



Section C

301/C

Investigation of traditional technology of production of wall paintings in Sri Lanka

T D N Perera

Centre for Heritage and Cultural Studies, University of Moratuwa, Moratuwa

Traditional artists who produced traditional Sri Lankan wall paintings used a production technology that employed a vast majority of materials and production processes. The following methods were used in this study to investigate these methods and processes: obtaining information from the traditional technical texts and generating information by scientific analyses. Manjusri basitha chitrakarma shasthra is the only available traditional technical document relevant to this study. Indian technical texts such as Vishnudharmottara-purana, Samarangana-sutradhara, Manasollasa and Silparatna also give useful information. Traditional Sri Lankan wall paintings consist of four main layers, namely support, ground, paint receiving layer and the paint layer. They were prepared using three main painting techniques, namely classical, medieval and southern techniques. The scientific investigation was done by preparing samples using traditional technology and the analysis of survival patterns of samples. The samples were prepared using the methods described below and their long-term survival patterns were determined by detecting temperature and humidity variations of the samples and growth of microorganisms in them. The support of classical paintings was rock surface prepared by flattening with a chisel but with a number of foldings, teeth and incisions to make it rough. Lime containing CaO:MgO in the ratio of 97:3 mixed with sand and clay was used to prepare the classical ground. The medieval ground was prepared by mixing fine brown clay and sand in the proportions of 2:1, with wood-apple gum. The southern support contained laterite cubes and lime mortar, sea sand, pure lime with Ca:Mg less than 0.05 and lime-sand mixture in proportions of 11:9. Very fine white burnt lime was used in the classical paint-receiving layer. Huntite and wood-apple gum was used in the medieval paint-receiving layer to prepare a white putty of thickness of not more than 1 mm. White kaolin was used for the paint-receiving layer of southern paintings. The medieval paint was prepared by mixing wood-apple gum with finely powdered cinnabar, orpiment and lead white pigments. The indigo pigment was prepared by beating Indigofera tinctoria leaves in water and allowing oxidation to occur. Gamboge was obtained from the Garcinia morella tree to prepare yellow paint. Finely powdered cinnabar was used as red pigment of southern paintings. Powdered Prussian blue synthetic pigment mixed with wood-apple gum or other suitable plant gum was used. Intermediate colours were prepared by mixing pigments appropriately. Following actions were performed to prepare classical paintings: sketch drawing with a pencil, furnish line drawing with brush, apply colour, perform shading or tonal variation, carryout final outlining and perform finishing touches. The medieval paintings were sketched in black paint using a fine brush. The background was filled in pink leaving white figures and figures filled in yellow. They were carefully outlined in red. The background was filled in pink covering it with red and adding details of figures in red and then neatly outlined



it with a firm black line. Southern paintings too were sketched with a pencil, completed the line drawing with a brush using black paint, applied colours with variations in hue and saturation, reinforced lines with black and completed with finishing touches. This study did not make use of information available in the ola leaf manuscripts and books available in a few southern temples because these provided misleading information. Usage of dorana oil is mentioned in these books but oil obtained from *Dipterocarpus glandulosus* tree had not been used during the southern period. Dorana oil is prohibited to be used in conservation as this results in the absorption and fixing of waste on paintings increasing their rate of decay.

Acknowledgement: Financial assistance by the Ford Foundation, USA

n88geo@yahoo.com

Tel: 0728547731