



Earth Pigments in North Devon A Guide for Teachers & Artists

by Peter Ward
(in association with Beaford Arts)

www.peterward-artist-illustrator.co.uk



north devon landscape (ground earth pigments; peter ward 2009)

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Since the human race began to make marks and symbols to express our relationship with our world we have been using pigments from the earth. Whether painting on cave walls or our bodies we have found ways of making colours from things found in our immediate surroundings. From minerals and plant dyes, animal parts and more complicated processes we have explored and discovered ways to bring colour to our world.

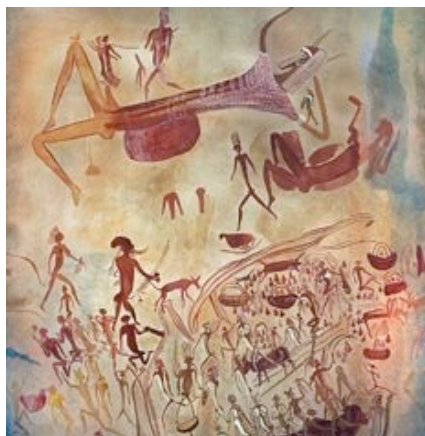
In North Devon, due to the rich geological formations in the area dating back over 350 million years, we have a good range of accessible natural mineral colours to use. Until 1969 we mined and manufactured our own pigment, Bideford Black. Formed in lens shaped pockets of high-grade graphite coal between Abbotsham and Tawstock, Bideford Black is a unique pigment in the British Isles. It was used as a black paint for caulking timber boats, for artists paints, printing inks, colouring paper, stove polishes and blacking, cement products, bricks, floor tiles and linoleum, tarpaulins, rubber tyres, for camouflage paint during WWII and by Max Factor for mascara. There is little physical evidence left of the industry but we may still find the raw material locally.

On a small cliff on the River Taw estuary near Fremington Quay we can find at least four distinct colours to collect: Yellow Ochre, Burnt Umber, White Clay and Grey, or 'Poor Man's Coal' (a form of Bideford Black). At Peppercombe cliffs near Clovelly we find a rich red sandstone or Burnt Sienna coloured by iron oxide. This rock is the same as we find in South Devon and near Crediton, and was formed 200 million years ago when the area was situated on the Equator, what is now the Sahara Desert! The River Umber running through Combe Martin was apparently named after the Umber pigment (iron oxide) that was mined there. Also in North Devon we may find a large variety of grays, browns and reds and even a green from malachite (copper carbonate) at the old iron and copper mines at Heasley Mill near North Molton.

With a little effort and some local knowledge, we are still able to make our own paints gaining insights into the history of painting and the industrial and geological history of our area, while deepening our connection with our environment and appreciating the use of earth pigments by different cultures from around the world.

Painting with the Earth...

Here are some examples of how cultures around the world have used earth pigments. The cave paintings of Lascaux in Southern France date from 10000 BC and represent the animals that were important to the hunter-gatherers who painted them. Similarly the more contemporary paintings by Aboriginal Australians and from caves in Zimbabwe represent aspects of their cultural environment.



(from L-R, top to bottom; Cave painting, Lascaux, France, ca. 15000-10000 BC; Bushman Cave Painting, Zimbabwe; Australian Aborigine Paintings, Uta Uta Tjangala Medicine Story 1971, earth pigments on plywood; Australian Aborigine Cave Painting, Kimberley, ca. 5000yrs old; Naata Nungurray, Marrapinti, earth pigments on linen, 2002.)

Making Paint...

By simply drying and crushing the raw materials we have a starting point for making paint. The powders produced may be mixed with water, linseed oil, PVA, egg yolk or other commercially available mediums to produce paint. Some of the more clay-like materials may be moulded into pastels, others drawn with directly. Through experimentation we may find out which raw materials work best to produce a desired paint or effect. We can spend time examining their consistency, their lustre and graininess and their behaviour on different surfaces. The phenomenal age of the pigments can only be proof of their permanence and light fastness. But please remember when collecting pigments to always think about the amount of raw material that is available to use and the visible and structural damage that may occur due to your 'mining' activities.



(from top and left to right: 'Playing with paint', Appledore Visual Arts Festival, 2008; 'Mining' for Bideford Black, Abbotsham; 'Making Paint' on the beach, Fremington Quay; Painting with the Earth Workshop, Beaford 2008)

Mining and Industry in North Devon...

In the 17th-19th centuries, apart from being a busy agricultural centre, North Devon was heavily mined for both iron and copper on Exmoor with strong links to South Wales for supplies of both coal and lime. China clay was mined at Peters Marland and Meeth and transported by railway to Fremington Quay where it was distributed all over the world. There were further clay pits in Fremington supplying the local Brannam and Fishleigh Potteries.

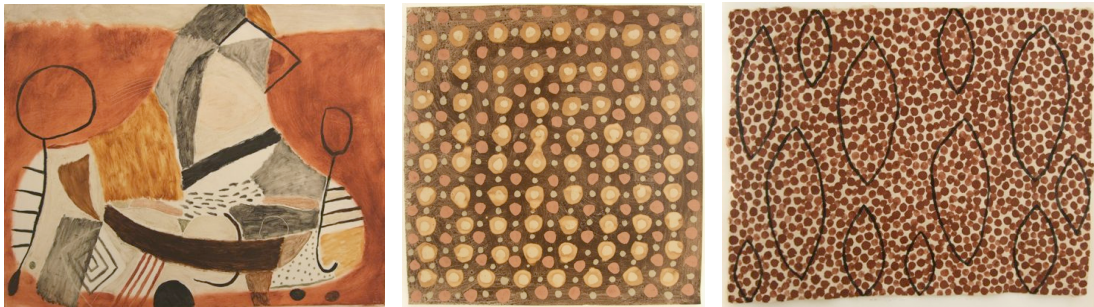
The area had its own small-scale coal seams running from Abbotsham inland to Umberleigh on the Taw Valley. The Devon coal, a slow burning anthracite, was mined on a small scale for use in making quick lime in the many lime kilns attached to farming estates. Running alongside the anthracite is a black clay which was mined for 200 years in Bideford for its uses as a strong black pigment. The unique 'Mineral Black' or 'Biddiblack' as it was known was commercially produced for applications in the boat building industry as a lagging for wooden boats, was used extensively in WWII for camouflage on tanks and was even bought by Max Factor for the production of mascara. The mines were closed in 1969 when the production of cheaper artificial blacks made the operation financially unviable, but many locals still remember the 'Treacle Mines' and have tales to tell of using the paint or going into the now defunct mine shafts.



(From top and l-r: Working the clay pits at Peters Marland; 'The Treacle Mines', East-the-Water; Quarrying near Chulmleigh. Images from North Devon Archives.)

Modern Earth – The Contemporary Artwork of Peter Ward...

'The use of locally discovered pigments has brought my artwork intimately in touch with the idea of 'artistic process'; from gathering the materials and mixing and creating my own paints, to producing images alive with the deep resonance of the natural world. In response to the materials, the imagery reflects the world on a molecular, energetic level. The work explores the spiritual and visual implications of quantum theory, drawing parallels with the imagery and intentions of earth based aboriginal cultures from across the world. By placing such imagery within a contemporary setting we may put present times into perspective and remind ourselves of the beauty of our material planet.' *Peter Ward, 2009.*



(from top and L to R: nurture (earth pigments & linseed oil on board; 61x48cm; 2008); potential II (earth pigments + pva on paper; 56x56cm; 2009); sea of souls II (earth pigments + pva on hand made laos paper; 103x79cm; 2009); endless variation (earth pigments + pva on canvas; 77x47cm; 2009); union flag (earth pigments + pva on canvas; 26x26cm; 2009) All images © Peter Ward 2010)

EARTH PIGMENTS IN NORTH DEVON, APPENDIX I



BURNT UMBER

Quaternary, possible glacial deposits, 400,000 years old
Manganese oxide
Fremington Quay; Grid Ref: SS 511331



BURNT SIENNA

Permian, 280 million years old
Iron oxide, formed as sandstone and conglomerate when land mass was over the equator, retained along fault line
Peppercombe Cliffs; Grid Ref: SS 385246



YELLOW OCHRE

Quaternary, possible glacial deposits, 400,000 years old
Manganese oxide
Fremington Quay; Grid Ref: SS 511331



WHITE CLAY

Quaternary, possible glacial deposits, 400,000 years old
Kaolin/Granite run-off (?)
Fremington Quay; Grid Ref: SS 511331



'POOR MAN'S GRAY'

Carboniferous, 350 million years old
Manganese based mudstone
With traces of Iron Sulphide (FeS_2)
Fremington Quay; Grid Ref: SS 511331



'BIDEFORD BLACK'

Carboniferous, 350 million years old
>80% carbon, semi graphite coal measure
Mined in Bideford as a pigment until 1969
Greencliff, Abbotsham; Grid Ref: SS 406273

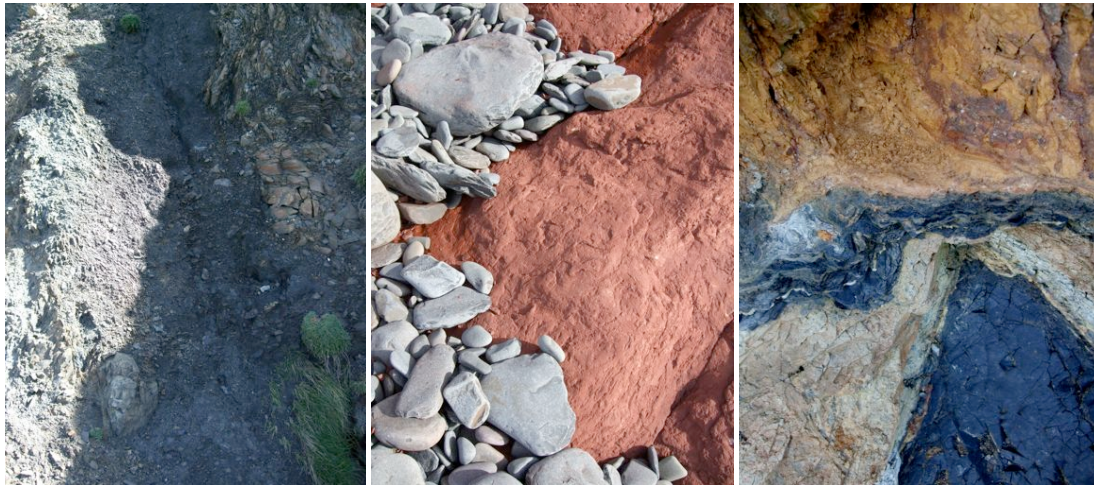
Shown above is a selection of the bolder earth pigment colours available in North Devon, with OS Grid References of where they may be found. All colours are non-toxic and light permanent. Please collect these finite natural resources responsibly.

EARTH PIGMENTS IN NORTH DEVON, APPENDIX II

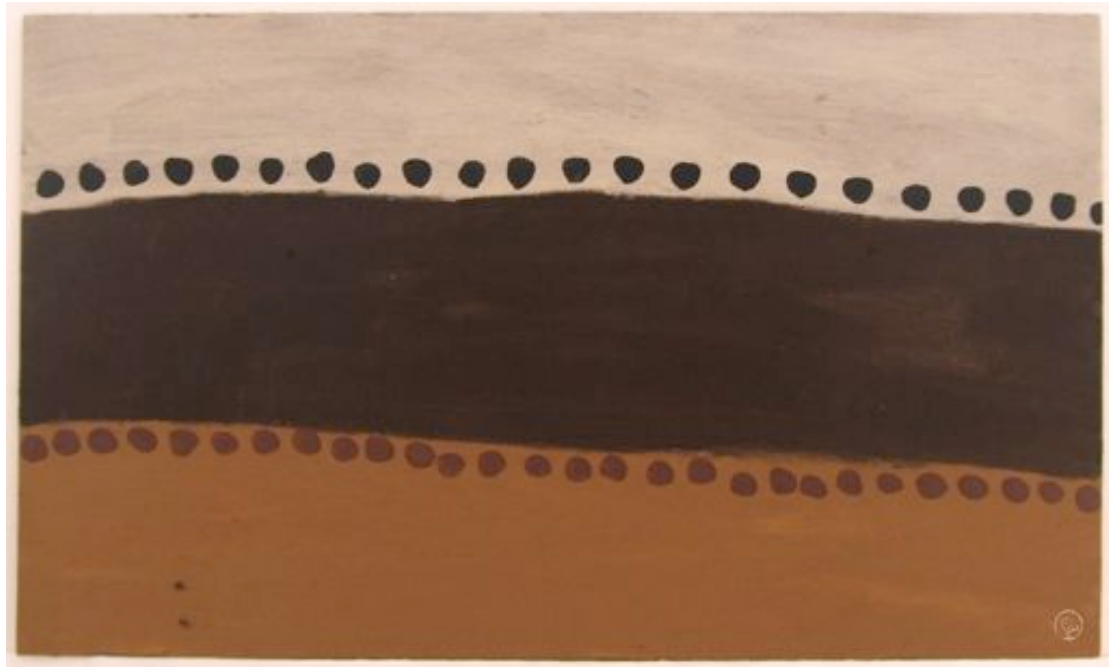
BIBLIOGRAPHY

Listed below is a selection of books that have been useful researching earth pigments and their historical implications in North Devon, their uses and geological formation.

1. COLOUR by Victoria Finlay, published by SCEPTRE
2. BRIGHT EARTH, The Invention of Colour by Phillip Ball, published by VINTAGE
3. THE PAINTER'S HANDBOOK by Mark David Gottsegen, published by WATSON-GUPTILL PUBLICATIONS
4. ARTIST'S MATERIALS by Emma Pearce, published by ARCTURUS
5. EXMOOR'S INDUSTRIAL ARCHAEOLOGY Edited by Michael Atkinson, published by EXMOOR BOOKS
6. BIDEFORD BLACK, THE HISTORY OF A UNIQUE LOCAL INDUSTRY, written and published by SOUND ARCHIVES NORTH DEVON
7. ABORIGINAL ART by Wally Caruana, Published by THAMES AND HUDSON



(l-r: BIDEFORD BLACK, Abbotsham; PEPPERCOMBE CLIFFS; FREMINGTON QUAY)



river (earth pigments + pva on driftwood; 57x34cm; 2009)

ACKNOWLEDGEMENTS

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An account of the project may be seen in the March/April 2009 (no.253) issue of Resurgence Magazine available from www.resurgence.org.

Peter Ward, 2010.





www.peterward-artist-illustrator.co.uk
07876 733720