1980

Encaustic Painting Revisited

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ROCHESTER INSTITUTE OF TECHNOLOGY

A Thesis Submitted to the Faculty of
The College of Fine and Applied Arts
in Candidacy for the Degree of

MASTER OF FINE ARTS

ENCAUSTIC PAINTING REVISITED

By

Miriam Sellers Lapham

Date: April 30, 1980
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Date: May 21, 1980
APPROVALS

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PREFACE

An artist working with traditional materials will use them in accepted ways or, through experimentation, will discover new methods. With perception these new methods may be brought to unique and innovative statement.

This paper provides a short history of the ancient technique of painting known as encaustic; it contains a brief summary of certain contemporary artists' uses of encaustic; and, finally, it gives this writer's own contribution of a new concept for painting with encaustic. When the artist utilizes a more intensive burning-in of the colors, it is possible for encaustic to project a totally unique and independent image among the fine art techniques.
ACKNOWLEDGEMENTS

I wish to acknowledge the gracious assistance given to me in this writing by my Thesis Committee, Dr. Sarah Collins, Prof. Franklyn K. Schwaneflugel and Prof. Fred Meyer.

To Mr. Meyer, my studio painting professor for the three years of this graduate study, must go additional and very special gratitude for his patient and understanding counsel, his constant encouragement and his perceptive and ever-refining artistic guidance.
Encaustic painting is that method of painting which attaches color to a surface through the use of waxes, resins, pigment and heat. The word encaustic comes from the Latin *encausticus* and the Greek *encaustikos*, each meaning "to burn in"¹ and may be used as an adjective or as a noun.

All methods of painting with wax are not encaustic. If heat is not used at some time in the process, if the wax is never heated, then the term encaustic is a misnomer. Cold-wax painting techniques--saponified wax, emulsions, soaps, pastes, solutions--have been used since antiquity.²

The history of encaustic pre-dates the concept of its use as painting, with the supposed first use referring to the firing or burning-in of seals and signatures onto clay tablets. The Romans had an "encaustic tile" for lining their more important baths--plain tile decorated with colored clays inlaid, burned-in or fired.

The ancient Egyptians were known to have made extensive use of waxes and resins for mummification and for forcing pigment into incised design on stone. All manner of objects were weatherproofed with wax-
resin coatings and the first mosaics came into being when bits of glass and stone and metal were embedded in this sticky substance.

The practices of toning down the glare on polished marble, *ganosis*, and of filling in fissures with wax led to the application of color, *polychrome*, bits of which may still be found on statuary of antiquity.

The work itself, of varnishing and polishing Greek statues, was termed *kausis*, and the workers were *encaustai*. By early Christian times, the word *encaustic* was used to imply mosaic, illuminating, calligraphy and all types of painting. By the Medieval period, ordinary writing materials were called *incaustum*, which became in Italian *inchiostro*, and later in English, *ink*.

It is known that Roman ships were caulked or treated with a form of hot wax--tar, mixed with pigment and beeswax--but at what point all of these ingredients: wax, resin, pigment and heat, came together to be a deliberate painting technique--a binding of color to a prepared picture ground, wall or panel--is not really known.

The writings of Pliny the Elder and of Vitruvius are the two earliest sources to describe the use of wax as a painting medium but as neither was a painter, their descriptions are academic and lacking in information concerning techniques of application. Pliny
however, does describe three distinctly different variations within the technique: 1. Applying the wax medium to walls or panels—apparently wax, resin and pigment—with heat and heated tools, the *cauteria*. 2. Wax colors dissolved in naphtha by heat and applied while warm. 3. Engraving on ivory with a sharp metal tool, the *cestrum*, and filling in the lines with heated wax colors. He indicates that encaustic painting was an integral part of his times, and tells of the enduring beauty of such paintings.⁴

Pratt and Fizel report that Julius Caesar, who died in 448 B.C., staggered his compatriots when he paid the great sum of 80 talents⁵ for an encaustic painting by the artist, Timomakos, for use as a temple offering. He later purchased for an equally large sum, a second picture, one only half finished, to be used for the same purpose.⁶ These two paintings have not survived, nor have any wall paintings of this period, though the analyses of samples taken from remnants of stucco painting of Bal-al-Melook at Thebes have revealed that resin was added to a wax-pigment mixture for painting on walls.

The earliest surviving examples of encaustic painting on panels are the lifelike Fayum (Faiyum or Fayyum)⁷ portraits which were the Hellenistic Greco-Egyptian colonists' adaptations of the effigy masks the Egyptians had been accustomed for centuries to
attach to their mummified dead. These paintings—which attest to a particularly advanced artistic conception of portraiture—are remarkably well-preserved for both color and texture. Microchemical analyses have established that a mixture of wax and naphtha was the medium used, and surface visual qualities tell us that some sort of small spatula was the painting and/or reheating tool.

It is indeed the tools which are the primary sources of information about how the encaustic artist must have worked. Instruments for hot wax painting have been uncovered at Herculaneum, Stabia, Campana, and Boscoreale, villages near Pompeii which were buried by the eruptions of Vesuvius.

In 1849, near St. Médard-des-Prêts, France, a grave—of a Roman woman artist of the fourth or fifth century A.D.—was found to contain materials and equipment which were beyond all doubt designed for encaustic painting. "There were the reedbrushes; the bronze cauteria, long, slender, spoon-shaped at one end, flattened at the other for melting and modeling the wax. There was a bronze box, topped with a grid of silver—the thabdion—which could contain glowing coals, supplying the heat for inustion. There were pots of pigments, and finely wrought jars containing pure beeswax or mixtures of wax and resin. There was an alabaster mortar and a pestle, the latter in
the shape of a bent thumb." With such equipment the
encaustic painter could grind the colors, add them to
the heated wax-resin, applying the colored mixture to
the wall or panel and burn in, or infuse, the finished
picture—all the steps necessary to the technique.

In Hellenistic times, the Greeks took the wax
medium to Russia as they had to Egypt, and from the
effigy-painting tradition evolved the painting of
icons, or images, of the saints as objects of venera-
tion. The beautifully deliniated dark eyes and the
heavy brows which are the hallmark of the Byzantine
icon figures, are most certainly directly related to
the same features in the Fayum portraits.

From the middle ages onward, as the less compli-
cated painting techniques of egg tempera, and later
oil, gained favor with artists, encaustic slipped out
of use. It was not until the first half of the
eighteenth century that a certain revival got under-
way to rediscover the secrets of painting with encaustic.

By way of accident, a ball of wax got into the
turpentine of a French painter, Jean Jacques Bachelier
(1724-1805), who began experimenting with his new-
found "heavy" turpentine. A few years later when the
Count de Caylus professed that he had discovered the
technique of wax painting, the ensuing controversy
revived interest in the writings of Pliny on ancient
uses of encaustic and a new era had begun.
SOME TWENTIETH CENTURY ENCAUSTIC PAINTERS

With such an illustrious ancient history, it would seem that, by the twentieth century, encaustic painting would be a well-recognized and widely-used way of fine art. The actual state of affairs is just the opposite. Most people have never heard of encaustic painting, a few artists would be able to define it, but only a handful of those might actually have attempted to work in it. Perhaps that is because there are so many possible ingredients which might be combined in such a variety of ways, to achieve any number of several results, that artists have given up encaustic before even trying it.

Writings on the technique are difficult to find. History of art and painting technique texts will include encaustic but almost always as a desultory aside. Books which deal realistically with the methods of encaustic painting are very few. This writer found the most informed and useful sources for an aspiring encaustic painter to be *Wax As Art Form* by Thelma R. Newman and *Encaustic Materials and Methods* by Frances Pratt and Becca Fizel.

Following a splendid treatise on the history of encaustic, Pratt and Fizel give a compilation of writings on—or by—thirty encaustic painters, twenty
of whom were working in America in 1949 when the book was published. Each of the twenty contributing artists describes his--or her--encaustic formulae and gives information about how the mixtures are applied and reheated. Since it is up to every encaustic painter to compound the paints with which he will work (one cannot just go out and purchase anything "ready made" for encaustic painting), such a wide selection of examples and explanations is invaluable. Of these twenty working artists, Karl Zerbe stands out as the most publicized.

In the twenties the Mexican painter Diego Rivera had used encaustic for painting his great murals, but little was explained about his working methods beyond the fact that a blow torch was used to keep the sheet-iron palette warm and to fuse the brushed-on colors.¹² Zerbe, on the other hand, as Head of Painting at the Boston Museum School, sparked a veritable renaissance in the technique, and inspired a generation of teachers.

Zerbe developed practical studio equipment; the electric palette for keeping the wax mixture warm, and a contrivance of heat lamps mounted on a track for controlled spacing above the surface of the painting for burning in the colors. He also advanced the use of hand torches and diathermic heat lamps for spot heating.
From the many possible combinations of materials, Zerbe grouped two formulae:

1. Wax-oil
   9 parts bleached beeswax
   1 part sun-thickened linseed oil

2. Wax-resin
   8 parts bleached beeswax
   1 part damar
   1 part Venice turpentine or Canadian Balsam

Zerbe's own painting style was "marked by the straightforward approach of one in complete command of his medium. The results were controlled, producing a subdued luminosity--flowing rather than flashing. [Harlequin] in the Whitney Museum Collection, New York, has subjugated textures achieved through light scumbling in black." 13

In 1949, after only ten years of working with encaustic, some mysterious allergy associated with the materials forced Zerbe to surrender his favorite medium. Fortunately a new plastic technique was coming into existence; one of his own students had explored and developed acrylics: 14

David Aronson, a pupil of Zerbe's, carried his teacher's technique further by perfecting a system of putting layers of glazes over otherwise completed wax encaustic paintings and then scraping back to reveal the many colors. The glazes were made by adding tube colors to a medium of:

1 part damar varnish
1 part sun-thickened linseed oil
8 parts unbleached beeswax.
Though Aronson's encaustic painting style was unique, sensitive and rich in consummate skill\textsuperscript{15}, his artistic expression of recent years has evolved into sculpture.

The most prolific painter to be working in encaustic today is Jasper Johns, the painter of American flags\textsuperscript{16}, targets, Arabic numerals, and flagstone patterns. Johns' explanation of his first use of encaustic is:

"It was very simple. I wanted to show what had gone before in a picture, and what was done after. But if you put on a heavy brushstroke in paint, and then another stroke, the second stroke smears the first unless the paint is dry. And paint takes too long to dry. I didn't know what to do. Then someone suggested wax. It worked very well; as soon as the wax was cool I could put on another stroke and it would not alter the first."\textsuperscript{17}

The surface appearance of a Johns painting is one of immediacy—of brushed, daubed and dripped colored wax. He uses wax added to tube oil paints with collage of paper and newspaper stuck under or in the painting. Burning-in stops short of losing brush or knife marks in the paint, and short of incineration of the newspaper. The final appearance—the total effect of the paintings therefore—is comparable to very loosely put on impasto oil or acrylic painting.
INGREDIENTS FOR ENCAUSTIC PAINTING

In this study, concurrent with studio experimentation in encaustic painting, initial investigation into the three basic ingredients of the encaustic medium--wax, resin and pigment--has been carried out, as some understanding of each of them is relevant and practical for the artist.

The study was augmented—or one might say, embellished—by a delightful excursion into a reading on fire, The Psychoanalysis of Fire by Gaston Bachelard, which lent poetic insight for dealing with that fourth ingredient of encaustic, heat.

WAX

Wax, chemically, is a mixture of esters, cerotic acid, and hydrocarbons. Wax, practically, as described by Thelma Newman, "is a block of almost colorless material. . . . Scratches can easily be made into its face, and yet it has been widely used to protect the surface of treasured objects. It can have its own shape, be an end in itself, or it may flawlessly duplicate the form of something other than itself. Some examples of wax have lasted for thousands of years; at other times it has been and is used as a temporary material."
Some properties of wax appear contradictory; it is liquid or solid, malleable or brittle, shaped or shapeless: it can hold in pigment and appear colored, or it can serve as a resist to dyes. It is moisture resistant, mildew and fungus resistant and is unappetizing to insects. It is neutral in color, chemically inert, inexpensive, plentiful, non-toxic, and acid resistant. The list could go on and on, for wax is truly a magical material.

A very special optical experience is enjoyed by the viewer of encaustic paintings, specifically because wax is the main ingredient of the medium. "One of the most entrancing qualities of wax is that it is almost transparent, unless opaque pigments are used. Instead of light being immediately reflected from the painting surface, it penetrates into the material and then is transmitted back to our eyes. This gives a luminosity, a freshness that no other traditional art material has. Yet it is not obvious to us that wax as a paint vehicle is doing this. There is a kind of disembodiment here."21

Even though an encaustic painting is "dry", or finished, as soon as the burning-in process cools, a wax painting needs a hardening or curing time, just as an oil painting does. The belief that wax will melt off or distort when the weather is hot, does not hold up under history's evidence. When it is applied
thinly on a firm ground, and some care is taken to avoid subjecting it to too-abrupt temperature changes, wax is a stable vehicle for carrying the other ingredients; resin and pigment.

RESINS

Resins, including gums and balsams, are the hard saps exuded from certain trees. They are amorphous, fusible, flammable natural organic substances that are usually transparent or translucent. They are sticky and adhesive in the liquid state but form a hard film when dried. It is for these three qualities that resins are used as a part of the encaustic medium.

As with other fine art techniques which must use varnish, damar is preferred above other types of resins because it contains little or no coloring matter and because it has the least tendency for darkening with age. Obtainable in crystal form, damar resin can be melted into the hot wax in a double boiler.

PIGMENTS

Pigments are the color elements of painting. "A pigment is a finely divided, colored substance which imparts its color effect to another material either when mixed intimately with it or when applied over its surface in a thin layer." Such is the beginning definition of pigment from the artist's point of view.

The physicist says the same thing a little differently: The color in paint is composed of pigments--
finely divided solid particles that produce their characteristic colors by the processes of selective absorption (or selective transmission) of the illuminating light. 25

Psychology offers, "What is color? Color is pleasing to the eye, it creates a mood. We see it, the information picked up by our eyes is transmitted to our brain, which does the evaluation. In other words, color induces a psychophysical reaction inside us. That is the nature of color." 26

And just so, did Pandora open the box.

An artist recognizes, enjoys and must use as many different colors as his palette requires. If he is using ready-made artists' colors, his problems need not go much further than the matching of the mixture to his own concept of what that color ought to look like, and then finding out if the color is transparent, opaque or something in between. But if, as the encaustic painter, he is using raw pigment for his color, then his concerns are increased to include many additional questions: What is the pigment particle size, shape, weight, inner structure; what is its surface wettability 27 in the wax? These and other such questions need not be totally answered from the scientists' point of view, but they ought to be confronted, roughly understood and thoughtfully considered as each batch of colored wax carries its own problems. To name a few;
(1) Some pigment particles settle out, when the wax becomes liquid with heating, because they are inordinately heavy. (2) The color remains weak—in the face of additional amounts of pigment—because the particle surfaces and the medium cannot match refraction indexes without aid of a solvent or increased temperature, or both. (3) The color changes because the pigment reacts to heat with a chemical change or is simply easily burned. (4) The underpainting is concealed because the optical properties of the pigment—that contribute to its transparency—cannot function out of poor distribution.

For all this, color (i.e. pigment) is the alpha and omega of painting. To view an array of pure pigment samples is to experience beauty in one of its most direct forms. The encaustic painter holds a trust with all the pigments; it is his privilege and duty to see that their beauty is not diminished by his work.

**HEAT**

Heat is the last of the four encaustic ingredients to be considered. The definition of heat which applies to encaustic is: "added energy that causes substances to rise in temperature, fuse, evaporate, expand, or undergo any of various other related changes, that flows to a body by contact with or radiation from bodies at higher temperatures."
The historical writings on encaustic tell us that heat was applied to set the colors by way of warmed tools, by the placing of the panel near to the heat source, or by the bringing of a carrier of hot coals near to the painted object or wall. In ancient—or modern—encaustic paintings, one can identify markings made by warmed tools or recognize dripped and melted wax, but for the most part the surfaces are not unique among other painting surfaces; they do not cry out clearly, "Heat was used here!" 29

For many years it has been the concern of this writer that, after more than twenty centuries, encaustic continues to be considered a "lost" painting technique or, when used, always "looks like" some other medium. One has only to burn in encaustic colors a few times—to see a glob of dull, lifeless matt wax be transformed into a film of gleaming, vibrant, full color—to have the feeling that, as encaustic painting is currently practiced, something is bound up, some energy is innately contained in encaustic that has never been fully released.

Perhaps artists must look one step further beyond the obvious problems of sticking color to a surface and recognize that encaustic contains a basic confrontation between the materials and heat. By moving from all other heat sources to flame heat—made by a
BernzOmatic hand torch fitted with a specially fabricated spreader--this writer brings the encaustic material to a completely liquid melt. Such a maneuver creates situations which demand extremely alert and versatile technical control over both the torch and the material; situations which provide the exciting environment for the painter to discover innovative artistic statement.

If heat is the ingredient which has never been allowed to show, to speak out from the face of encaustic painting, then the time has come that it be permitted to do so. And if heat is to be the issue, let it be the ultimate heat, fire itself.

The challenge is made, weapons will be no less than hand torches and the book of rules will be *The Psychoanalysis of Fire* by Gaston Bachelard:

> Let us consider now the region in which fire is thought to be pure. This region, it seems, is at the extreme limit, at the point of flame, where color gives way to an almost invisible vibration. Then fire is dematerialized; it loses its reality; it becomes pure spirit.

> "Each thing is merely the limit of the flame to which it owes its existence." - Rodin

> ... fire is the objective phenomenon of an inner rage, of a hand which has become irritable. It is thus quite noteworthy that we always come upon an exceptional psychological condition that is strongly tinged with affectivity at the origin of an objective discovery.
At all times and in all fields the explanation by fire is a rich explanation.
STATEMENT

This paper is submitted in conjunction with a set of seven paintings which illustrate the author's thesis that it is possible, through the artist's utilization of a new concept of more intensive burning-in of the colors, for encaustic to project a totally unique and independent image among the fine art techniques.
NOTES AND REFERENCES

1 Burning-in is the application of heat for fusing the wax mixture to the ground.


5 $350,000 by 1949 monetary standards.


7 Fayum is a region of northern Egypt, west of the Nile, which is rich in archaeological remains. In the 19th century scientists from Europe and America converged on the district to uncover scores of burial sites which yielded the encaustic portrait panels.

8 Pratt, *Encaustic*, p. 12


10 An easily obtainable volume, with an excellent bibliography, which deals with the whole field of wax as material.

11 Lear Publishers no longer exists and the only copy of this tiny, out-of-print rare book that this writer has been able to locate is a single photostatic copy in the Fine Arts Division of the Rochester Public Library, Rochester, New York.

12 Newman, *Wax As Art Form*, p. 49.

13 Frederick W. Wight, essayist, Karl Zerbe (Boston: Institute of Contemporary Art, 195-), p. 34.


15 Aronson would dare to spray an area of a painting with turpentine and then set it aflame to burn in the colors.
16 Not always in red, white and blue.


19 Beeswax is the basic wax for encaustic. Other waxes which might be used with the beeswax are secondary or substitute.

20 Newman, Wax As Art Form, p. 11.

21 Ibid, p. 82 and 83.

22 We are not concerned here with the ever-growing number of man-made compounds which have resinous properties.

23 Varnish is simply resin dissolved in turpentine.


26 Dr. Victor A. Babits, "What Is Color?" Photographic Applications in Science, Technology and Medicine, 6 (May 1971): 30-42.

27 Wettability in this sense is the degree to which moisture or other contaminating materials are displaced -- or pigment particles which may have become agglomerated are broken down -- so that the constituent particles may establish the necessary contact with the medium for allowing light to penetrate and give reflection and/or refraction readings of the particles (matching refraction indexes).

28 Webster's New Collegiate Dictionary, (1979) s.v. "heat".

29 There is a certain melt and drip activity in Johns' paintings, but one feels certain that further melting would be a destructive, not a constructive, statement. Anyone can let wax run -- and several artists have -- but then it was the wax that was in (our out of?) control.

30 Bachelard, The Psychoanalysis of Fire, pp. 104, 46, 57, 36 and 73.
APPENDIX

The following is a very brief outline of my own method of painting with encaustic:

1. Melt together in a double boiler:
   - 7 parts bleached beeswax
   - 2 parts damar crystals
   - 1 part carnauba wax

2. Pour the melted mixture for cooling into shallow aluminum tins, to create a supply of easy-to-break-up plaques

3. Prepare an organic gesso ground (panel) upon which to paint

4. Put the drawing on the panel, using acrylic for any part of the statement which must remain fixed throughout the burning-in process

5. Remelt pieces of the prepared medium in small tin cans over water, adding pure pigments for colors desired

6. Apply the hot wax mixture to the panel with brushes or knives

7. Reheat the applied wax with a BernzOmatic torch having a specially designed spreader

8. Refine the surface with scraping and reheating
ILLUSTRATIONS

The following are photographs (numbered I-VII) of the encaustic paintings submitted with this thesis. They were made with outdoor lighting. The paintings are 3-D forms which have no frames. (The light area shown around each painting is a plywood carrying board.)
A Special Gift
Encaustic on Masonite
Wax-resin, Acrylic, Gold Leaf
(10" x 40" x 1 3/4")
Design
Manganese Violet, Cobalt Blue, Thalo Crimson
Encaustic on Masonite
Wax-resin, Acrylic
(10" x 40" x 1 3/4")
Three Forms on 4:1 (clean)
Encaustic on Masonite
Wax-resin, Acrylic
(10" x 40" x 1 3/4"")
Turquoise and Silver Encaustic on Masonite Wax-resin, Silver leaf
(10" x 40" x 1 3/4")
La Mer
Monastral Green (Thalo)
Encaustic on Masonite
Wax-resin, Acrylic
(10" x 40" x 13/4")
Waterfall Deco
Ivory Black, Ultramarine Blue
Encaustic on Masonite
Wax-resin, Acrylic, White Gold Leaf
(10" x 40" x 1½")
Three Forms on 4:1 (Thioindigo Violet)
Encaustic on Masonite
Wax-resin, Acrylic, Gold Leaf
(10" x 40" x 1 3/4")