2d. The gelatine simply dried and cut in pieces, contains a great quantity of nourishment in a very small compass; it may be rendered useful to make soup for sailors during long voyages, for soldiers in besieged towns, and even in camps and barracks.

3d. If made into cakes with a certain quantity of gravy and roots, it will make an excellent dish both for the naval and military officers. M. D'Arcet has shown us some specimens of this preparation, which surpass in beauty and quality all that we have hitherto seen of this kind.

4th and lastly. It can be employed to make glue with more advantage than any other substance that has been used for the purpose; the operation will be much shortened by it, and the glue infinitely better. The tenacity of the latter, according to some experiments made by Messrs. Cadet, Gassicourt, and Jecker, opticians, is to the best Paris glue as 4 to 3, a quality extremely valuable to joiners, cabinet-makers, &c. and especially to paper-makers, who frequently fail in their operations for want of good glue.

It is but justice to add, that M. D'Arcet, by applying to domestic œconomy a known principle in chemistry, has rendered a real service to humanity; since he has demonstrated the utility, for a number of purposes, of a matter which has hitherto been almost entirely lost.

IX. *Inquiries into the encaustic Painting of the Ancients.*

By M. CHAPTAL*.

PLINY distinguishes colours as *colores austeri* and *colores flaridi*, i. e. colours of a low value, and brilliant and clear colours: he adds that the latter were furnished to the painter by the person who made them; and he places in this class *minium*, *armenium*, *chrysocolle*, *indicum*, and *purpurissum*. The ochres, ceruse, sandarake, and black, are of the former description.

Sinapis was a red earth with which minium was sophisticated.

Melinum, according to the characters indicated by Pliny, appears to us to have been a white clay. Nevertheless the ancients also employed in their fresco paintings the paste of lime, as I have ascertained by analysing some colours used by the ancients. These whites produced by lime have been preserved without alteration. The *melinum* was brought from Melos and Samos; but the latter was too fat, and the painters made but little use of it.

* *Annales de Chimie*, tome xciii. p. 298.

The ancients also distinguished two kinds of ceruse. That which Pliny called *cerussa cremata* or *usta*, seems to me to be only burnt ochre slaked in vinegar. It was used for painting shadows. The other kind of ceruse, which the Greeks called *psynmythium*, and the Latins *cerussa*, was obtained by the action of vinegar on lead. The ladies used it for the skin; the painters used it also: but Pliny places it in the third rank only among the white colours.

The black colour or *utramentum* of the ancient painters was successively the ivory-black of Apelles, the soot-black produced by the combustion of the resins, the charcoal of wood, and China ink. In order to make writing-ink, gum was added, and a fat substance (*glutinum*) in order to paint on the walls.

The *purpurissum* held the first rank among the fine colours. It was a lake which was prepared by absorbing the decoction of madder by means of the earth which Pliny calls *creta argentaria*. I presume that this earth, which was brought from England, far from being chalk, was a very white clay, because the chalk would give a vinous lake, and the argil, on the contrary, one of a very fine red. The best *purpurissum* is obtained from the first decoction: by increasing the quantity of water, the qualities were of course varied.

The ancients formed *purpurissum* also by collecting the froth which is formed on the solutions or decoctions of purple.

The *armenium* was a blue stone, which was long brought from Armenia; but a sand was found in Spain, which rendered this colour more plentiful and cheaper.

The green earths were also employed as a colouring principle.

Pliny observed that all the *chefs d'œuvre* of the ancient painters were composed with four colours; 1st. The white reduced to *melinum* alone; 2d. Ochre; 3d. The red earth or *Pontic sinopis*; 4th. The black *atramentum*.—It was, as he says, with those four colours that Apelles, Melanthus, Nicomachus, composed their *chefs d'œuvre*: “and, now-a-days,” he adds, “that the purple covers our walls, and that India sends us the coloured slime of her rivers, we have more paint and less of true art.”

Hence we find that the ancients employed almost none but natural colours in painting, and these were unalterable in air and water, and as we shall presently show, capable of being preserved without alteration and without degradation. But how does it happen that these very colours, most of which are used in modern paintings, change their hue on our canvass? Wherefore are our paintings incapable of preserving their colour even for a few years, while the pictures of the ancients have not lost their lustre after many centuries? This question, which is very important to the arts, deserves great attention; and I think that

that its solution can be found only in the different ways of painting practised by the ancients and moderns.

Pliny informs us that there still existed in his day, in a temple of Ardea, a town of Latium, paintings more ancient than the city of Rome; and he expresses his astonishment that the colours had preserved all their freshness, although they were exposed to the air. Some verses underneath these paintings announced that they were the work of one Ludius, a painter of Etolia. He also mentions some works of the same painter, such as an Atalanta and a Helen, which were to be seen at *Lanuvium*, and which were also in good preservation, although in the ruins of a temple. The same author also speaks of still more ancient paintings which were to be seen at *Ceré*, a city of Etruria.

We find, to our admiration, on the wrappings of some Egyptian mummies, and on the monuments of this ancient country of the arts, colours which have not lost much of their lustre. I have seen fragments of ancient paintings brought from Volsena, the ancient capital of the Etruscans; and also from the baths of Titus:—these were in admirable preservation, and they are composed of coloured earths only.

It remains to inquire, therefore, what was the method used by the ancients in painting, and to compare it with our present processes, before we can decide on the causes of the inalterability of the ancient paintings, and on those of the degradation of modern paintings.

Vossius informs us that the ancients formed the priming of their pictures with a coat of wax, and that this wax was coloured according to the subject which they wished to treat: he adds, that after having applied this coating of wax, they heated it and spread it. The painters, as Varro informs us, kept their coloured wax in boxes with compartments.

Vitruvius describes a process little different from that which we have described. He says that the coating was formed with melted wax, softened with a little oil, and applied with a pencil; it was afterwards made to penetrate the wall by means of a stove heated with charcoal, and with cloths a polish was given to it, as is practised with marble figures; vessels were also coated by this process.

Pliny speaks of a third modification on this method: it consists in melting wax and applying it with a pencil. These various processes were employed for painting walls, wood, &c.

Athenæus describes a festival of Ptolemy Philadelphus, in which were carried twenty amphoræ of gold, fifty of silver, and 300 others, which were painted in wax of various colours, "*trecentas vero omnis generis ceræ coloribus pictas.*"

24 *Inquiries into the encaustic Painting of the Ancients.*

Wax, therefore, was the vehicle of the colours of the ancients. The drying oils supplied its place, four centuries ago; and it is to John of Bruges that this discovery has been referred, which has been since generally adopted. Now that we know its merits and defects, we must be permitted a few reflections on its just value.

The drying oils may of course be mixed with great facility with colours, forming with them a very manageable article: the finest and most delicate tints may thus be given: the painting in oil dries quickly, and the work of the artist is never thereby suspended; but on the other hand, the drying oils become yellow when they come in contact with the air, and spoil the purest colours; the white becomes yellow; the blues, with the exception of ultra-marine which is almost indestructible, become green; the tints hold out irregularly, the transparent tints are obliterated by age. The coats of paint superposed, act in a different way; speedily there is no more harmony in the tones, in the shadings, nor among the various parts. The oil which is dried, progressively and constantly becomes resinous, cracks, scales off, and falls from the canvass in consequence of shrinking. All these defects are inseparable from the use of drying oils; and if the works of some schools have partly escaped these alterations, it is to the use of a small number of inalterable colours that we owe their preservation. Most of the fine pictures of our museums now exhibit nothing to our admiration but correctness of drawing, fine harmony of composition, character and expression in the figures; for the painting, properly speaking, no longer exists, and the authors of some of these fine works would not know their own pictures, if they saw them at present.

We must therefore adopt some other method of painting, if we are animated with the noble ambition of working for posterity; and we shall hazard a few observations on the use of wax, as a method of preparing canvass, and afterwards serving as a vehicle for colours.

The ancients prepared the base of their pictures with a coating of coloured or colourless wax, which they made even by applying heat to it: they afterwards painted over it: "*Item muris obducebant ceræ lorica, in eaque pingebant,*" says Vossius. It appears that they sometimes used oil to soften the wax; which was attended with the inconvenience of making the latter run when a warm body was brought close to it, with a view to unite and polish the coat. Thus Vitruvius, in speaking of this process, makes use of the words *sudare cogat*; which proves that the oil is detached, and forms an obstacle to the junction of the wax; an inconvenience which I have experienced on re-

peating

peating the process. Besides, this mixture of wax and oil retains a softness and glossiness too long, which does not admit of the celerity which is wanted in these kinds of works. Pliny says that the wax may be melted by means of heat, and applied with a pencil: but as it hardens in the air with great facility, it will be difficult to form in this way a very compact coating.

We must therefore invent another method of making wax manageable by the pencil, and which shall procure a prompt desiccation, without taking from its whiteness or consistence. We may find this desideratum, I think, in the employment of the volatile oils, or the colourless essences. It is sufficient in order to melt the wax in a volatile oil to employ it in stripes, as it is when bleached, and to sprinkle it after that with some drops of oil. A slight heat is then sufficient to operate the solution; and we thus obtain a very transparent liquid:—the same result is obtained with a fixed oil. The fixed oils well purified, or the colourless volatile oils, ought to be employed in this operation. This combination may be applied to canvass, wood, or marble, in the liquid state: it then adheres strongly to those bodies, because it penetrates them, and forms on their surface a white and slightly transparent coating. But the solution of the wax in the volatile oil is preferable, because, in addition to its being whiter, a heat of 20 or 25 degrees is sufficient to evaporate the oil, and give more consistence to the coating. Care must at the same be taken not to heat too strongly, lest the wax itself should be evaporated. We may also prime canvass intended for paintings in the following way:—

When the combination of volatile oil and of wax is fixed, it forms a soft paste which may be easily spread over canvass, wood, and marble. By means of a polished hot iron, the wax is made to penetrate these various substances. The heat then evaporates the volatile oil, and a coating of wax only remains. By priming canvass in this way we may cover both surfaces, and thus place them out of the reach of air and humidity, which will render their duration almost eternal.

If it be only wanted to apply one colour upon a base, and to produce what the ancients called a *monochrome* painting, it is sufficient to mix the colour which we wish to use, with the liquid combination of oil and wax, and to stir until the mixture is hardened. We should then apply the paste to the surface of the body upon which we wish to paint, and make it penetrate by means of an iron slightly heated. Some drops of olive oil spread over the surface will facilitate the operation of polishing which it is important to give to the coat of painting: this slight coat of oil will be afterwards removed by means of a piece of leather or fine linen. By this process the polish of the marble statues

statues of the ancients, or of our modern stucco, is given to the painting.

If it is desired to paint in several colours (which truly constitutes painting), wax can be coloured, and all the different tones requisite can be given to it. But this employ becomes still more difficult, because these waxes can only be applied with a pencil: it is therefore necessary to keep them in a soft state approaching to fluidity, where there is the advantage of artificial heat, or the maintenance of a temperature kept up sufficiently in the workshop. It would be possible, however, by varying the proportions of the oil, to obtain coloured pastes which might be touched and retouched by the pencil, at the ordinary temperature of the atmosphere; only the drying up would then be very slow, and I think that the wax, being brought to a permanent state of fluidity by means of several drops of alkali poured on the melted wax, would form a preferable mixture, because the wax still remains liquid, and as white as milk. It is easy to incorporate on the palette the colours with this milk of wax (*lait de cire*); it gives them a suitable consistency, and they are used with a pencil like those which are prepared with drying oil. M. Bachelier, who suggested this vehicle for colours nearly forty years ago, composed in this way pictures which have not sensibly suffered in point of colouring.

M. Castellan lately communicated to the Institute a new method of painting, which strongly resembles that of the ancients: he begins by priming his base with a coat of melted wax, taking care previously to heat and dry the stucco and plaster: he spreads the wax with a brush, equalizes the surface by passing a gilder's stove over it, or the hot disk which the ancients used; pieces of new cloth and coarse brushes passed over this surface terminate the work of priming. All the modifications requisite for the priming of wood, plaster, and canvass, are detailed in M. Castellan's memoir. He paints on those primings with colours ground with olive oil and not drying oil. The painting is dried by passing the stove over the picture, or by raising the temperature of the workshop to 30° or 40° of heat; or lastly, by exposing the picture to the sun. Painting on canvass requires for its desiccation a heat of 20° or 30° only. M. Castellan glazes his pictures with a transparent varnish which is made by the solution of wax in a colourless volatile oil.

Several paintings executed by this process have been exposed for several years to all the inclemencies of the air, without being sensibly altered. Even the English lake, which fades so quickly in the sun, has not lost any of its intenseness of colour.

The process proposed by M. Castellan appears to possess the following advantages.

1. It

1. It incorporates, by means of heat, the painting with the base and priming, in such a way that we have only one single body; whereas in painting with drying oil, the coats of priming and of painting are not melted together, but superposed on each other. We may be convinced of this by observing closely the operations resorted to in giving a fresh canvass to an old painting: every coat of paint is found to be distinct, and adheres more, or less closely, according to its thickness and the principles of which it is composed. The picture soon undergoes a great alteration by this process.

2. In the substance which serves for priming, or preparing the base, as well as in the vehicles for the colours or the varnishing, there is nothing capable of shrinking in course of time, or from progressive desiccation; so that the painting can neither warp nor crack, nor fall off in scales.

3. The colours being melted in the wax and covered with a coating of the same substance, are completely out of the reach of air and *humidity*, which are the most powerful destroyers of paintings.

M. Castellan's process for painting has this advantage over every other hitherto practised for imitating the encaustic painting of the ancients; namely, it does not overturn the customs which obtain in all modern schools for painting: there is in painting a merit so intimately connected with the mode of execution, that a sudden change in this would be repugnant to every painter, whose ideas are more intimately connected than is generally supposed with the mode of expressing them. Several landscapes which have been painted by M. Castellan, and two large portraits by M. Taunay, exhibit no difference from common oil paintings: we perceive in them the same freedom of penciling, the same boldness of touch, clean execution, lightness of colouring, and the same transparency of tone.

X. Process for Curing Herrings in the Dutch Manner. By Mr. H. E. SIEVERS, of Lower Thames Street.*

SIR,—As a candidate for the Society's gold medal of the year 1814, I beg leave to present two samples of British herrings, cured in all respects after the manner of the Dutch. Those marked *A* having been caught and cured on the coast of Shet-

* From the *Transactions of the Society for the Encouragement of Arts, Manufactures and Commerce*, vol. xxxii. for 1814.—The gold Isis medal of the Society was voted to Mr. Sievers, for herrings caught in the British seas and cured in the Dutch manner.