

THE INVESTIGATION OF 17-19TH CENTURY COLORED PRINTS DISTINGUISHING COLORING CAMPAIGNS.

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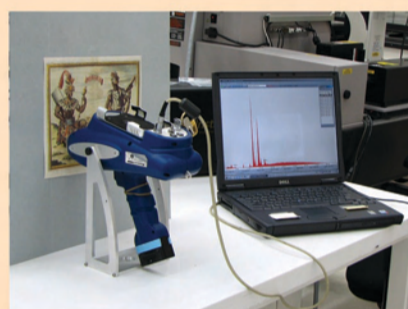
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Introduction

An upcoming exhibition at the Getty Research Institute (GRI) entitled “The Marvel and Measure of Peru: Three Centuries of Visual Histories, 1550-1880” (July 8–October 19, 2008) will explore the ways Peru and its peoples were depicted after the conquest. The exhibition will include a number of colored prints from the Gutierrez collection (part of the GRI collection since 1984) - a collection of over 1400 lithographs, prints and clippings collected by Pr. Tonatiah Gutierrez and his wife Electra to compile a three volume work on early depictions of the Americas. Because many of these pieces were not considered works of art, it is possible they may have been colored by dealers in an attempt to increase interest or value. Therefore, in preparation for the exhibition, nine of the prints were selected for study in order to assess whether or not the coloring was contemporary with the print. The nine prints studied date from 1608 to 1815 and consist of maps and illustrations depicting the peoples of Peru, or Europeans dressed in Peruvian fashion (see pictures below).

Experimental

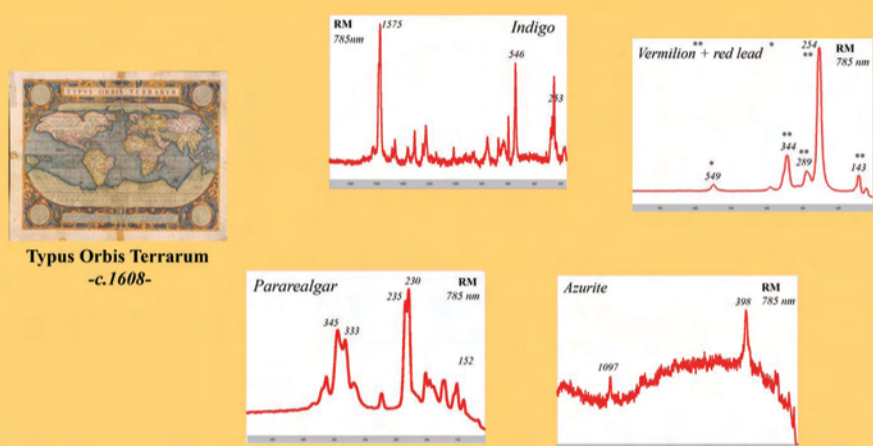
Two complementary non-invasive and non-destructive analytical techniques were used for this study: X-ray fluorescence (XRF) spectroscopy (Keymaster /Bruker Tracer III-V handheld spectrometer with a Rh anode, Ti/Al filtering, operated at 40kV, 1.5µA) and Raman microscopy (Renishaw InVia spectrometer equipped with 514, 633, 785 and 1064 nm excitation sources, specific experimental parameters indicated on individual spectra, shown below).



Bruker Tracer III © handheld XRF spectrometer in front of one of the nine colored print



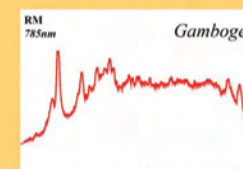
The print Callao de Lima 17th c. under the microscope objective of the Renishaw InVia Raman spectrometer



The oldest print, dated 1608, was found to contain vermilion, pararealgar, red lead, azurite and indigo, pigments which would have been readily available at the time of printing.



Peruvienne -c.1815-



Le Perou -c.1761-

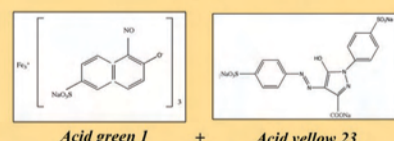
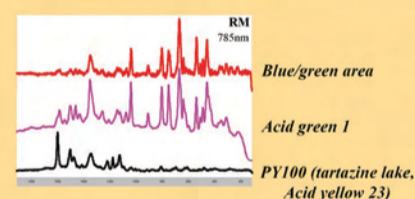
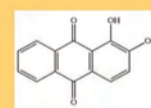
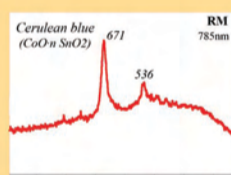


A new map of america meridionale -1693-

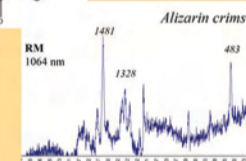
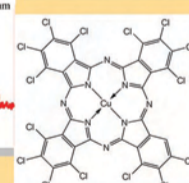
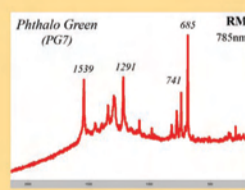
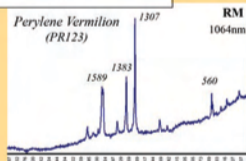
Three other prints, dating from 1693, 1761 and 1815, were found to contain the pigment gamboge in addition to “traditional pigments” such as red lead or azurite. Gamboge was introduced into Europe in the mid-17th century and therefore would have been available at the time the prints were produced.



Peru -c.1671-



Habitants du Perou -c.1716-



America noviter delineata -c.1634-1649-

A third group of five prints (of which three are shown here), dating from 1634 to 1791, were all found to contain nineteenth and twentieth century pigments which must have been added subsequent to the printing (in addition to some traditional pigments, e.g. vermilion, indigo, goethite etc.). Inorganic pigments identified include cerulean blue (CoO·nSnO₂) and chrome yellow (PbCrO₄), which were introduced respectively in 1860 and 1818. A large number of twentieth century organic pigments were also identified, including phthalocyanine green (PG7, C.I. 74260), hansa yellow (PY3, C.I. 11710), acid green 1 (C.I. 10020), acid yellow 23 (C.I. 19140) or perylene vermilion (PR 123, C.I. 71145). Acid green 1 and acid yellow 23 were identified as the main components of a Winsor & Newton “Hooker’s green” pigment manufactured for a short time in the 1980s and since replaced by another formulation.

In the first group of prints (top left insert, Typus Orbis Terrarum) the availability of pigments alone is not enough to conclude in whether or not the coloration is original to the print. Whereas in the last group (bottom insert, e.g. Peru, Habitants du Perou, America noviter delineata) the “traditional”, the 19th and the 20th c. pigments appeared to occur together on the prints suggesting the colors were applied in a single campaign, most likely sometime in the 20th century. The study of a wider group of prints from the same collection will constitute the next step (in progress) and will try to establish possible relationships between the modern coloring campaigns and the provenance of the prints.