

Artists and Colormen

Arnaud Vincent de Montpetit

Theory and Practice in the Preservation of Art

Bien que je n'aie pas l'avantage d'être d'aucune académie ni d'être attaché à aucuns corps, mes travaux en différents arts ont été assés heureux pour procurer des objets utiles au public, et quoiqu'il soit assés rare de s'occuper en même temps de peinture et de mécanique, ces deux genres ont toujours partagé mes études, en les dirigeant du coté du bien public, j'ai envisagé celles de la peinture dans ce sens et j'ai taché de faire de cet art agréable un objet d'utilité, en cherchant le moyen de conserver, sans altération a la postérité les portraits de famille. Après près de 40 ans d'expériences, j'en ai présenté le résumé, comme objet de phisique et de chimie, en 1775, a l'Academie royale des sciences. J'ai eu l'honneur de vous faire part de son approbation.

Arnaud Vincent de Montpetit to the comte d'Angiviller, 17 October 1782, AN O/1/1916/241.

Arnaud Vincent de Montpetit was a painter with a flourishing practice and an enthusiastic inventor—of clocks, machines to pave streets, hydraulics—who often submitted notices of his inventions to the French academies of both sciences and painting. By 1775, he was convinced that his careful study of the old masters, in combination with his knowledge of chemistry, had shown him how to create paintings that would not deteriorate. He offered the Paris Academy of Sciences a mémoire which outlined his resulting invention, a technique to preserve oil paintings.¹ Vincent de Montpetit first brought this system to the public eye as much as fifteen years earlier, and the mémoire seems to have been less an effort at validation for the technique than an attempt to present a scientific theory worked out through his daily practice.² He does not doubt the continued success of his methods; as he noted, they had been included in the *Dictionnaire des arts et métiers* of 1773.³

The techniques of eludoric painting, or the method of painting miniature with oil colours

- Paste cloth or taffeta onto a small glass, taking care it is even. When dry cover this with white lead mixed with the whitest poppy oil. Apply 3 coats, making sure that it is free from oil. The surface must be very even, very dry, and very hard. Place this into a copper ring, in order to hold distilled water on the surface.

- Grind the colors between 2 agates taking care that there is no dust. Mix them with purest oil of poppy. Work with the colors on a glass covered with distilled water. Touch them only with an ivory knife, not a metal one. The purpose of the water is to magnify the work. It is important to avoid using the colors that dissolve and weaken with moisture such as dutch pink, and never use any substance until first analysing it.

- Cover the painting with glass. To protect from the air, seal the edge with a mucilage chosen because its salts, etc. will have no effect on the painting materials used.

Source: Constant de Massoul, *A Treatise on the Art of Painting* (London, 1797), 34–42.

Montpetit's concern for the preservation of oil paintings was inspired by the work of the old masters, notably Jean Van Eyck. He believed that modern painting did not last as well as the work of the ancients, though he never clearly articulated how they differ. To solve the problem of deteriorating modern paintings,

Montpetit recommended both a preservation method and a new painting technique both based on his experience as a miniature painter. He named his new technique eludoric painting. It, and the preservation method he advocated, involved both the removal of excess oil and exclusion of air from completed painting.⁴

Vincent de Montpetit's Theory of Deterioration

Vincent de Montpetit's theory explains deterioration in a clear analogy between macroscopic observation and presumed microscopic behavior. The heart of his study was an observation that, given enough time, oil rots canvas. This happened, he believed, because the oil used in painting filters down from the surface into the pores of the fabric. This creates openings between the pores, which then fill with air. The air promotes fermentation; the canvas rots, the picture falls apart.

L'huile dans l'action du broyement ne penetre pas d'abord entièrement les matières, mais quand elles sont étendues sur la toile, elle filtre insensiblement dans les pores des parties qu'elles envelopent laisse conséquemment un vuide entre chacune et a mesure qu'avec le concours de l'air elle entre en fermentation, elle est attirée à l'exterieur par l'action des pièces subtiles qui s'en echapent, les plus grossières restent a la superficie et y forment une petite pellicule qui s'epaissit, peu à peu en raison de l'activité de l'air qui la desseche, jusqu'en fin toute l'epaisseur de l'enduit ne forme plus qu'une croute qui durcit a mesure que le peu d'huile qui y reste devient plus ou moins concrete.

Vincent de Montpetit, *Essais sur les moyens de conserver les portraits*, 29 April 1775, AdS pochette p.10-11

The source of this excess oil, Vincent de Montpetit concluded, was newly primed canvas. The oil used in priming materials caused the coloring material to ferment and the canvas to rot. The "subtle and phlogistic" parts of this oil (a phlogiston-rich substance to begin with) can escape only by crossing the painting; on their way out they attach to and so alter the color. As the volatile parts continue to evaporate, the small portions of colors that are not built up close enough to each other lose their tone because the colors underneath transpire. These small areas of color are drowned in the oil as it turns into a kind of dark and fatty varnish that the air destroys. End of painting.

It may be difficult to recognize the source of Vincent de Montpetit's theory without access to some traditions common in miniature painting, a technique that was the basis of his artistic training. Although the colors he used in that practice were essentially oil paints, the works were often made on a hard surface that was only lightly prepared—in this respect more similar to watercolor than to oil painting. Vincent de Montpetit transduced not only theories but also practices, employing, in his explanations of one painting technique, assumptions based on another.

Vincent de Montpetit mentions the problem of deterioration from exposure to

light, but it is exposure to bad air—i.e., virtually any city air—that hastens the deterioration of paintings. This is shown, he observed, in the perception that as oils dried in the air they became concentrated. As they concentrate, the oil coats the smaller particles of color they surround. Their phlogiston could then attack the metallic parts of the colors and change their tone. Proof was derived from observations of painted miniatures—generally painted on ivory and nearly always covered with a protective glass or crystal: Nothing is safe from the deleterious effect of excess oils, not even painted medallions worn as jewelry. Vincent de Montpetit reasoned that the crystal covering the picture becomes overheated and, because of its greater density, the enclosed air becomes extremely dilated. This air escapes and is replaced in proportion by local, bad airs. The bad airs ease into the pores of the painting and form an acidic and sulfurous deposit. This state is easily detected because a deteriorating painting gives off a sulfurous odor.

The foundation of Vincent de Montpetit's theory is clearly his assumption that the observations of miniature painting apply to all other forms of painters' practice. The basis of his preservation technique likewise assumes that what may work for miniatures will function equally well for larger pieces. There are a few changes, though, because Vincent de Montpetit associates so many problems with the preparation of the canvas. He recommends, for example, that a primed canvas be allowed to rest or settle for a time. When you paint on a newly primed canvas, the excess oil dissolves the skin that is in the process of forming on the surface. The oil then fills any void it finds. This causes a displacement of the air, which then rises to the surface of the newly applied color, making the whole look matte and oil-deprived. You know this is true, Montpetit said, because, if you pass a finger over a painted surface just before it is dry, the places you touch become as glossy as if they were polished. The molecules have reconnected and the trapped air has escaped.

Vincent de Montpetit's Eludoric Painting Technique

Vincent de Montpetit's practical response to the problem he found, and so the basis of his eludoric system of painting, was to submerge the painting in water while creating it. This would wash away the excess oil and leave a good finished product, one that would continue to be good for a long time. Even if he could never prove that Jan Van Eyck painted in this fashion, Vincent de Montpetit was certain the result of his technique would be as good and as long-lasting as the works of that master.

It is impractical to apply oil paint to a canvas (or other support) that is under water, and so Vincent de Montpetit proposed an alternative procedure. After a painting is completed (or perhaps every few days, or at the end of every day—instructions are vague), the canvas should be submerged in water. The excess oil will float to the surface of the water: this seems to prove Vincent de

Montpetit's theory correct. In another sense, however, Vincent de Montpetit was recommending an exaggerated version of what colorhouse practice had always maintained: Washing out excess materials that might diminish the goodness of the color was essential to the creation of good color. The preservation process also carried the recommendation to place glass directly on the painted surface, to limit exposure to harmful airs after completion.⁵ This recommendation met with slightly better success, at least in the short-term.

In 1770, Vincent de Montpetit presented to the king an allegorical painting executed in the eludoric technique; it was subsequently exhibited at salons of the Académie de St-Luc and the Colisée. Public exhibition brought some notoriety to Vincent de Montpetit's invention. His wife, herself a painter concerned with the preservation of paintings, later opened a studio specializing in the eludoric technique and in an adapted form used to preserve finished paintings.⁶ But despite the favorable mentions and awards, the process appears to have died out with its originators.

Vincent de Montpetit's mémoire on his eludoric technique was not the only effort to describe a theory of coloration for painting practice. Nor was his solution unique: In 1768, a M. de la Martinière showed the Paris Academy of Sciences his technique to secure paintings behind glass, joining them into a single mass⁷ Both efforts to solve the problems of painting deterioration met the same fate. The inventor was the greatest advocate for the technique and it was abandoned after their deaths.

Notes:

Note 1: Arnaud Vincent de Montpetit, *Essais sur les moyens de conserver les portraits peints à l'huile, plusieurs siècles dans toute leur fraîcheur*, 29 April 1775, AdS pochette, pp. 42. See also "Lecture d'un Mémoire du Sr. Montpetit sur la Conservation des Tableaux à l'Huile, Non Approuvé," 5 August 1780, reprinted in *Procès-verbaux de l'Académie royale de peinture et de sculpture, 1648–1793; Publiée pour la Société de l'histoire de l'art français d'après les registres originaux conservés à l'École des beaux-arts, par M. Anatole de Montaiglon* (Paris, 1875–92), 9:30.

Note 2: "Nouvelle Manière de Peinture en Miniature (Peinture Eludorique, par Sieur Vincent [de Montpetit])," *Mercure de France*, no. 1163 (December 1759): 168–70; "Note sur la Peinture Eludorique," *Mercure de France* 2, no. 1173 (July 1760): 182–85.

Note 3: Philippe Macquer and Pierre Jaubert, *Dictionnaire raisonné universel des arts et métiers. Contenant l'histoire, la description, la police des fabriques et manufactures de France et des pays étrangers : ouvrages utiles à tous les citoyens* (Paris, 1773).

Note 4: Ann Massing, "Arnaud Vincent de Montpetit and Eludoric Painting." *Zeitschrift für Kunsttechnologie und Konservierung* 7, no. 2 (1993): 359–68.

Note 5: Montpetit, *Essais sur les moyens de conserver les portraits peints à l'huile*; see also Meeting Minutes for 30 August 1780, *Procès-verbaux de l'Académie royale des Sciences* 99 (1780).

Note 6: "Les Artistes Français du XVIIIe Siècle Oubliés ou Dédaignés," *Revue universelle des arts* 21 (1865), s.v. "Madame de Montpetit."

Note 7: Meeting Minutes for 4 February 1769, *Procès-verbaux de l'Académie royale des Sciences* 88 (1769).
