

The Revival of the Ancient Technique of Printing with Mordants and Dyeing in Natural Colourants to achieve Contemporary Multi-coloured Designs

Katie Churn and Dr Kate Wells

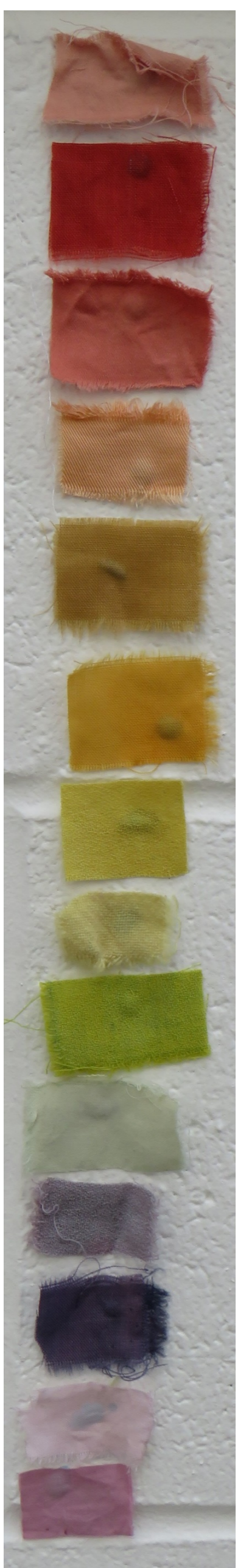
Introduction

This research explored how mordants and resist pastes were used in ancient times for dyeing fabrics with natural colourants, and creating multicoloured patterned designs. These historical techniques influenced my design work and were applied to modern processes. Print pastes were created using natural pigments and natural gums to be used through silk screens. This research aimed to find a more sustainable way of printing and dyeing than using synthetic dyes and pigments.

Research Methodology

The preliminary research involved literary investigation into traditional and historical methods of dyeing using natural mordants and colorants, to expand knowledge of these processes.

Secondly I undertook practical research by developing a range of colour swatches using different fabrics, natural dyes and mordants, and used them as reference material throughout the design process.



Tested Natural Dyes

Pinks/Reds: Madder (roots), Red Cabbage, Blackberries, Avocado (pits and skin)

Oranges: Annatto (seeds), Red and White Onion (skins), Cutch (bark)

Yellows: Weld (plant), Turmeric (root), Heather (flowers), Marigold (flowers), Tansy (flowers), Goldenrod (leaves, stems and flowers)

Greens: Chlorophyll (leaves), Weld overdyed with Woad

Blues: Woad (leaves), Red Cabbage, Logwood (wood)

Purples: Red Cabbage, Logwood (wood)

Browns: Logwood (wood), Walnut (husk), Oak Galls



Mordants

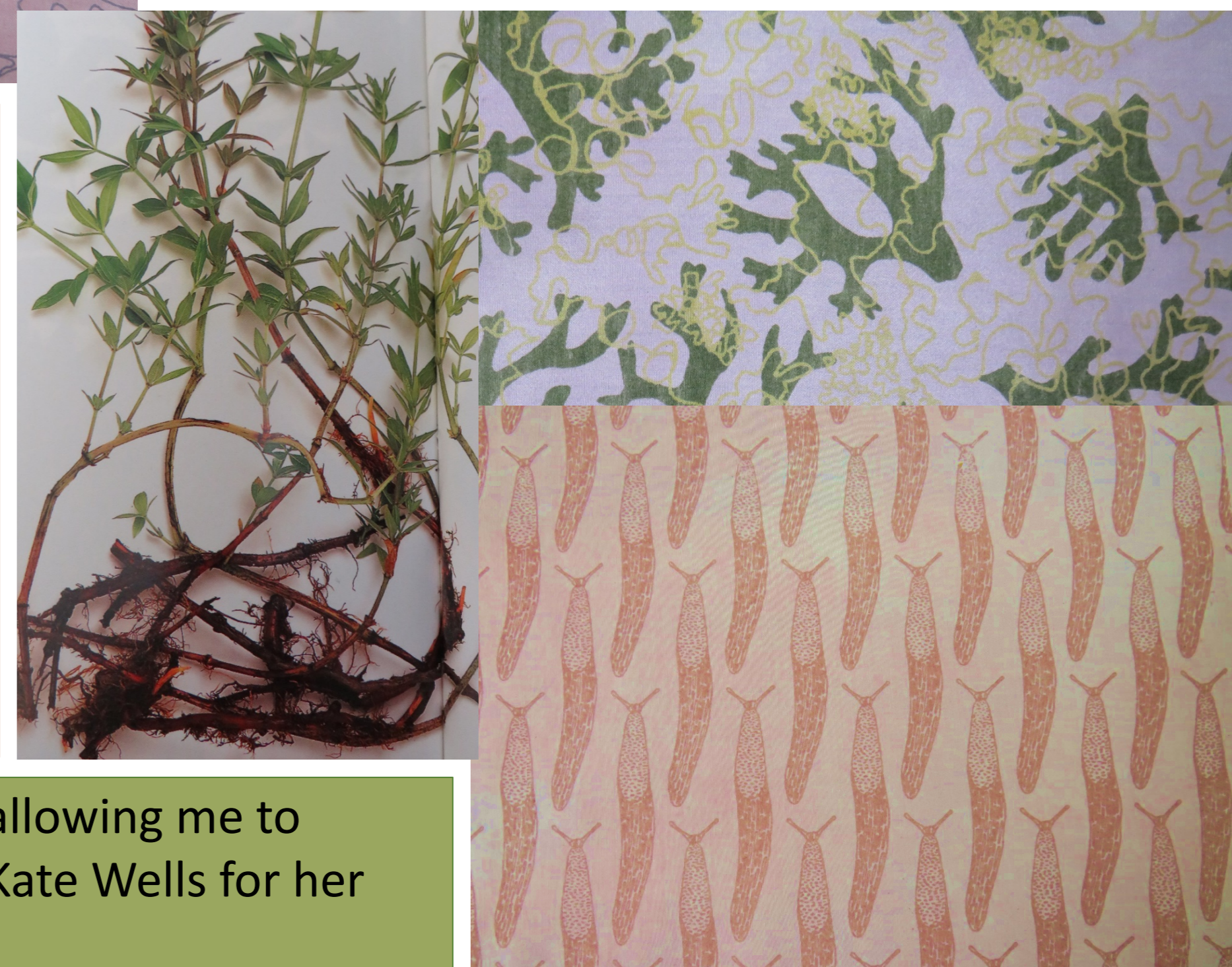
- Mordants help the dyes to chemically attach to the fabrics making them more light and wash fast
- Alum mordant was used for the protein fibres
- Tannic acid, from oak galls, mordanted the cellulose fibres
- Soaking fabrics in soya milk before dyeing helps the dyes to be absorbed

Modifiers

- Modifiers are applied after dyeing to alter the colours of the dyes
- Ferrous Sulphate tends to make dyes a darker shade
- Altering the pH of a dye will alter the colour produced sometimes significantly

Conclusion

In conclusion some of the colours produced during the research were not as vibrant as expected, possibly due to pH of the water, therefore further research using a pH metre will be carried out, as well as continued research into the printing of natural dyes and mordants. This project will be continued into the third year of study, developing further techniques and colours. This research led to the submission of an abstract to the International Dyes in History and Archaeology (DHA37) conference funded by the Society of Dyers and Colourists (SDC).



A special thank you to the Derby University URSS for funding the project and allowing me to develop my knowledge and skills. I would also like to thank my supervisor Dr Kate Wells for her support throughout the project