

Soil Walk, July 13th 2016

I first heard about the soil walk from Harry Barrat, who I met at the launch of the Granite Elements project in March. Harry was on a placement at Yarnier Wood as part of his Environmental Earth Science degree course at Plymouth University. He began to tell me, with great enthusiasm, about his plan for a walk to look at different types of soil and their relationship with the landscape. Later he visited me and told me more; perhaps as an artist I could have some input into the project. At his recommendation I went to a fascinating exhibition in Plymouth, 'Soil Culture', of art related to the soil. This kind of link between art and science is, like the soil itself, fertile and full of potential.

Harry told me about three main types of soil we would look at on the walk: the moorland peat, woodland soil with leaf mould, and sandy, gravelly river bank. I remarked that the dark, peaty soil on the moor reminded me of chocolate brownies. Later the idea came to me: I could make these, and other cakes to represent the other soil types, and bring them to share on the walk. I had to do some experimenting with recipes; family and friends did not complain.

So on July 13th my husband Chris and I arrived, with cakes, at Haytor car park to meet Harry and the other walkers, a good-sized group of about 16, with boots and waterproofs. It was a cool, breezy day, but we only had a few spots of rain. The walk was led by soil scientist Rob Parkinson, who carried a spade with which to slice through the soil and show us a profile at various points on the walk; we were also encouraged to feel the soil's texture. Rob showed us a book of graded colour samples, like an up-market paint chart, which enables scientists to describe the colour of different soils accurately. It also interested me as an artist; earth pigments have been used by painters since the stone age. I like these subtle reds, yellows, browns and greys, ranging in tone from very pale to almost black, the colour of the peat we first looked at while sharing the chocolate brownies.

I and others in the group already knew something about different soil types from gardening. Rob talked about the importance of the moorland peat, holding water and releasing it gradually, and supporting acid-loving plants which contribute to the special character of the granite landscape. It is sad to think that this non-renewable resource is being used by gardeners to beautify their small patches, while spoiling the wider environment. I haven't had much success with peat-free compost, so decided in future to try to rely on home-made.

The peat is largely organic, but further on we looked at another sample whose lighter colour and grittier texture indicated more mineral content. I began to see how the soil is a vital part of the landscape, linking the underlying rocks with the plant and animal life above in its mix of mineral and organic matter. Our next stop was at Black Hill where Rob explained that we were leaving the granite and moving onto an area of chert and slate. We stopped at a small quarry where we could see layers of

sedimentary rock, much older than the granite. The soil was light brown, with the heather clinging to a thin organic layer on top. We were about to enter Yarner Wood, so this seemed a good place to cut up and pass round the fruit cake I'd made to represent the woodland soil, topped with dead leaves (cornflakes) and hazelnuts. It quickly disappeared.

Standing under tall trees in the wood, Rob pointed out that the biomass underground was equal to what we could see above it. The broken roots we see on a fallen tree show us little of this huge hidden network beneath our feet; the image stuck in my mind. Rob also talked about the vast numbers of living creatures, invertebrates and micro-organisms found in the soil. Further downhill in the wood, higher ground at the side of the path revealed a section through the ground, showing dark topsoil over paler, greyish subsoil. There are four distinct soil types in Yarner Wood, one of which is unique in Britain.

At the end of the walk we passed round the shortbread topped with chopped nuts which I'd made to represent the sandy, gravelly soil of the river banks. We hadn't got as far as the river today; that would need a full day walk with a stop for lunch. Something to look forward to for a future occasion.

Clare Benson

CAKE RECIPES

CHOCOLATE BROWNIES (MOORLAND PEAT)

110g (4oz) butter

50g (2oz) dark chocolate

2 eggs

170g (6oz) granulated sugar

50g (2oz) cocoa

50g (2oz) plain flour 1 teaspoon baking powder

Pre-heat oven to 180 C (gas 4)

Baking tin 18 x 28 cm (7 x 11 ins.) greased and lined with baking paper

Melt butter and chocolate in a double saucepan, or in a bowl over simmering water on a low heat. When melted remove from heat and stir in the other ingredients, then spread in the lined tin.

Bake for 30 minutes, until mixture begins to shrink away from sides of tin, and centre feels springy.

Leave to cool in tin for 10 minutes, then cut into approx. 15 squares, and lift out on the paper to finish cooling on a rack.

FRUIT CAKE (WOODLAND SOIL)

110g (4oz) plain flour

Topping

110g (4oz) wholemeal flour

1 ½ teaspoons baking powder

10g (½ oz) butter

1 teaspoon mixed spice

1 dessert spoon soft light brown sugar

170g (6oz) soft light brown sugar

25g (1oz) cornflakes

200g (7oz) mixed dried fruit

10g (½ oz) hazelnuts

90g (3oz) walnut pieces

70g (2 ½ oz) butter

60ml (2 fl. oz) milk

2 eggs

1 tablespoon plain yoghurt

Pre-heat oven to 160 C (gas 3)

Grease a round cake tin 18cm (7in) diameter, and line with a paper liner or baking paper.

Mix flours, baking powder and sugar in a large mixing bowl. Stir in dried fruit and walnuts.

Melt butter in a small pan. Add milk, then mix gently into dry ingredients. Stir in beaten eggs and yoghurt. Put mixture in lined cake tin, and smooth top level.

To make the leafy topping, melt butter, and stir in the sugar, cornflakes and hazelnuts. Spread the mixture over the top of the cake, pressing it in slightly.

Bake for about 1 ½ hours, until a knife poked into the centre comes out clean.

SHORTBREAD (RIVER BANK)

150g (5oz) plain flour

25g (1oz) ground rice or rice flour

25g (1oz) caster sugar

25g (1oz) demerara sugar, plus extra for topping

125g (4oz) butter

40g (1 ½ oz) chopped mixed nuts

Mix flour, ground rice and sugar in a bowl. Take butter straight from the fridge, and grate into the dry ingredients, then rub in with fingertips until the mixture resembles fine breadcrumbs.

Press mixture firmly into a greased 18cm (7in) diameter sandwich tin. Sprinkle top with chopped nuts, and a little demerara sugar, and press into surface. Cut through with a sharp knife into 8 pieces. Cover with a circle of greaseproof paper, and refrigerate for 1 hour before baking.

Bake at 150 C (gas 2) for 1 hour; remove the greaseproof paper for the last 15 minutes of baking time. Cool in the tin, then break into pieces when cold.