

## **GLASGOW COLOUR STUDIES GROUP**

### **Notes following the Twenty-Fourth Meeting, 19th November 2014**

The twenty-fourth meeting of the GCSG took place in Room 1, English Language, University of Glasgow. Thanks are due to Carole Biggam who organized the meeting, to Christian Kay who introduced the speaker, and to Christian Kay and Carole Hough who organized the refreshments.

Our speaker was Dr Richard Jones, archaeological chemist, University of Glasgow.

#### **Richard Jones spoke on 'Recent Work on Minoan and Mycenaean Wall Paintings'**

His abstract is as follows:

Minoan and Mycenaean wall paintings continue to attract great attention through new discoveries such as those at Tell el Dab<sup>a</sup> in the Nile delta as well as at Pylos and Iklaina in the Peloponnese. New research is increasingly integrating the paintings' art historical and technical aspects to give a more rounded view of the painter's craft and to understand the interface between iconography, technology and style. This talk will look at some issues to do with colour: colour effects, how they were achieved, and the nature and sources of the pigments.

Commentary (by Christian Kay; checked by Richard Jones)

The talk began with slides of the principal wall-painting sites, the palaces where they are found, and the paintings themselves. On Crete, Knossos is an important site where excavations were begun by Sir Arthur Evans in the first years of the twentieth century. (Dr Jones spent time in the mid-1970s at Knossos Museum where Evans' finds are stored). From the Mycenaean period, the site of Iklaina has important wall-paintings, and a later, different style is found at the elaborate palace of Pylos. Taken together, the sites date to the period 1900–1250 BC.

At Akrotiri on Thera (modern Santorini) in the Cyclades islands, sometimes referred to as the 'Pompeii of the Aegean', considerable material is preserved, including fragments of smashed paintings which date to c.1620 BC. There are large-scale paintings of nature, animals and various rituals, which probably represent the work of more than one artist. At the 'West House', there are well-known paintings of fishermen, assumed to be taking part in some kind of ritual, and this shows how paintings were adapted to the domestic life of the people. The paintings include some puzzles, such as a flotilla scene which is not fully understood. Although buildings with this kind of decoration are usually referred to as 'palaces', some were just houses of the wealthy, for example, several in the port town of Kommos.

Remains of paintings are found all around the Mediterranean, and there is evidence of work by Minoan artists, for example, illustrations of bull-grappling and bull-leaping, in some frescoes found at the Hyksos capital in the Nile delta in Egypt of the same date as Thera paintings. This shows the high regard in which Minoan artists were held in the wider eastern Mediterranean. Apart from their style, the plaster used can also provide a clue to the origin of

the paintings, as lime plaster is Minoan, and gypsum is Egyptian. The restoration of these paintings is a long and complex business, often involving the sorting of thousands of fragments from smashed paintings. Earlier reconstructions may have to be revised in the light of new discoveries.

Microscopy is used to examine the layers of pigment (although there is little evidence that people deliberately overpainted older works). The mineralogical composition of pigments is determined by X-ray diffraction, the composition of the compounds by Raman spectroscopy, and the elements by a range of techniques. It is, of course, important that investigative techniques should cause minimal damage.

Dr Jones described the work at Ayia Irini, Kea Island, where the choice of pigments was determined by local availability. The basic palette is yellow to orange to red-brown, involving ochres rich in iron oxides such as haematite and goethite. Umber was also used for some browns. A large range of shades could be achieved, depending on the purity of the pigment, whether it was ground up, whether it was heated, and so on. For white, plaster was used, carbon was used for black, and they were mixed to produce grey. Similarly, pink was produced from mixing red and white. Green is very rare in these paintings as it was difficult to obtain because of the rarity of copper-rich earth in the Aegean region. However, green could be made from mixing blue and yellow. There is no evidence of vegetable colourings but they are difficult to trace. Two shades of blue were used, both local to Crete. 'Egyptian Blue' is an artificial compound called calcium copper tetrasilicate, and it produces a sky-blue colour. Grey-blue was obtained from a natural mineral called Riebeckite. At Gla and nearby Thebes in Greece, there is evidence for the occasional use of lapis lazuli. The colour purple was obtained by mixing Egyptian Blue with red, and there was possibly some use of murex dyes. The latter is controversial, but fragments of murex shell have been found in walls.

The techniques of producing wall-paintings are: *al fresco*, in which the illustration is painted on a damp surface (this is the more stable method); and *al secco* which involves painting on a dry surface with the use of a binding agent. It is now possible with modern analytical methods to detect the very poorly preserved organic binder (such as egg). The tools used are trowels, spatulas and floats. The plaster is always lime-based, derived from limestone, which is usually found at a distance of one to two kilometres from the sites of wall-paintings. Overall, this was a conservative profession but it was adaptable to local conditions.

There is some evidence for incipient colour terms in Linear B, but they are used in restricted contexts: terms for white and red are linked with cloth; for crimson and red ochre with chariots; for purple with dye; and for blue with glass.

## News

**Our next meeting** will be on Wednesday, 18th February 2015, at the same place, when Duncan Chappell, Academic Liaison Librarian, Glasgow School of Art will speak on 'Lost and Found: Colour Resources at the Glasgow School of Art'.

If you have suggestions for, or offers of GCSG meetings (any format), please contact Carole Biggam at [c.p.biggam@btinternet.com](mailto:c.p.biggam@btinternet.com) Please note that we attempt to produce a balanced programme (i.e. different disciplines) and do not necessarily accept talks in the order in which they are offered. Nonetheless, all offers are most welcome and will be acknowledged.

Please report any new publications (books or articles) or other colour-related news on our discussion list at [ColourStudies@jiscmail.ac.uk](mailto:ColourStudies@jiscmail.ac.uk)