INTRODUCTION

In the 1960s, Pop artist Francesc Artigau (born in Barcelona, 1940) painted a series of nine works on plywood panels using a traditional primer of commercial gouache, egg yolk, and color pencils. After more than 30 years of exposure to rubbish amidst an indeterminate number of dogs, the paintings show a deplorable state of conservation. The present study examines the treatment undertaken on the paint and ground layers, consisting mostly of cleaning, one of the key challenges of the project (Figure 1).

MATERIALS AND METHODS

The recently restored birch plywood supports (Nualart et al., 2010) had undergone a process of tremendous deterioration due to humidity from the ground and dog urine as well as from nonprofessional attempts at cleaning the works. The paint and ground layers also suffered from the effects of paint loss, damp spots, loss of cohesion of materials, fungi, grime embedded into all levels, erosion, and traces from cleaning tools.

The painting technique used by the artist was commercial gouache (Talens) mixed with egg yolk, applied on a traditional ground layer made of rabbit skin glue and calcium sulfate, on which the author had made a graphite and colored pencil drawing. Once the painting was finished, it was burnished with an agate stone, and no varnish coat was applied. Apart from the information currently provided by the artist, compositional and stratigraphic analyses were undertaken to identify the materials as well as the microorganisms that developed on them.

In the paint and ground layers of each of the works, pH was measured on the different colors and in different areas. A total of 171 points were measured using a CRISON pH25 pH meter, and 297 samples were analyzed using the cold extraction method with a HACH pH meter using a stainless-steel microprobe. The pH measurements are carried out to detect whether changes in the pH of materials correspond with differences in the solubility of the areas analyzed due to the ionization of binder proteins (rabbit skin glue and egg yolk). It is known that proteins are amphoteric and that at their equilibrium pH, called the isoelectric point, they have their minimum solubility (Wolbers, 2000:20).

The amount of data compiled precludes a thorough analysis in this abstract, but it can be highlighted that the difference between the surface and cold extraction pH values...
is considerable. For the surface method, the pH values are almost two points more acidic than those obtained by the cold extraction technique, and although both methods of measurement are considered suitable, it would seem that the cold extraction method is the more reliable of the two (Saverwyns et al., 2002; Stirlič et al., 2004).

Cleaning of the paintings was carried out using a combination of dry systems (eraser dust lightly spread over the paint surface and gently suctioned off) in the areas where the material has good cohesion and a wet system applying rigid agar gel to all the paint surface. So as not to ionize the proteins during the cleaning process the agar gel was prepared with water buffered to a pH of 5.5 (Figure 2).

Agar was chosen after taking into consideration the components of both the dirt on the paint surface and the paint layer itself, both of which were water soluble. Agar’s rigid structure allows the water needed in the cleaning process to be in contact with the dirt on the surface while being retained within a gelatinous structure, thus ensuring the paint layers are not impregnated. It has the additional advantage of not needing to be rinsed afterward as its rigid structure does not leave any residues.

It has been impossible to remove all of the soiling adhered to the paintings by the applied cleaning process because of the degree to which dirt had been absorbed into the strata and the fragility of the ground and paint layers, which does not allow a differentiated treatment of grime, as this could mean risking the integrity of the original components. It must be accepted that some of the dirt embedded in the paintings over the years has become part of its composition.

Given the fragility of certain areas that have suffered the direct impact of degrading elements, a consolidation of the paint layer was chosen after cleaning. Tests were carried out with 1.5% (w/v) of Jun-Funori in distilled water and with 2% (w/v) of Klucel E (hydroxypropyl cellulose) in absolute ethanol. The latter option was selected because applying a consolidant with an alcoholic vehicle appeared to be a better means of avoiding new fungus colony proliferations.
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REFERENCES


