



The Colours of Orains

The Colours of Orains™



Project report

Pieter van der Werf

Orains Art & Design

6 July 2022



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Contents

Acknowledgments	p. 3
Summary; introduction to and inspiration for the research	p. 4
Research methodology	p. 10
Research output	p. 12
Bibliography	p. 23
Appendices	p. 24



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partner in Orains Art & Design

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The Colours of Orains

Summary

From March 2020 to June 2022 the research project “The Colours of Orains” was carried out by Pieter van der Werf, artist at Studio Orains. The outcome of the project is four colour suites developed with local Scottish plant materials, to be used in the creation of textile art, paints and inks. This report describes the journey towards the colour suite development, referenced with library and literature research.

Introduction

Studio Orains creates large-scale textile art made with wool fibres. Since 2014 we have been introducing natural dyes made from plant materials gathered around the atelier and further afield.

Our exhibition “Granularity” (Cass Art artspace Glasgow, 2019) introduced the public to various dyeing techniques and art pieces made with natural pigments only. The exhibition offered the atelier the chance to reflect on the use of locally sourced plant materials only, and in the summer of that year we decided to embark on an extensive year-long research project into natural dyes.

To make the work on the project possible it was decided to apply for financial support in the form of a grant through the Open Project Fund administered by Creative Scotland. A grant was awarded on 3 March 2020 and Creative Scotland stated:

“The strong environmental focus of this work was recognised, and the development of previous work was considered strong”.



The project is called “The Colours of Orains” and the research part was carried out by Pieter van der Werf from 21 March 2020 to 20 March 2022¹.

Creative Scotland described the project in its publicity in June 2020 thus:

Funding towards Pieter van der Werf's year-long research project, The Colours of Orains, during which a definite set of colours for Orains Art & Design will be explored and created for use in hand dyed fabrics.

This research project will use plant material exclusively from the West Coast, Highlands and Outer Hebrides in Scotland. Inspiration for the colour ways will come from the natural world and from literature, including Werner's Nomenclature of Colours by the Scottish flower painter Patrick Syme and Jean Fraser's Traditional Scottish Dyes.

Asked about the impact of the lockdown on the Colours of Orains: "We started the project two days before lockdown and as a result some of our plant collection and analysis has been brought forward. Our studio is located in an area where flora and fauna is thriving even more now, uninhibited in the main by human intervention - there is an abundance of materials to work with. Research visits will hopefully take place later in the year."

¹ The Sars-Cov-2 or Coronavirus pandemic affected the project. Originally the project time scale would have been 21 March 2020 to 20 March 2021. However, on 23 March 2020 the United Kingdom went into lockdown and people across the UK were ordered to 'stay at home'. A second UK-wide lockdown came into force on 5 November 2020. See for a timeline of events:

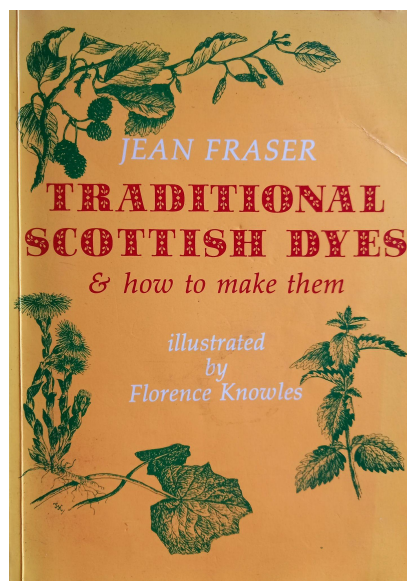
<https://www.instituteforgovernment.org.uk/sites/default/files/timeline-lockdown-web.pdf>

As part of the project involves library research in Edinburgh and Kew Gardens, it was agreed with Creative Scotland to extend the length of the project, including research visits to the above institutions.



Inspiration for the research

We have been creating coloured fibres at the atelier from 2013 onwards, using “Traditional Scottish Dyes & how to make them” by Jean Fraser, a book kindly given to us by weaver Sarah Sumsion.



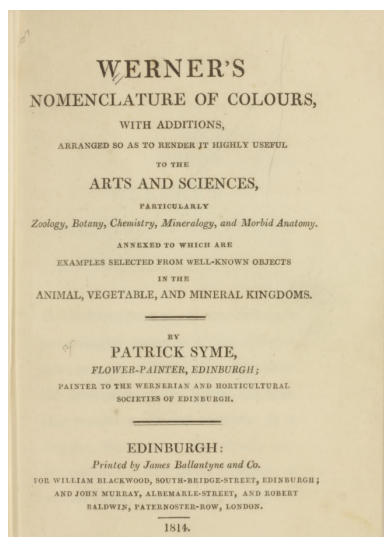
The book lists 75 flora species and recipes for commonly available plants, shrubs, lichen and trees with which to make dyes.

Fraser lists nine colour groups (yellow, green, brown, purple, black, red, orange, pink, grey/blue/violet) under which she classes plant materials. For example, under red she lists Black Thorn Bark, Bramble, Cudbear, Lady’s Bedstraw, St. John’s Wort and Tormentil (Fraser, p.18).

The book is a valuable asset as it contains dye recipes and methods that go back centuries, some of which have survived only through word-of-mouth and from generation to generation. It is the first publication which inspired the research project.



The second publication which is used in the atelier and inspired this research project is “Werner’s Nomenclature of Colours (adapted to Zoology, Botany, Chemistry, Mineralogy, Anatomy and the Arts)” by Scottish painter Patrick Syme. First published in 1814 it has been reproduced (in combination with Syme’s second edition from 1821) by the Natural History Museum, London (Syme, 2018). An excellent version of the first edition is accessible online via the Linda Hall Library, Kansas City, USA (Syme, 1814). A digital version of the second edition is available at Public Domain Review (Syme, 1821).



GREENS.					
No.	Names.	Colours.	ANIMAL.	VEGETABLE.	MINERAL.
53	Grass Green.		Scarabeus-Nobilis.	General Appearance of Grass Fields Sweet Sugar Pear.	Uran. Mica.
54	Duck Green.		Neck of Mallard.	Upper Disk of Yew Leaves.	Crysolite.
55	Sap Green.		Under Side of lower Wings of Orange-tip Butterfly.	Upper Disk of Leaves of woody Night Shade.	
56	Pistachio Green.		Neck of Elder Drake.	Ripe Pound Pear. Hyacinth like Saxifrage.	Cryolite.
57	Apricot Green.		Bristle Butterfly.	Fringed Horse-Shoe Geranium.	Beryl.
58	Olive Green.			Foliage of Lignum vitae.	Epistote, Oliven Ore.
59	Oil Green.		Animal and Shell of common Water Snail.	Nonpareil Apple from the Wall.	Beryl.
60	Siskin Green.		Siskin.	Ripe Coulmar Pear. Irish Pimper Apple.	Uran Mica.

First edition, page 67

The book offers an overview - or perhaps a palette - of 110 colours or tints. Since its publication it has been a continuous source of reference for scientists, researchers, paint companies and artists.

Its nomenclature consists of ten groups of colours: whites, blacks, browns, blues, greys, purples, greens, yellows, oranges and reds.

Syme’s “standard”, as he called it (Syme, 2018, p.5) could be extended “... to upwards of thirty thousand...” colours and tints (id. p.11) as one qualifies each standard colour with adjectives or verbs to mix colours.



Researcher Giulia Simonini has published an excellent article on Syme and Werner's Nomenclature in which she describes the development of colour charts and the ordering and naming (*nomenclature*) of colours in the eighteenth and nineteenth centuries (Simonini, 2018).

Patrick Syme's "Werner's Nomenclature" is described as a highly successful publication, instantly well received and followed by a second edition in 1821, adding Scotch Blue and purplish red, two more colour varieties (id, p.14).

Existing copies are also still in very good condition, mostly because of Syme's background as an artist and painter; he knew how to create pigments and knew which ingredients to use and not to use. As a result the paints on the paper swatches in the books have not deteriorated much (id., p.1), although painting on paper was perceived as the least optimum manner of creating a colour chart. There were four methods:

- paint on paper (subject to decay over time);
- swatches of coloured fabric;
- creating charts using references to fruit, flowers and insects;
- creating charts with coloured porcelain tablets².

² Simonini references Breithaupt and Hoffmann (Simonini, p.22), which I quote in full (in German): "Zu den vorzüglicheren Mitteln, die Farben ohne Fossilien anschaulich zu machen, gehören: 1) Farbtafeln. Sie sind am leichtesten zu verschaffen; haben aber das Schlimme, daß sie sich leicht mit der Zeit ändern. Die erdigen halten sich noch am besten. 2) Muster zu zeugen. Tücher, Seide. 3) Gegenstände aus dem Naturreiche. Besonders Blüten und Früchte; auch Insekten. Davon hat auch das Publikum schon vor längerer Zeit Gebrauch gemacht. So zeigt z.B. die sogenannte spanische Gresse das Morgenroth, die Veilchen violblau. 4) Am besten würden dergleichen Farbtafeln von Porzellan oder den Stiften zu der Mosaik sein" (Breithaupt & Hoffmann 3-4; Karliczek & Schwarz 362-63).

Summarising: earth colours would hold best under method 1; cloth and silk would be used in method 2 (I've used wool fibres); method four - using porcelain or mosaic tiles - is the best way to create reliable colour charts.



Research methodology

1. The research project involved identifying botanical materials with which to create natural dyes for use on textiles and textile fibres such as wool - I have used a single batch of white wool fibres to create colour swatches;
2. Botanical matter and material was sourced³ close to the atelier, initially along the B866, the coastal road on the East shore of Loch Riddon or Loch Ruel in Colintrave, Scotland (see appendix 3 for a plant list);
3. The colour hues of the dyes are referenced against digitised versions of Werner's Nomenclature of Colours in combination with a facsimile reprint combining the first and second edition of Werner's Nomenclature (Syme, 1814 and 1821, and Syme, 1821);
4. Recipes to create the natural dyes are taken from Fraser (1983) and Dean (2010).

³ The Coronavirus lockdown in 2020 offered the chance to do fieldwork close to the atelier



Research output

The purpose of the research - and by extension, development - is the creation of a set of colours unique to the Orains Studio (see appendices 1 and 2).

Four colour suites have been identified.

Colintraive Yellow

Strachur Purple

Loch Green

Tool Grey

The colour suites share twenty different shades and twenty six hues between them. These are ordered using two editions of “Werner’s Nomenclature of Colours” (Syme, 1814 & Syme, 2018).⁴ The following pages present the four colour suites with their unique subset of colours (note: on the following pages where a colour is described under ‘Werner’s Nomenclature’ as e.g. “O 14 - 16 Blackish Grey [1]”, O 14 is the Orains ordering; 16 Blackish Grey is Patrick Syme’s ordering; the numeral 1 or 2 in square brackets refers to the first edition from 1814 or second edition of 1821.

The botanical material used to achieve the colours is mentioned under “Fraser” (referencing Fraser, 1983). A numbered recipe is given, followed by the page number.

Scottish Blackface x Bluefaced Leicester wool fibre is used in all dye samples

⁴ A digitised version of a copy of the first edition is available online at the Linda Hall Library in Kansas City USA (Syme, 1814). Having compared this version with a facsimile reproduction by the Natural History Museum in London (Syme, 2018) I found it necessary to compare this research output with both versions and, as there appear to be discrepancies in tonal value and hue of the colours (re-)presented, I reference a second copy of a digitised version of a second edition (although it mentions “1814” in the URL) available at Public Domain Review <https://publicdomainreview.org/collection/werner-s-nomenclature-of-colours-1814>

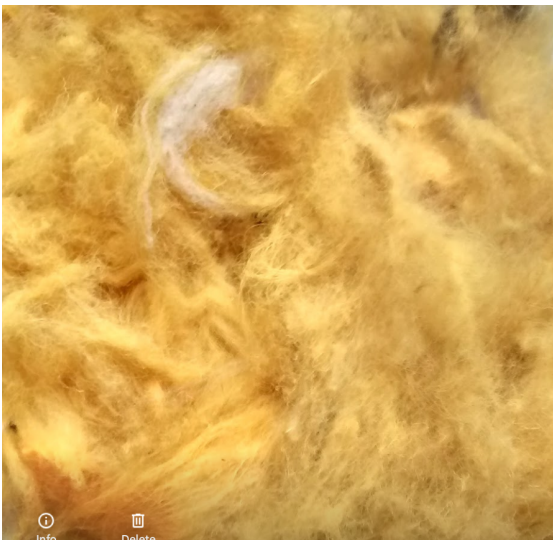


The Colours of Orains™





Orains Colintraive Yellow™



The Colour

1. Colintraive Yellow™

This coloursuite is achieved by using heather 'Kinlochruel'⁵ in combination with Bell heather flowers, picked in the fields behind the studio on the Kinlochruel estate.

2. Werner's Nomenclature

- O 01 62 Primrose Yellow [1]
- O 02 64 Lemon Yellow [1]
- O 03 67 Saffron Yellow [1] 68 Saffron Yellow [2]
- O 04 71 Straw Yellow [2]
- O 05 72 Sienna Yellow [1]
- O 06 74 Ochre Yellow [2]
- O 07 76 Dutch Orange [2]

3. Fraser

Recipe 33. Heather and recipe 34. Bell Heather (Calluna vulgaris 'Kinlochruel' in combination with Calluna vulgaris and Erica cinera); p.61 for yellow and orange and p. 62 for a slightly more reddish hue

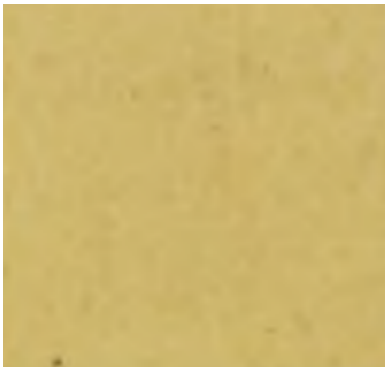
⁵ This heather was discovered by Brig. E.J. Montgomery at Kinlochruel in Colintraive see <https://www.heatherworld.org/heathers/calluna-heathers/calluna-k/kinlochruel/>



62 Primrose Yellow [1]



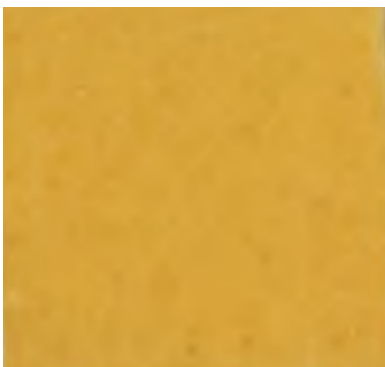
71 Straw Yellow [2]



64 Lemon Yellow [1]



72 Sienna Yellow



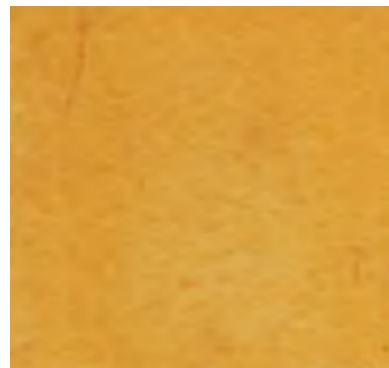
67 Saffron Yellow [1]



74 Ochre Yellow



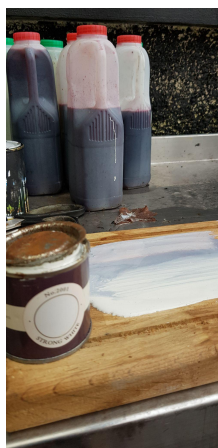
68 Saffron Yellow [2]



76 Dutch Orange [1]



Orains Strachur Purple™



Elderberry concentrate can be used as an 'ink but also in emulsion and lime paints

The Colour

1. **Strachur Purple™**

The Orains Studio was founded in Strachur in 2012 and initially all wool fibres were sourced from Succoth Farm.

Elder grows near the old studio and additional Elderberries have been sourced near Kilmory Castle⁶ (ruin) on the Isle of Bute.

The colour suite has four shades of purple with five hues.

2. **Werner's Nomenclature:**

O 08 - 87 Arterial Red [2]

O 09 - 91 Lake Red [1]

O 10 - 92 Crimson Red [1]; 93 Crimson Red [2]

O 11 - Purplish Red [2]

3. **Fraser:**

Recipe 28. Elder (*Sambucus Nigra*), p.55.

Blue & Violet Purple

Note:

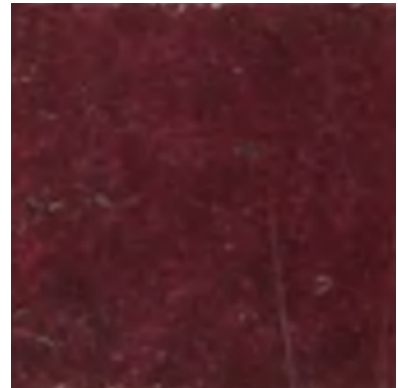
In Wild Colour (Dean, p. 131) it is suggested using an acidic modifier in combination with iron to achieve deeper purples, however the use of it "...for tapestries or wall hangings is not recommended..." because of fading under the influence of light.

I have not witnessed any fading of the sample yet.

⁶ <https://canmore.org.uk/site/40374/bute-kilmory-castle>



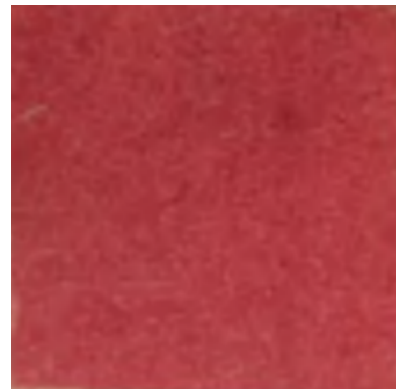
94 Purplish Red [2]



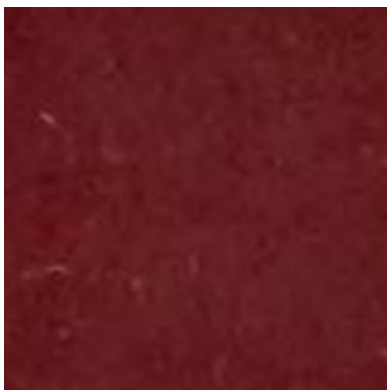
92 Crimson Red [1]



93 Crimson Red [2]



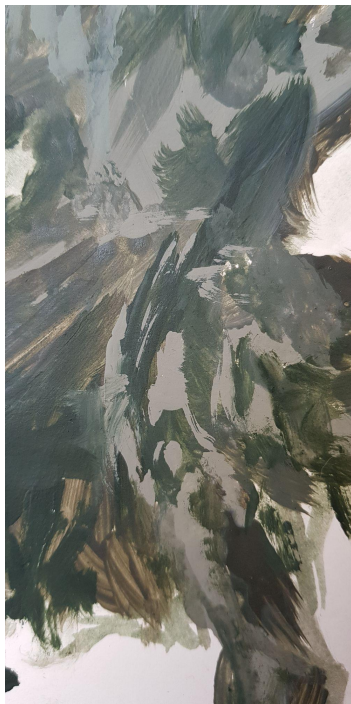
91 Lake Red [1]



87 Arterial Blood Red [2]



Orains Loch Green™



The Colour

1. Loch Green™

From 2012 to 2022 the Orains Studio overlooked Loch Riddon, a small tidal loch in Scotland. The everchanging light and ebb and flow inspired the creation of Loch Green.

The colours are achieved by using Broom overdyed with Ivy and Hawthorn bark/twigs.

The coloursuite has five shades of green with seven hues.

2. Werner's Nomenclature:

O 12 - 11 French Grey [2]

O 13 - 15 Greenish Grey [2]

O 14 - 16 Blackish Grey [1]

O 15 - 47 Leek Green [1]; 48 Leek Green [2]

O 16 - 58 Olive Green [1]; 55 Duck Green [2]

3. Fraser:

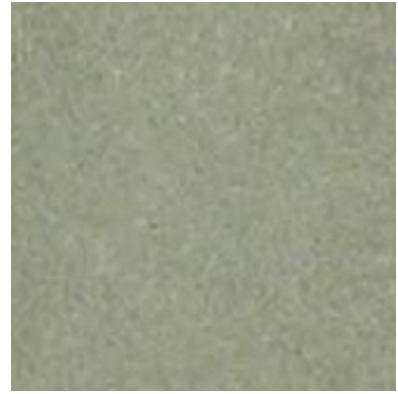
13. Broom (p.35), 37. Ivy (p.66), 32. Hawthorn (p.60)

Note:

The coloursuite is available as a set of five emulsion paints through Orains Studio



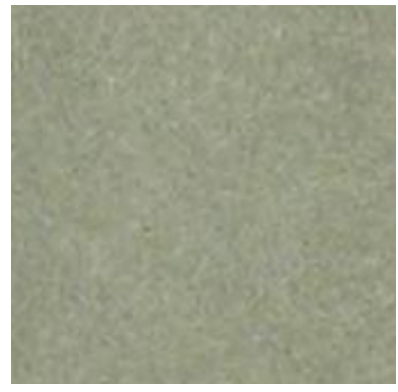
11 French Grey [2]



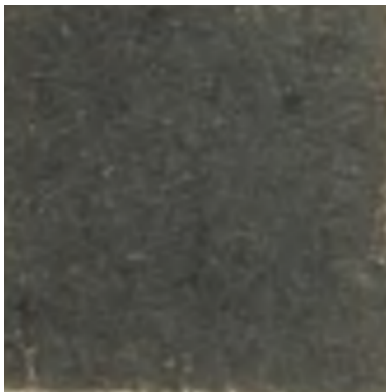
47 Leek Green [1]



15 Greenish Grey [2]



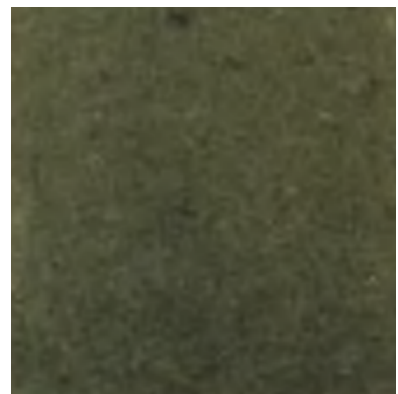
48 Leek Green [2]



16 Blackish Grey [1]



55 Duck Green [2]



58 Olive Green [1]



Orains Tool Grey™



The Colour

1. Tool Grey™

This colour has been achieved by using the flower buds and bark from *Rhododendron Ponticum*, an invasive species growing in abundance in Scotland and close to the atelier along the B866. The initial brownish colour was later modified using iron.

The coloursuite has four shades of grey with six hues.

2. Werner's Nomenclature:

O 17 - 08 Greyish White [2]

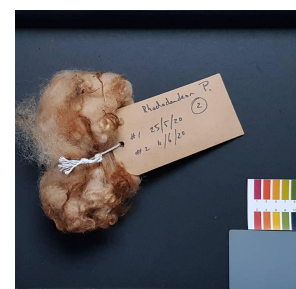
O 18 - 09 Ash Grey [2]

O 19 - 15 Greenish Grey [1] 11 French Grey [2]

O 20 - 16 Blackish Grey [1] 14 Blueish Grey [2]

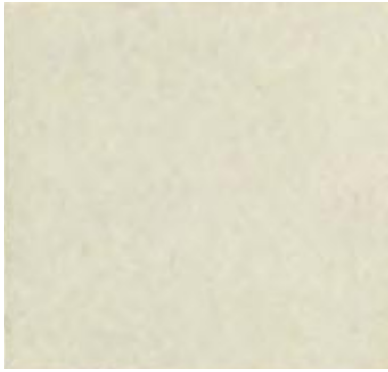
3. Fraser:

Rhododendron P. is not mentioned in Fraser.



The reference sample before adding iron

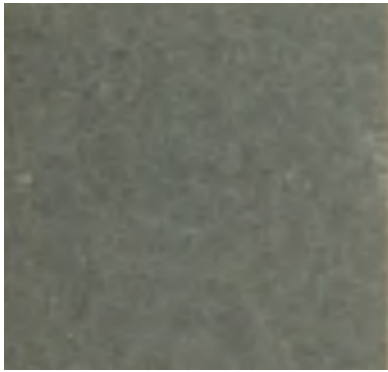
The creation of the dyed wool sample using old iron tools. A recipe for this in "The Art and Science of Natural Dyes" (Boutrup & Ellis, p.137) suggests using scraps of metal, in this case iron. In "Wild Colour" (Dean, p.59) modifying it with iron is "...called 'saddening'; however, it improves the fastness of the dyes".



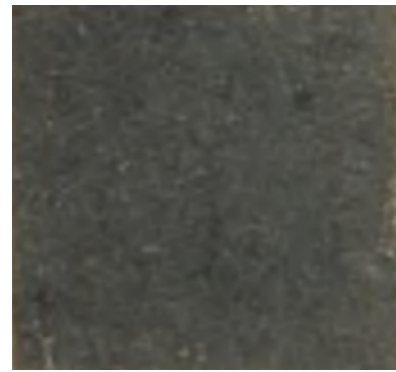
08 Greyish White [2]



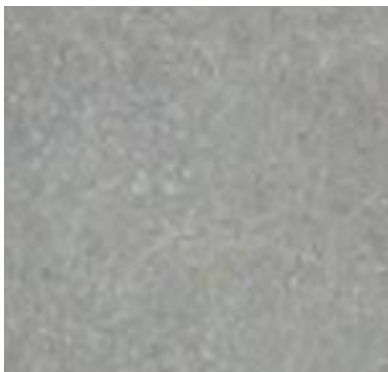
09 Ash Grey [2]



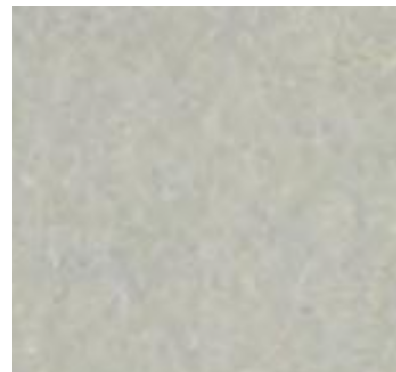
15 Greenish Grey [1]



16 Blackish Grey [1]



11 French Grey [2]



14 Blueish Grey [2]



Further notes on Rhododendron Ponticum:



Rhododendron P. grows in abundance along the B866 where the Orains Studio was located. It is a problem in West Scotland as it crowds out native flora such as the Temperate Rainforest⁷. The Woodland Trust calls it an ‘aggressive coloniser’. Apart from making charcoal from the shrub, as suggested by the National Trust⁸ as a solution when cutting Rhododendron P., creating natural dyes with it is useful.

There are about 600 different types of Rhododendron, however it is Ponticum that is harming the whole genus. “*It has given rhododendron a bad name although people in the know realise there is more to rhododendron than this one*”, said Peter Baxter, curator at Benmore Botanic Gardens / Royal Botanical Gardens Edinburgh, in an article in The Guardian (Scott, 2008). Rhododendron P. covers over 50,000 hectares in Scotland.

⁷ The Temperate Rainforest is also known as ‘Celtic’ or ‘Atlantic’ Rainforest. See for more information <https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/habitats/temperate-rainforest/>

⁸ The making of charcoal with Rhododendron P. in Northumberland at the National Trust, see <https://www.nationaltrust.org.uk/allen-banks-and-staward-gorge/features/using-rhododendron-to-make-charcoal>





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Appendices

Appendix 1.

Project Summary (Open Project Fund Application Form p.5)

The Colours of Orains

In my proposed year-long research “The Colours of Orains” I will explore the possibilities of creating a definite set of colours for Orains, using plant material from the West Coast and Highlands in Scotland only.

The creation of hand dyed fibres is an integral part of my practice, Orains Art & Design; wool fibres are dyed using plant materials sourced close to the studio and further afield.

In Orains’ latest exhibition (at the Art Space / Cass Art Glasgow, April 2019) the use of natural dyes played a prominent role: hand dyed fibres were used to create large, single pieces of hand felted wall art.

Inspiration for the colour ways comes from the natural world and from literature, among others, Werner’s Nomenclature of Colours by the Scottish flower painter Patrick Syme and Jean Fraser’s Traditional Scottish Dyes.



Appendix 2.

Outcomes (Open Project Fund Application Form p.8)

There are three outcomes: the creation of a physical natural dye collection, the production of a research paper accompanying the collection and professional development personally while focussing on the development of the brand.

1. The Colours of Orains: the primary outcome will be the production of a 'bank of colours' for Orains – colours that will be developed based on current practical and theoretical knowledge and to be acquired.

2. Research paper: being able to underpin the sourcing of the plant materials and the production of natural dyes in my own research paper will allow the practice to reference future colourways and colour schemes.

This research paper will be available to the public (PDF free of charge) and marketed through e.g. SCAN, other relevant art & design networks and journalists / press.

3. Being able to use dyes specifically developed for the practice should lift the value of the brand even more (*an example of unique plant materials for Orains grows on the studio doorstep; the heather "Kinlochruel". I will cultivate this calluna vulgaris more extensively and create "Orains Yellow" with*).



Appendix 3.

Non-exhaustive plant list from species yielding dye materials growing along the B866, the road on the East shore of Loch Riddon (or Ruel) in Colintraive; Studio Orains was located here from 2012 to 2022.

The plant list is based on ‘Traditional Scottish Dyes & how to make them’ (Fraser, 1983). Of the 75 plant, lichen and seaweed varieties mentioned in the book, 43 species have been identified as growing along the road and on the banks of the loch. The number of species is high and this is because of the unique quality of the location. It is in the ‘National Scenic Area Kyles of Bute’⁹ - one of the smaller NSA’s in Scotland - and it contains a tidal loch, Atlantic Rainforest and steep ridgeland with fields for grazing livestock in between. The geographical location in the West of Scotland also means that fresh, clean air is around all the time. This is reflected in the extensive growth of lichen¹⁰ and moss varieties on the trees of the forest and the rocks along the loch (the abundance of lichen species are an indicator of clean air).

Name	(Latin Name)	Colour yield
a. Alder	(<i>Alnus Glutinosa</i>)	Black / Brown
b. Barberry	(<i>Berberis Vulgaris</i>)	Orange / Green
c. Birch	(<i>Betula Alba</i>)	Yellow
d. Blaeberry Green	(<i>Vaccinium Myrtillus</i>)	Purple / Blue / Violet / Sage
e. Bog Bean	(<i>Menyanthes Trifoliata</i>)	Ancient Green
f. Bracken	(<i>Pteridium Aquilinum</i>)	Green / Lime Green / Yellow
g. Bramble Grey Blue	(<i>Rubus Fruticosus</i>)	Rose Pink / Blue / Purple /
h. Broom	(<i>Sarothamnus Scoparius</i>)	Yellow / Green
i. Buttercup	(<i>Ranunculus Flammula</i>)	Purple
j. Cow Parsley	(<i>Anthriscus Sylvestris</i>)	Yellowish Green / Green

⁹ A detailed description of the NSA Kyles of Bute by Nature Scot (the link will start a three-page download) <https://apps.snh.gov.uk/sitelink-api/v1/sites/9134/documents/37>

¹⁰ Although a wide variety of lichen was available, and knowing that lichen can yield very good dyeing results, it was decided not to use this type of botanical matter because of its slow growth.



k. Crottle (Lichen)	(Parmelia Saxatilis)	Orange Brown
l. Id.	(Ochrolechia Tartarea)	Purple / Red / Violet
m. Id.	(Evernia Prunastri)	Pink / Green / Yellow
n. Id.	(Lobaria Pulmonaria)	Chestnut Brown
o. id.	(Xanthoria Parietina)	Pink / Blue / Purple



Several lichen varieties on a rock in Loch Riddon

p. Dandelion	(Taraxacum Officinale)	Magenta
q. Dulse	(Rhodymenia Palmata)	Brown
r. Elder	(Sambucus Nigra)	Blue / Purple



Elder, flowering

s. Elecampane	(Inula Helenium)	Blue / Purple
t. Fir Clubmoss	(Lycopodium Selago)	Yellow / Blue
u. Foxglove	(Digitalis Purpurea)	
v. Heather	(Calluna Vulgaris)	Yellow / Orange



w. Bell Heather	(<i>Erica cinerea</i>)	Purple
x. Iris	(<i>Pseudacorus</i>)	Blue Grey / Green
y. Ivy	(<i>Hedera Helix</i>)	Greenish Grey
z. Lady's Bedstraw	(<i>Galium Verum</i>)	Crimson / Plum
aa. Marsh Marigold	(<i>Caltha Palustris</i>)	Yellow
bb. Nettles	(<i>Urtica</i>)	Yellow / Grey Green
cc. Oak	(<i>Quercus</i>)	Brown / Black
dd. Ragwort	(<i>Senecio Jacobaea</i>)	Bronze
ee. Reed	(<i>Phragmites Communis</i>)	Green
ff. Rowan	(<i>Sorbus</i>)	brightens colours
gg. Rush	(<i>Eleocharis palustris</i>)	Green
hh. Sea Ivory	(<i>Ramalina Scopulorum</i>)	Orange Brown
ii. Sorrel	(<i>Rumex Acetosa</i>)	Red
jj. Tansy	(<i>Tanacetum Vulgare</i>)	Bronze / Yellow
kk. Thistle	(<i>Cirsium Vulgare</i>)	Emerald Green
ll. Tormentil	(<i>Potentilla Erecta</i>)	Red
mm. Whin / Gorse	(<i>Ulex Europaeus</i>)	Yellow / Gold / Green
nn. Wild Cherry / Gean	(<i>Prunus Avium</i>)	Purplish Red
oo. Wild Hyacinth	(<i>Endymion non Scriptus</i>)	Red (?) ¹¹
pp. Willow	(<i>Salix atrocinerea</i>)	Cinnamon / Flesh
qq. Yarrow	(<i>Achillea Millefolium</i>)	Yellow / Gold

¹¹ Wild Hyacinth or Bluebell: Fraser mentions the Celtic Magazine from 1883 saying "...Wild Hyacinth as giving a red dye..." but no recipe is given (p.100)