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The hidden layers: the preparatory layers and their impact on the conservation of paintings.

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ABSTRACT

All the traditional layers of a painting, including support, sizing, ground/preparatory layers, paint film and varnish layer influence its aesthetic. They also determine the way the painting will age and how its structure may weaken or change, thereby modifying or disrupting the painted image.

However the preparatory layers are less often studied and analysed than the other layers in conservation research. Hidden between the support and the paint film, they are usually only partially visible on the edges or through some damage to the paint film.

In three different cases - Hugh Ramsay's *The Foil*, 1901, Tom Roberts's *Jealousy*, 1889 and Frederick Leighton's *Winding the Skein*, 1878 - the materials used by the artists in their preparatory layers have proven to have had a primary role in the current condition of the three paintings. The first two have extensive drying cracks and the smooth porcelain-like surface of the latter has been disrupted by the formation of a profusion of tiny lumps.

All three paintings have recently undergone major conservation treatments during which the preparatory layers and paint films were analysed. The preparatory layers of Hugh Ramsay's *The Foil* and Tom Roberts's *Jealousy*, were analysed by FTIR and GCMS which identified in both the presence of poppy seed oil. Analysis of the preparatory layer of Frederick Leighton's *Winding the Skein*, revealed the presence of zinc white as well as the detailed structure of the soaps agglomerates whose formation also seems to have involved the use of poppy seed oil.

Analysis depended on collaboration with scientists from Northumbria University in the UK and the Australian Synchrotron in Melbourne. This was crucial in the identification of the preparatory layers' materials and understanding the cause of the damage to the paint films. This paper will present in detail the analysis performed by the collaborating bodies as well as the nature of the materials found and explain their role in the physical and aesthetic disruption of the images.

BIOGRAPHIES

Céline de Courlon is a French Painting Conservator at the Art Gallery of New South Wales. She gained a Masters in Conservation of Paintings at the Institut national du patrimoine in Paris in 2012. She has worked for the MCA, the Biennale of Sydney, ICS and Sydney University in Sydney.

Simon Ives is a Painting Conservator at the Art Gallery of New South Wales. He gained a Masters degree Fine Art Conservation with a specialism in easel paintings at the University of Northumbria (UK) in 1994. He worked at the Tate Gallery, the National Gallery of Australia and in private practice.

Paula Dredge is Head of Painting Conservation at the Art Gallery of New South Wales. She has a Bachelor of Applied Science in Conservation of Cultural Materials from the University of Canberra. She was awarded a PhD with the Centre for Cultural Materials Conservation at the University of Melbourne in 2014.

Andrea Nottage has an M.A. in Fine Art Conservation, Easel Paintings from the University of Northumbria (UK) 1995, a post graduate fellowship in painting conservation from the University of Cambridge (1997) and has worked as a painting conservator for The Royal Collection (UK), The Guildhall Art Gallery, Tate Modern, The Guggenheim Museum (NYC) as well as in private practice and the Art Gallery of NSW, Sydney.

Brian Singer was a Senior Lecturer in art conservation science, between 1984 and 2012 in Gateshead College and Northumbria University. His research is concerned with: artists' techniques and chemical analysis of historic materials. He now co-operates with Northumbria University to provide analytical services for conservators and conservation projects. *e-mail Address: brian.singer1434@gmail.com.*

Gillian Osmond is a Paintings Conservator at the Queensland Art Gallery. She has a Bachelor of Applied Science in Conservation of Cultural Materials from the University of Canberra (1988) and was awarded a PhD from the University of Queensland in 2014 for research on zinc soap formation in artists' paints.

Ljiljana Puskar is a Senior Scientist at the Infrared beamline at BESSY II, HZB Berlin since 2014, prior to which she held a position for 7 years at the Australian Synchrotron where she was responsible for the development of the cultural heritage community at the Infrared Microspectroscopy beamline.