

## Soils

Unless you're involved in the daily toil  
Of tending the fields, or ploughing the soil  
You probably think that this top layer is just  
A wetter, damper version of dust.

But actually soils are unusually vast  
Their present status linked to their past.  
All soils begin with a rock at their base  
But weathering slowly begins to deface  
Their seemingly timeless resistant state  
As they slowly crumble, unaware of their fate.

Regolith is a rock that has gradually shattered  
But how on earth can this really matter?  
It helps to determine if the soil will be  
Sandy, or silty, or clay, or all three.

How on earth must this soil feel?  
I don't mean its feelings – come on now, get real!  
I mean how it feels to hold in the hand  
The gritty texture of coarse, bitty sand.  
And this texture, (which is crucial of course)  
Determines the size and shape of the pores.  
These pore spaces – big, medium, small  
Determine if water will drain there at all.

With macro the large gaps allow all the water  
To drain away freely – more than it ought to.  
Macropores - there's surely no doubt,  
Can lead to big problems, such as a drought.  
But micropores, it really does seem,  
Can lead to problems of different extremes.  
The tiny, teeny pores are no good,  
With waterlogging, or even a flood.  
Mesopores are a mix of the two  
They drain fairly freely, but keep moisture too.

But this bottom-up approach to soils is too skewed,  
So I'll take my chance now, in this brief interlude,  
To tell the story of how leaves die and then fall  
From the soil's vegetation, be it short, fat or tall.

As leaf litter lands in its annual quota  
It's seized upon and shifted by the soil's own biota  
They grab it and twist it and move it down slowly  
To places more needy, layers more lowly.

And although the soil appears quite innate,  
Life in the brown stuff lies there in wait  
The soil is a shifting, dancing thing  
Without it we're doomed – its where all life begins

But before I totally lose my way,  
There are important things I still need to say.  
Soils themselves are of so many types  
That they haven't a problem living up to the hype.  
There's brown earths which farmers want most of all  
Where crops can find moisture and they root to grow tall.  
The podsol is washed out, that grey look we love  
Through extensive leaching carried out from above.  
The gley is peculiar in a different sense  
Often much thicker, spectacularly dense  
It can go without air for what seems like forever  
Its bluey-grey hue with no oxygen (never!).

So the next time you see a child grabbing muck  
Tell him (but first, you might want to duck)  
That the thing he is holding is special and pure  
And holds an unusual, unique allure.  
And if he still throws it and thinks that you're mad  
A geography boffin, and hopelessly sad  
Then send him to me and I'll teach him to show  
Some respect for this mucky matter we hoe.

M F Cowan, 2007