

Technical Studies of Exotic Animal Portraits by Jean-Baptiste Oudry

Introduction

Beginning in 2002, the Paintings Conservation Department at the J. Paul Getty Museum has been involved in a partnership with the Staatliches Museum, Schwerin, Germany, for the conservation and restoration of three large paintings from a series of life-size portraits of exotic animals by French painter Jean-Baptiste Oudry (1686–1755), which are housed at Schwerin.

<http://www.getty.edu/museum/conservation/partnerships/oudry/>

Two of these paintings, *Rhinoceros* (306 cm x 453 cm) (Figure 1) and *Lion* (307.3 cm x 257.8 cm) (Figure 2), had not been seen in public for around 150 years because of their poor condition. Following their conservation at the Getty, they could be displayed alongside other works from the suite of animal portraits by Oudry at Schwerin in the exhibition *Oudry's Painted Menagerie* shown at the Getty in summer 2007.

<http://www.getty.edu/art/exhibitions/oudry/>

Conservation and restoration of the third painting, *Reclining Tiger* (191 cm x 259 cm) (Figure 3), will be completed in 2009. The suite of paintings is based around a collection of ten portraits of star specimens in the menagerie of King Louis XV of France at Versailles, which were painted by Oudry between 1739 and 1745.

The conservation treatments provided an opportunity for Getty Museum conservators and scientists from the Getty Conservation Institute's Museum Research Laboratory to collaborate in the study of the materials and methods used by Oudry in the creation of these monumental animal paintings.



Figure 1. *Rhinoceros*, after conservation. Staatliches Museum Schwerin



Figure 2. *Lion*, after conservation. Staatliches Museum Schwerin



Oudry is one of the relatively few artists known to have recorded his thoughts on the practical, technical aspects of painting; he gave two lectures on these matters—the first in 1749, the second in 1752—to students of painting at the French Académie royale, both of which were published posthumously from transcripts. The first lecture, *Réflexions sur la manière d'étudier la couleur en comparant les objets les uns avec les autres*, was delivered on June 7, 1749; the second, *Discours sur la pratique de la peinture et ses procédés principaux: ébaucher, peindre à fond, et retoucher*, was given on December 2, 1752. Of particular interest has been comparing the findings from technical and scientific investigations of Oudry's paintings with the guidance he espoused in his Académie lectures, and with established painting practices of the period.

Arising from the Getty's investigations have been English-language translations of Oudry's lectures, which are published here for the first time, together with transcripts of the original French texts. The scientific studies also sought to provide explanations for particular deterioration phenomena observed by Getty Museum conservators during the treatment of the pictures. Two smaller paintings from Schwerin—*Leopard* (Figure 4) and *Dead Crane* (Figure 5)—were also examined as part of this study.

The scientific analysis of Oudry's animal paintings mostly involved the stratigraphic examination of paint cross-sections by optical and electron microscopy, including spatially-resolved elemental analysis by scanning electron microscopy with energy-dispersive X-ray spectroscopy (SEM-EDS). Some additional analyses of pigments were performed by X-ray diffraction (XRD) and by Raman microspectroscopy.



Figure 3. *Reclining Tiger*, before conservation.
Staatliches Museum Schwerin



Figure 4. *Leopard*.
Staatliches Museum Schwerin



Selected Findings

Grounds

Oudry's stated preference with regard to grounds was "a good half-tone primer made up of a soft and adaptable color," and indeed this is mostly what has been found on the paintings in this study. In all of the paintings examined, double grounds have been found and, with the exception of *Reclining Tiger*, this preparation comprises an initial application of an orange-red color over which is laid a buff (pale yellow-brown) color. The combination of these two ground layers would provide a warm, medium gray effect, probably not totally solid and opaque, but having some vibrancy. Double grounds of this type are well attested in studies of French eighteenth-century painting technique.

The lower orange-red ground of the Oudry paintings is usually composed of a red iron oxide earth pigment, but that of *Dead Crane* also includes some charcoal (Figure 6a). The upper, buff-colored ground layers are composed of lead white, calcium carbonate, yellow iron oxide earth, and charcoal. *Reclining Tiger*, which is generally darker in overall tonality than the other animal paintings, also has a double ground preparation, but the upper layer here is a darker, red-brown color. (Figure 7a) Oudry has clearly chosen this darker upper ground color to provide the appropriate tonal platform for this particular composition.

The sequence of painting: ébaucher, peindre à fond et retoucher

Oudry's second lecture, *Discours* of 1752 provides detailed and specific guidance to students on the various stages involved in the creation of a painting. He describes the three main stages which were seemingly widely adopted by French painters of the mid-eighteenth century: *ébaucher* (the painted sketch

Figure 5. *Dead Crane*.
Staatliches Museum Schwerin

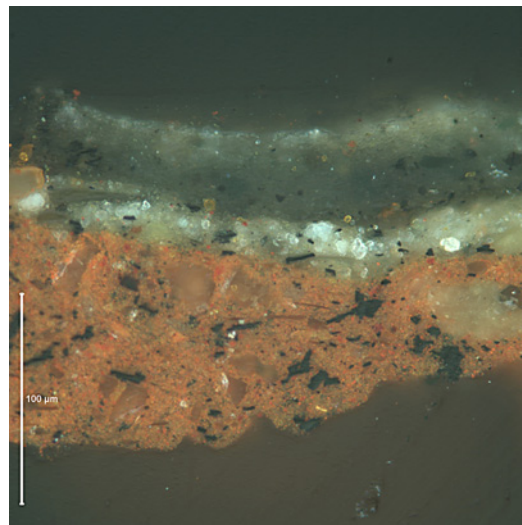


Figure 6a. *Dead Crane*. Cross-section paint sample from blue-gray of foreground landscape, lower left. Visible light; crossed polarizing filters. Photo: Alan Phenix

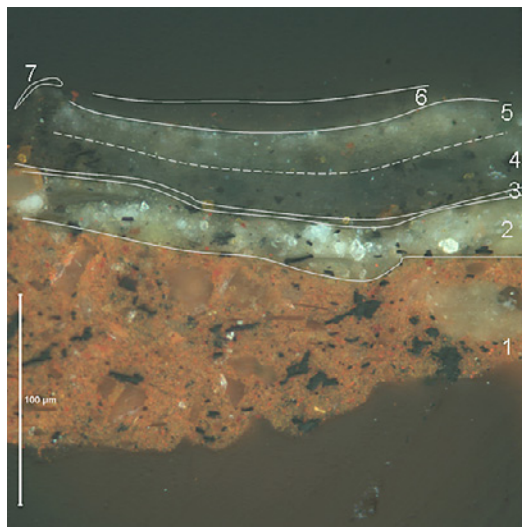


Figure 6b. *Dead Crane*. Sample as in 6a, annotated to show layer structure.

Key to Figure 6

Layer	Description
7.	Trace of relatively recent retouching.
6.	Varnish
5.	Pale, transparent green-gray paint layer



or underpainting), *peindre à fond* (overpainting), and *retoucher* (retouching).

Oudry articulated clearly the purpose of the *ébauche*: "the underpainting is not about the finesse of the brush stroke. Rather it's about properly establishing the chosen subject's form. One should situate the main masses as best one can in the areas determined by the composition." For him, the *ébauche* involved a broad painterly working method that resulted in a relatively vague representation of the principal compositional features, with the tonal relationships established at a preliminary level: "In short, a well done underpainting. . . should be more or less like a kind of halftone, ready to receive lights and shadows like the blue or gray paper we use to draw on." It is clear from Oudry's comments that, in his practice, the *ébauche* was not a monochrome rendering (which is mentioned by some writers of the period and found in the work of some artists) but involved local variation of color.

Many of the samples taken from the animal paintings studied contained distinct layers that can be interpreted as representing the *ébauche* and *peindre à fond* stages of painting. For example, in the lighter passages, such as the areas of sky, the first paint layer tends to be darker and somewhat less intense in color than the final application. This pattern can be seen in a sample from the sky of *Lion* (Figure 8) in which the first paint layer above the ground, thought to represent the *ébauche* (underpainting) stage, is a relatively muted gray-blue (lead white, Prussian blue, bone or ivory black, and orange arsenic sulfide), while the upper layer, the putative overpainting stage, is a much lighter, brighter blue. Interestingly, the sky of *Rhinoceros* is painted in a single layer, without any underpainting (Figure 9). The impression received is that for this especially large work Oudry adopted a more direct, economical approach to painting.

1. Red-brown lower ground layer
2. Buff-colored upper ground layer
3. Layer of transparent organic medium
4. Transparent olive green paint layer

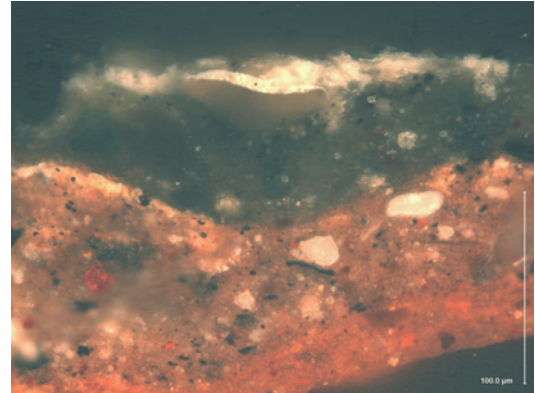


Figure 7a. *Reclining Tiger*

Sample from background landscape, left edge, center.

Visible light, crossed polarizing filters.

Photo: Alan Phenix

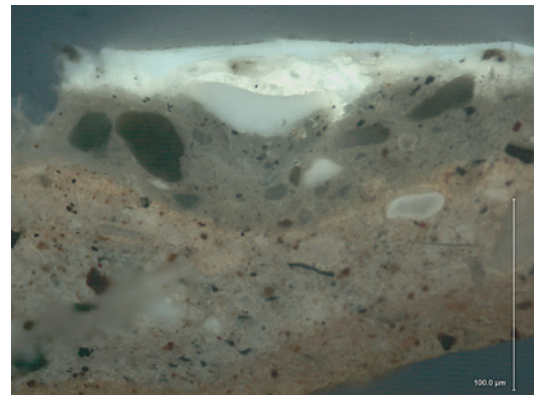


Figure 7b. *Reclining Tiger*

Sample as in Fig. 10a. Ultraviolet fluorescence.

Photo: Alan Phenix



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Intermediate varnish layers

After completing the *ébauche*, Oudry advocates allowing it to dry completely and then applying a varnish before continuing with the *peindre à fond*. He admits that this practice was not common among his contemporaries. Evidence for his use of intermediate varnishes in the three large animal paintings is rather inconclusive, but very clearly indicated in certain parts of *Dead Crane*—for example, in a leaf on the tree in the upper left center of the painting. (Figures 10a and 10b). When examined under ultraviolet fluorescence, the intermediate varnish can be seen as a bright band of material free of any particulate pigment particles.

Pigments and pigment usage

Oudry mentions relatively few pigments by name in his two lectures to the Académie royale. Regarding recommendations for colors to use for all stages of painting, he simply observes, “To load your palette correctly, you should start by filling it with all the colors that are in use.” The typical range of pigments used by French painters of the mid-eighteenth century is quite well established, but it has been interesting to examine exactly what pigments Oudry used in the execution of the animal portraits.

In fact, the range of pigments observed in the five paintings examined is surprisingly narrow. In addition to the pigments found in ground layers—red iron oxide earth, yellow iron oxide earth, umber-type brown iron oxide earth, lead white, calcium carbonate (probably as chalk), and charcoal—chemical analyses of samples has indicated the presence, variously, of Prussian blue, bone or ivory black, green earth, realgar (orange-red arsenic sulfide), Naples yellow (lead antimonate), and vermilion (mercuric sulfide), the last of which is used very sparingly. Perhaps one of the most distinctive features of Oudry's

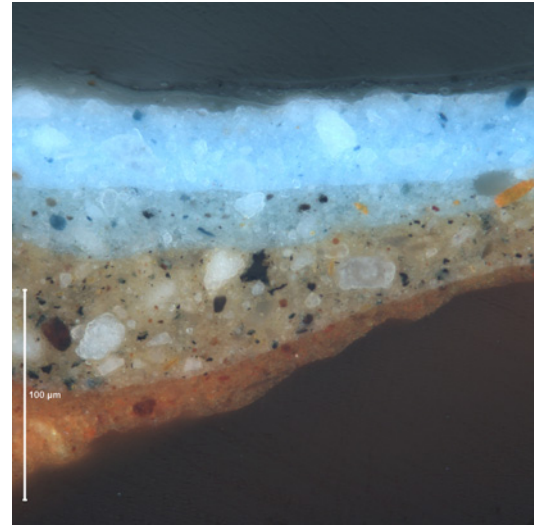


Figure 8. *Lion*. Sample from sky, at top edge, left corner.

Visible light, crossed polarizing filters.

Photo: Alan Phenix



painting practice, as evidenced here, is his extensive use of a red-orange arsenic sulfide pigment, which is either a natural or synthetic form of realgar. It appears in a wide range of mixed colors in skies, in landscape and foliage elements, and in the bodies of the animals. The bright orange particles visible in the underpainting layer of the sample from the sky of *Lion* (Figure 8) are this arsenic sulfide pigment.

One of the specific pigments referred to by Oudry is *stil de grain*, a term which covers yellow and yellow-brown lake pigments prepared from organic, plant-derived dyestuffs precipitated onto an inorganic substrate, typically alumina or calcium carbonate. Considered a relatively low-grade pigment, in part because of a susceptibility to fading by exposure to light, *stil de grain* generally equates with the archaic English term *pink*, as in brown pink or Dutch pink, among others. Yellow and yellow-brown lake pigments, usually on an alumina substrate, were found to have been to be used by Oudry in a wide range of colors; in greens and brown-greens of landscape features, in browns of the bodies of animals, and perhaps most distinctively in deep, warm, transparent black glazes that the artist used, quite characteristically, to strengthen dark contours and to depict intensely dark things such as the tiger's stripes and leopard's spots. In these instances, the yellow-brown lake pigment is used in combination with bone/ivory black to create extremely saturated, transparent, and intense blacks. Although very difficult to perceive in visible light, the yellow-brown lake pigment particles have a very distinctive appearance microscopically under ultraviolet fluorescence; they have a dull yellow fluorescence and a bright halo around their perimeter (Figures 11a and 11b).

Probably the most distinctive aspect of Oudry's use of pigment in the animal paintings is the colors which are *not* represented. The scant use of vermilion has already been noted, but also no

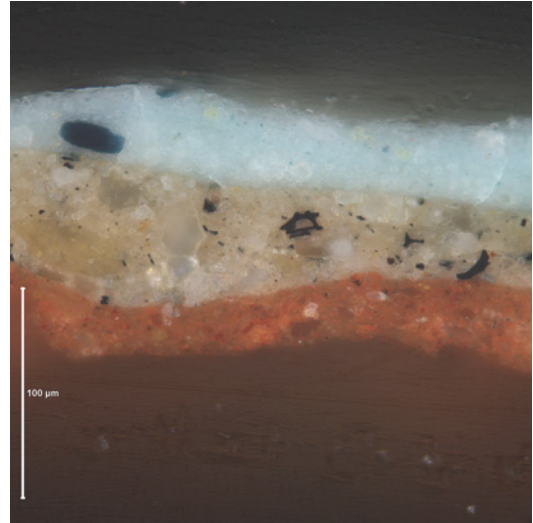


Figure 9. *Rhinoceros*. Sample from sky, at left edge.

Visible light, crossed polarizing filters.

Photo: Alan Phenix

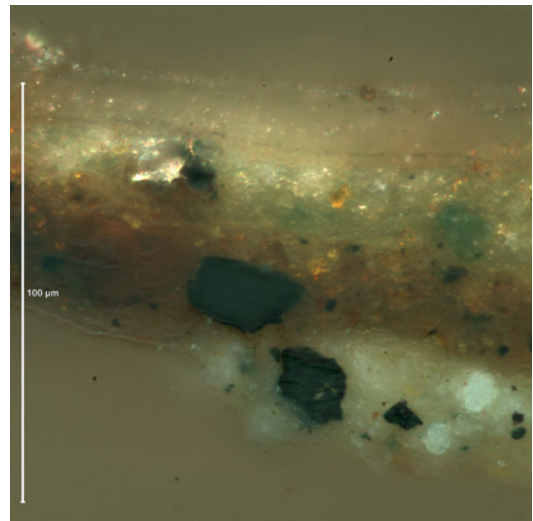


Figure 10a. *Dead Crane*. Sample from a leaf on the tree, upper left center of the painting.

Photo: Alan Phenix



indications were found of any red lakes, any blues other than Prussian blue, or any greens other than green earth. Oudry was clearly able to achieve the full variety of effects he desired with a comparatively limited range of pigments.

Discoloration and deterioration phenomena

Examination of paint cross-sections from these paintings revealed information about several alteration phenomena that had been observed by conservators working on the paintings. All of the paintings examined exhibited some form of blanching—paint and/or varnish becoming whitish and opaque in appearance due to increased light scattering.

Reclining Tiger showed a variety of blanching effects, most notable of which was the large area on the center left of the painting, probably caused by exposure to water in some form. A sample from this area (Figures 7a and 7b) showed that this defect was caused primarily by physical disruption of the lower of the two nonoriginal varnish layers. This problem is relatively easy to deal with as part of cleaning treatments. However, at this location and elsewhere, physical disruption within the paint structure could also be seen; such a defect is far more difficult to correct by treatment.

Another type of blanching defect was observed in a variety of passages of paint in all of the paintings, but most obviously in areas of greenish landscape, as in the foliage and bark of the tree in *Dead Crane*. In paint cross-sections, this phenomenon can be seen as a whitish upper paint surface, as in the samples shown in Figures 6a and 10a. A faded yellow lake on a calcium carbonate substrate is probably the cause of this alteration phenomenon.

A further alteration phenomenon, which occurred most markedly in *Reclining Tiger* and to a lesser extent in *Lion* and *Rhinoceros*, was a surface deformation (micro-cupping) of the upper paint layers. In several areas of *Reclining*

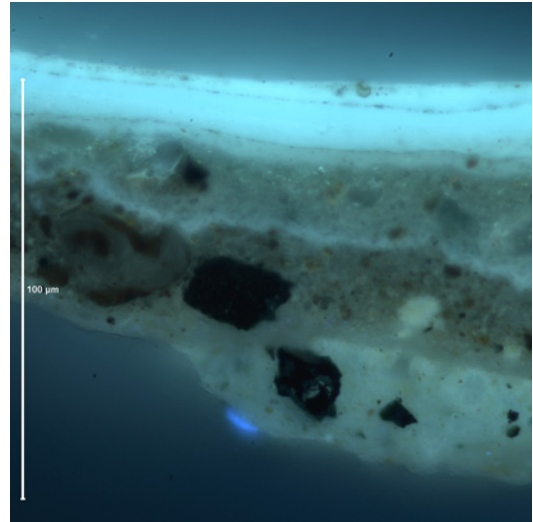


Figure 10b. Sample as in Figure 10a. Ultraviolet fluorescence.

Photo: Alan Phenix

An intermediate varnish layer can be seen above the brown paint layer.

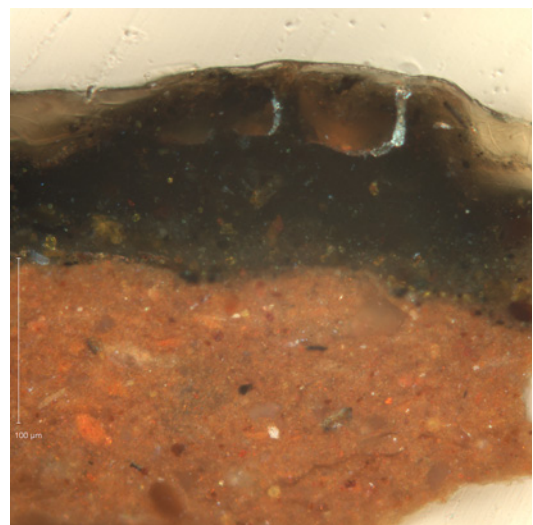


Figure 11a. *Reclining Tiger*. Sample from black stripe on animal's right hip. Crossed polarizing filters.

Photo: Alan Phenix



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Tiger this defect was so severe as to cause comingling of the paint and varnish (Figure 11b). The discovery of such strong paint-varnish interaction dictated a particularly cautious and conservative approach to the cleaning of the painting by Getty Museum conservators.

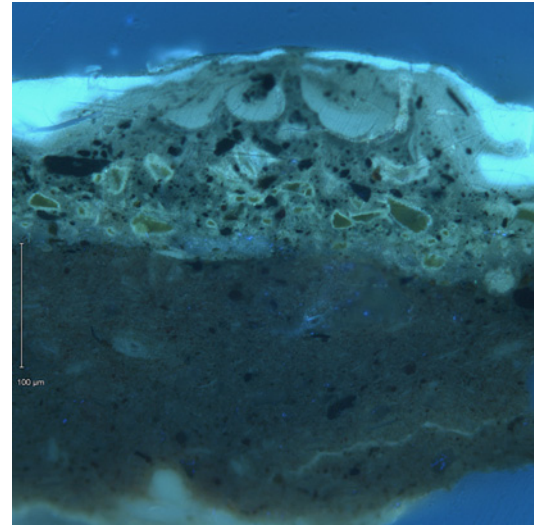


Figure 11b. Sample as in Figure 11a; Ultraviolet fluorescence.

Photo: Alan Phenix

Disruption of an upper paint layer containing bone black; in the layer below, a yellow-brown lake pigment that shows distinctive fluorescence.

Conclusion

Taken as whole, the Getty's scientific studies have shown that Oudry generally appears to have largely followed the systematic approach to painting that he advocated in his lectures to the Académie royale. They have also revealed some features of his practice which differ from the guidance he offered in his second lecture, *Discours*. The findings of this study confirm Oudry's considerable technical proficiency in painting, but also reveal his remarkable economy of process in the creation of these highly naturalistic, life-size animal portraits. The artist has been shown to use a range of pigments that was fairly typical for the period. A distinctive feature of his working method, however, is his reliance on quite a restricted palette of pigments with which he was able to achieve a wide variety



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of painted effects.

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Project Publications

Doherty, Tiarna, Alan Phenix, Anna Schönemann
and Adriana Rizzo. 2008. "Oudry's Painted
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from a series of animal portraits by Jean-Baptiste
Oudry with reference to the artist's lectures on
painting technique to the French Royal
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June 2008. Glasgow University, UK,
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