

It is quite worth while to know something of the nature of the country in which we may happen to live; to learn, for instance, whether the soil is gravel, chalk, clay or sand. I am often surprised to find young people unable to answer an elementary question upon this point, because they have never given any thought to the subject.

In some places it is easy to see at a glance of what the soil consists, every hedgebank displaying either clay, stones or chalk, as the case may be.

Other places, especially on level ground, grassfields and arable land, do not reveal much about the nature of the subsoil.

Railway cuttings, gravel pits and excavations are aids to a knowledge of the soil which lies beneath the surface, and clay has an unpleasant way of insisting upon making itself observed in the miry footpaths which make our walks so tiring in the winter months.

These remarks may set some students thinking upon the simple problems of geology, to which I hope to return in next month's ramble.

#### WILD TEASEL (*Dipsacus Sylvestris*).

If my readers can find a specimen of wild teasel growing in some hedge-bank they will, I think, be interested to hear a little about its structure and uses.

It is a striking-looking plant growing from

sheaths at the base of its leaves, which contain water both to nourish and protect the flowers in a similar manner.

I have not met with the smaller species called Fuller's teasel (*Dipsacus Fullonum*). It is cultivated in some parts of England and very extensively abroad in France, Austria, and other parts of Europe.

I read in the *Treasury of Botany* that in 1859 we imported from France nearly nineteen million teasel-heads, valued at five shillings a thousand.

The bristly seed-vessels are employed by manufacturers to raise the nap of cloth. The capsule consists of very sharp elastic points hooked at the end, and when rows of these spiky balls are affixed to a small wooden frame they form a kind of currycomb, which when drawn over the surface of woollen cloth raises up a soft nap.

The process has been imitated by machinery, but the Fuller's teasel is, I believe, still extensively used.

The poet Dyer alludes to this useful plant.

"Soon the clothier's shears  
And burler's thistle skims the surface sheen."

A burler is a man who pulls out the "burls," or small knotted lumps in wool or thread.

One other characteristic of the teasel is worthy of remark. The bristly flowerhead expands its florets irregularly. First a band of pale lilac will appear about the middle; when that withers a row of florets above and then one below will expand, but never can we find the handsome flower-head all expanded at once. It cautiously opens a little at a time until the insects have done their work and all the florets have been fertilised.

#### WILD SUCCORY (*Cichorium Tutybus*).

Some plants seem to have a strong preference for dry, dusty roadsides and footpaths. The plantain, for instance, never flourishes more vigorously than on a well-trodden path, and the wild succory is another plant so associated with roadsides that the Germans call it "keeper of the ways."

When growing wild, succory presents little beauty in its leafage; its stiff, wiry stems spring up out of the hard chalky soil which it prefers

and into which it sends down a long tap-root in order to collect all possible nutriment and moisture. Even its lovely sky-blue flowers have a tantalising way of growing without stalks, one here and one there,



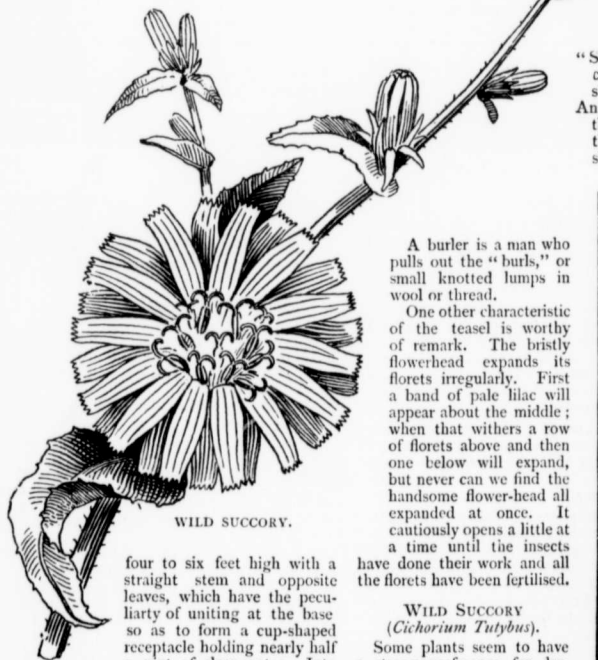
DRAGON-FLY PUPA. (Natural size.)

scattered along the stem, so that we cannot form a bouquet of them; and almost as soon as they are gathered they close up before we have time to admire their beauty. They need not, however, be thrown away, for they will expand again in water if placed in sunlight.

Succory takes its place among the flowers included by Linnaeus in his floral clock, formed of such plants as opened and closed their blossoms at certain hours of the day. It is an early riser, and greets the morning sun with its star-like flowers between four and five o'clock.

"On upland slopes the shepherds mark  
The hour when, as the dial true,  
Chicorium to the towering lark  
Lifts her soft eyes serenely blue."

As if to make up for this early blossoming



WILD SUCCORY.

four to six feet high with a straight stem and opposite leaves, which have the peculiarity of uniting at the base so as to form a cup-shaped receptacle holding nearly half a pint of clear water. Into this liquid, small insects fall and become decayed; the wind also blows dust and dead leaves into the water, so that in time it becomes rich in organic matter. This is absorbed by the plant and tends to nourish and strengthen its growth.

These leaf-basins also serve another purpose. It is necessary that the flowers should be fertilised only by winged insects, and there seems little doubt, but that the water retained at the base of the leaves tends to isolate the central stem, and thus snails, slugs, and ants are prevented from crawling up to the flowers.

The common cow parsnip has huge inflated



DYTISCUS MARGINALIS AND LARVA. (Natural size.)