

# Colorful wall hangings can contain toxic substances

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Traditional Swedish bonad paintings can contain toxic substances such as arsenic, reveals new research from the University of Gothenburg, Sweden, in which painting conservator and conservation scientist Ingalill Nyström analysed the paint and techniques used in the traditional painted wall hangings from southern Sweden. Previous research into bonad painting has always originated in the humanities, from an art/cultural history perspective.

Bonad paintings are painted wall hangings that tell a story, often with a biblical theme, and were put up in farmhouses on special occasions such as Christmas. However, there has, to date, been little information available about the paint and [materials](#) used.

"It's important to know about the materials used in these wall-hangings so that we can preserve them," says Ingalill Nyström from the University of Gothenburg's Department of Conservation. "We need to know whether they run the risk of being bleached or broken down by different kinds of exposure, treatment or conservation method. It's also important for the people who handle them to know whether any of the substances in them could be harmful or toxic."

Several toxic pigments have been found in the wall hangings studied, including orpiment and emerald green, which contain arsenic. Orpiment was very common in yellow pigment in painted wall hangings throughout the 18th century and well into the 19th century too. Emerald green appears in some 19th century wall hangings.

"So it's important to be careful when handling them. Several of the pigments and dyes are also sensitive to light, and the binding agent in the hangings is sensitive to damp and moisture."

Ingalill Nyström's thesis is the first of its kind. Previous research into bonad [painting](#) has always originated in the humanities, from an art/cultural history perspective.

Her aim was to investigate the technology, materials and painting techniques used in the wall hangings.

"The quality and characteristics of the materials used can play a role in both these paintings' technical opportunities and their limitations. In my book I describe the various raw materials, approaches, potential painting tools and other aids that could have been used," says Ingalill Nyström.

She also discusses how the paints may have been mixed and applied to the wall hangings.

Ingalill Nyström's work is a cross-disciplinary study that combines art technological source research with spectroscopic analysis methods. She has examined more than 70 bonad paintings originating from southern Sweden between 1700 and 1870, and also 700 paint samples.

The materials used often comprised paint made with cheap pigments mixed up with egg and sometimes a touch of flour. The paint was generally applied to recycled linen, which had been primed with flour glue. Typically, templates were used for the figures in the scenes depicted.

Provided by University of Gothenburg

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