Tree Warden Report

I am making an enquiry this quarter into soil health. Not quite trees or agriculture but the importance of what they grow in.

Early September I attended a Soil  and Sustainability Seminar run by the British Soil Science Society . Ahead of both the UN COP 26 In Glasgow in November and the UN Food Systems Summit in New York in September, the Society wished to  push the subject of Soil Health to the front of the discussion. Apparently, whilst lots is being said about issues we read in the papers very day such as Climate Change, Food Supply issues, Tree Planting, Rewilding, Regenerative Agriculture,  Deforestation, Drought, Increased  atmospheric CO2 , synthetic organic chemicals, nitrogen increases  and microplastics ( all very salient issues) virtually nothing is being focused on Soil and it’s health and the fundamental part it plays in ALL of the aforementioned.

Soil health is the basis of the health of everything else. In the key note  lecture by the amazingly gifted  Prof Rattan Lal he illustrated

Soil Health=Plant Health=Animal Health=Human Health=Environment Health=Plant health .  Prof Lal says this  idea is not new and has been around since at least the 1900’s featuring in the work of renown organic farmers, Sir Albert Howard, Emily Balfour, L Kolisko, D Hills  and many others. It was a worry then and is a worry now. It amazes me that what is in those early papers about soil degradation is the same that we are hearing today just now with more detailed scientific analysis than was possible then to back it up.   That is ALL life depends on the soil. Focus must be on restoration to health of degraded, polluted and contaminated soils around the world.  Obviously , Prof Lal went into much detail as to what needs to happen on a global basis to achieve this but in a nutshell his idea was that globally we need to produce more from less land and give much land back to nature.

Other speakers focused on the organic material of ours soils. Organic matter adds to soil fertility and soil health by stimulating the physical, chemical and biological properties of soil. Organic matter being anything living or once living , already in or added to soils. All organic matter contains carbon, nitrogen, phosphorous, sulphur, potassium , magnesium and calcium as well as an array of micronutrients such as copper and zinc.    Good Soils require to be fed regularly with plant and organic inputs , they need an optimum pH, correct nutrients in the right amounts at the right time.  Soils should be moved only when necessary and support a diversity of plant life both in space and time. The texture and workability of soil should be considered along with the underlying geology and geomorphology to understand the mineral inputs from the geology and optimise water balance and drainage.

Another speaker Mathias Rillig investigated the ways in which various individual pressures on soils, whilst not having a great effect on their own did have a dramatic cumulative effect. He studied ten different mildly negative stressors affecting soils in different combinations and found that the more factors added in the greater the detrimental effect- leading to what he called a the Tipping Point . For instance, he looked at the effects of drought, nitrogen deposition, micro plastics, glyphosate use, antibiotics, copper, salinity and insecticide use (all in mild ways in the lab). The more of these factors applied to a control soil the greater the detrimental effect on the soil. This was true for water repellency, decomposition rates, respiration rates and fungal diversity. He said the results were a surprise and needed to be replicated out in the field

to confirm. This to me makes sense as this all points to resilience of the soils being akin to our own resilience when given too many stress factors.  Restoration of soils is a global issue as well as a local one. Even when it is not a local one it is still a global one as we really are all in it together. When Prof Lal was asked on a global basis where he would start he said he would reforest the Lower Himalayas from Afghanistan to Cambodia .

A quick word on the tree front. Many of our trees are suffering from the lack of water. Newly planted trees would have needed watering and even two year old trees may need watering, even on clay soils, if the

 lack of rain continues.  Autumn appears to have come early with fruit, albeit smaller in size, in abundance.   Now is the time to start collecting seeds from trees and look out for saplings than can be transplanted later in the year.