

DAILY BREAD

“Grain of Hope : Slice of Heaven”

ELONGATION

In its first months, the wheat plant puts a lot of effort into establishing a firm grounding – roots for anchoring, leaves for feeding itself and tillers for stability. Then comes a fast and busy time when the incipient head is developing deep inside and the stem puts on a rapid growth spurt.

Plant stems are modular. They consist of nodes, the hubs from which leaves and other organs grow, and internodes, the in-between transport networks. It's important for the wheat plant to get its head(s) above the crowd. The breeze up there will help with pollination, and there is less chance of infection by fungal spores. So the internodes near the top of the stems, especially the topmost one, the peduncle, stretch out, lifting the developing ear into the sun and wind.

There are parallels with the long, long (at least 12,000 years) history of human-wheat co-domestication. There are several significant 'nodes' marking the relationship. In the early hundreds or thousands of years (the jury is still out) in the Fertile Crescent, plants and humans got accommodated to each other, each giving up freedoms for greater security. Humans began settling down to tend their fields. Some strains of wild emmer and einkorn thrived by leaning on humans for seed dispersal.

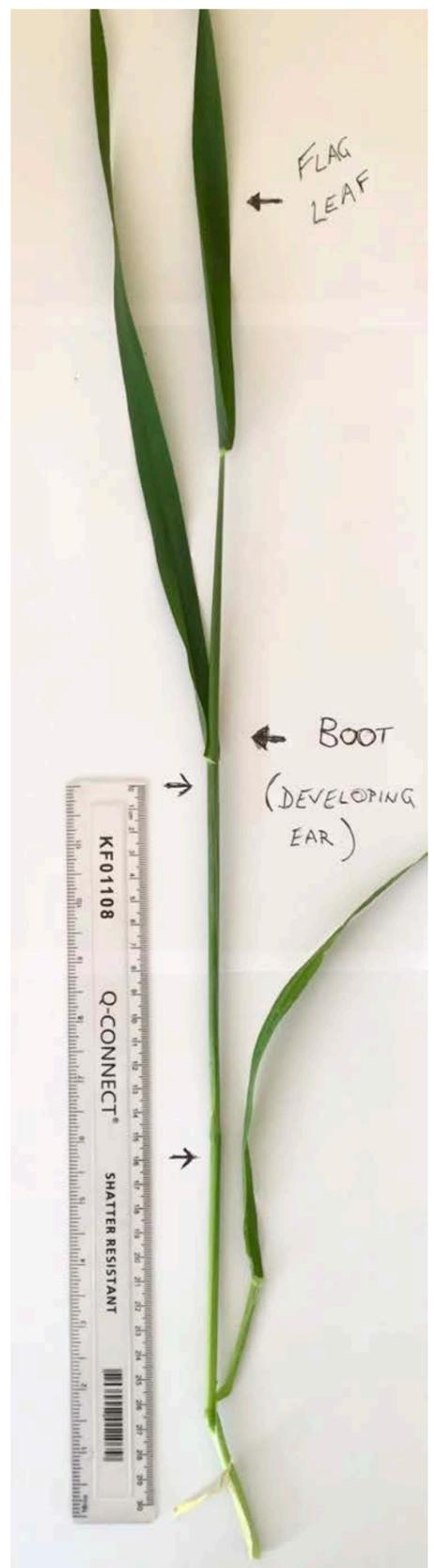
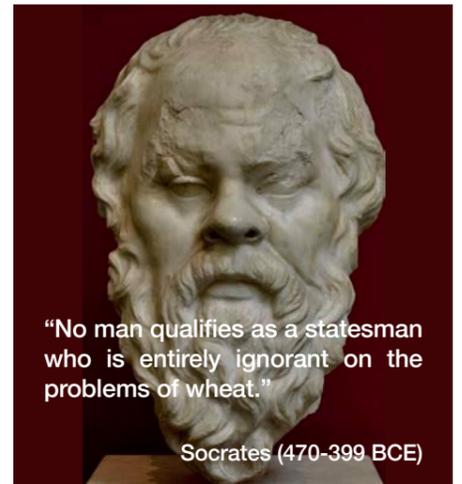


An early Egyptian (1189-1077 BCE) tomb-painting depicting a couple harvesting wheat (or possibly barley.)

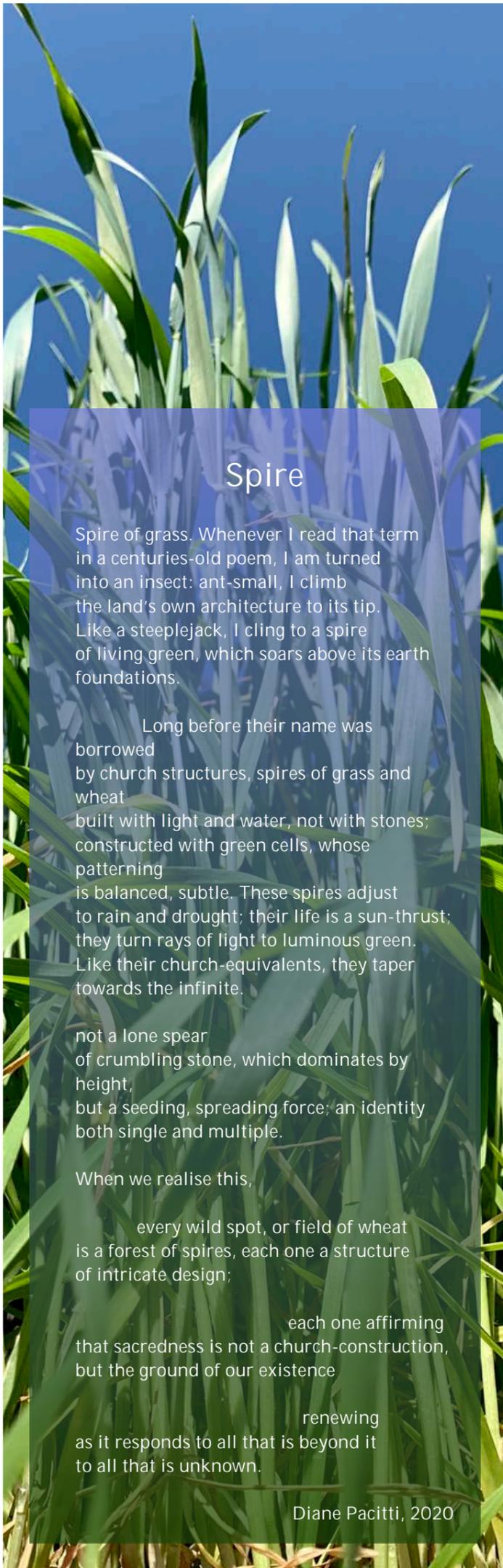
Around 6400 BCE hexaploid 'wheat' appeared – with six copies of genetic material in every cell as opposed to the usual two. This probably occurred through random mutation but humans were quick to capitalise on these new vigorous strains, and history began to speed up. Modern wheat, *Triticum aestivum*, with enough gluten to make bread with yeast made its appearance around 1350 BCE.

Modern wheat breeding began in the 19th century, in parallel with Mendelian genetics, the revolutionary discovery that 'factors' (genes) correlated with characteristics and could be manipulated. This led to an explosion in the number of varieties - upwards of 25,000 - grown worldwide.

As climate change accelerates and food security is threatened, research by the International Centre for Agricultural Research in the Dry Areas becomes ever more critical. ICARDA is now located across many countries, having been forced from its Syrian base.



Above. Deborah's wheat showing a tiller shoot with a **boot** swelling on Day 72. The boot contains the developing wheat head inside the flag-leaf. More next time!



Spire

Spire of grass. Whenever I read that term in a centuries-old poem, I am turned into an insect: ant-small, I climb the land's own architecture to its tip. Like a steeplejack, I cling to a spire of living green, which soars above its earth foundations.

Long before their name was borrowed by church structures, spires of grass and wheat built with light and water, not with stones; constructed with green cells, whose patterning is balanced, subtle. These spires adjust to rain and drought; their life is a sun-thrust; they turn rays of light to luminous green. Like their church-equivalents, they taper towards the infinite.

not a lone spear of crumbling stone, which dominates by height, but a seeding, spreading force; an identity both single and multiple.

When we realise this,

every wild spot, or field of wheat is a forest of spires, each one a structure of intricate design;

each one affirming that sacredness is not a church-construction, but the ground of our existence

renewing as it responds to all that is beyond it to all that is unknown.

Diane Pacitti, 2020

