

When an insect comes to a flower in this condition, after having perhaps visited a younger blossom, from



Fig. 6. Style divided.

which pollen was taken up, some pollen will, without doubt, be rubbed off against the exposed stigmas, which become somewhat sticky at this stage, through the secretion of a kind of vegetable mucilage; so that a grain of pollen once brought in contact with the stigma-surface, will in all probability adhere permanently.

But it may happen that no insect visits the flower, and in such a case, cross-fertilization cannot be effected. Here is another wonderful adaptation to circumstances. The stigmas, as already seen, continue to coil themselves, so that the inner surface is finally brought in contact with the pollen on the style, and self-fertilization is thus secured as a last resort.

Soon after the fertilization of the blossom, the involucre closes, thus protecting the fruit during the critical process of its development. The corolla, style, and stamens, having discharged their functions, and being now of no farther use to the plant, wither and fall; the ovary swells to accommodate the growing seed within; its outer surface becomes hard, and, the slender neck, bearing the calyx bristles, (2 Fig. 3) grows in length, rapidly elevating the bristles (Fig. 7).

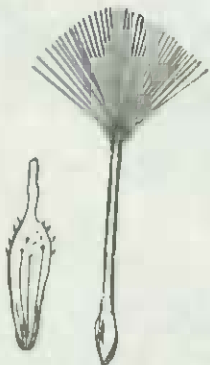


Fig. 7. Fruit of Dandelion.

Now, the involucre bends backward and exposes the receptacle

with the seeds all ready for transportation. These, the playful child blows away to tell the time of day. They are fitted most beautifully for travel. As they are wafted through the air they almost put to shame man's clumsy inventions for aerial navigation. The hard ovary, being heavier than the other parts, will, of course, hang below the downy pappus above. If the ovary be rubbed between the fingers, blunt projections will be easily felt upon the surface, and an examination through our magnifying glass will show (as illustrated in the enlarged ovary in figure 7) that a number of points or barbs grow from the ovary shell, all directed upward.

The seed may be borne by the wind perhaps for many miles from its parental home; but when it comes to earth, the barbed ovary being directed downward will touch the ground first then by the waving to and fro of the hairy pappus, the seed will be worked deeper and deeper into the soil, and so safely sown. The barbs act like grappling hooks in preventing the withdrawal of the seed.

The pappus hairs are worth a closer glance. Let us separate one of them, and bring to bear upon it the power of a compound microscope. An appearance similar to this (Fig. 8) is presented.



Fig. 8. Pappus Hair.

Instead of being simple threads, each is seen to be hollow and branched, the many projections giving of course a greater extent of surface, and a consequent increase of buoyancy.



Fig. 9. Receptacle.

After all the seeds have gone, the convex cushion, or receptacle as we have decided to term it, remains (Fig.

9). Upon its surface may be seen numerous indentations marking the former attachments of the seeds.

Such may be learned from this humble plant. Surely the unmistakable marks of infinite care and wisdom are there, on leaf and flower and downy hair. Not a fibre without its use, not a worthless cell to be found. As soon as the purpose is fulfilled for which a particular organ was designed, straightway that organ shrivels and decays. The bright-hued corolla was needed in the economy of the flower that flying insects might be attracted, and fertilization secured. But as soon as this was effected, the golden flower-ets dried and fell away.

In fair weather the tiny flower cups of the full-blown dandelion are spread wide open to the air and sun, and are conspicuous objects to the passing insect. But at night when dew is likely to fall, and during damp weather when the moisture of the air would likely dilute and spoil the nectar, the flower is tightly closed, and the precious juices preserved. Who can venture to suggest an improvement in the capacities of the dandelion! As it is in its sphere—specially adapted to the circumstances of its allotted life, so with all others of God's great works.

Before we leave our subject, the economic purposes to which man applies the various parts of this humble plant should be alluded to. The young leaves form indeed an excellent salad—highly prized by those who have learned its merits. The green leaves are used extensively as a pot-herb, and the root is a valuable medicine. The milky juice pervading the whole plant, contains a caoutchouc, but not opium as is generally supposed.

"Those whom Truth and Wisdom lead,
May gather honey from a weed."

J. E. TALMAGE.

THE USE OF THE EYE.

One of the most wonderful organs in the human system is the eye. The various parts that make up this useful and indispensable sense are so grand and complex, that we are led to exclaim, "How great and wondrous are the creations of God!"

We might spend our whole lifetime in the study of the peculiarities and arrangements of the different parts, and their adaptation to the uses of mankind, without ever being able to construct one on the same model. Paracelsus, the alchemist, once made an artificial rose, and spent months trying to