Plants: Our Silent Overlords

The plants may seem common to us - just another trimming to our plates. But the plants are much more than that. In fact, they shape entire ecosystems and the food chain itself. See why plants deserve more credit then we usually give them.

PRACTICAL SCIENCE WITH PHIL FREDA

What's the first thing you think of when you see a plant?

Is it food or perhaps something that needs to be mowed down, pruned, or picked?

Is it something to decorate your home with?

I feel that plants are looked over, barely noticed by most. I know this, because I, too, felt this way.

Trees, scrubs, bushes and flowers all just seemed normal and common to me. Sure, I knew that plants performed photosynthesis and made energy from sunlight and even studied them extensively in class, but they just seemed ordinary and purely inconspicuous.

All that changed after watching the plants episode of the BBC miniseries "Life."
I thought that the episode was interesting, but nothing really had hit me as magnificent, that is until the naturalist and narrator of the series David Attenborough said something that made my mind perform a full stop.

Attenborough was elaborating on a relationship between the Venus fly trap and various insects.

The Venus fly trap is famous for trapping insects in order to receive nitrogen which it needs to grow in nitrogen-poor soil (a practice which is amazing by itself). What completely amazed me is that, when it comes time for reproduction, the Venus fly trap grows its attractive flowers at a measurable distance above the traps.

This ensures that pollinating insects do not die in traps and can perform their pollination rituals safety. Attenborough then commented on how the Venus fly trap exploits its insect guests as it sees fit.

At this point, something clicked and I had an epiphany.

It was something that I always knew, but never actually understood. To put it bluntly, plants rule the world!

We humans think that we are on the top of the food chain, and in a sense, we are. But without the plants to provide sustenance, we all die. All of our technology and progress would be utterly meaningless.

All food energy is derived from plants. Plants perform photosynthesis and produce sugar energy, herbivores and/or omnivores (meat and plant eaters) eat parts of the plant to provide themselves with energy, and then carnivores and/or omnivores eat the plant eater.

It is an endless cycle and seems very ordinary and common, but this essential process is governed by our silent overlords – the plants.

The most impressive exertion of plant power, however, is pollination-related relationships with animals.

Plants provide nectar coupled with scents and flower colors that are extremely attractive to bees, bats, moths, butterflies and flies. The animals gladly drink up a high energy, safe, free meal.

Unbeknownst to the animal however, they have most likely picked up a sprinkling of pollen from the flower. Pollen is like sperm in we mammals. The animal then moves on to another flower and may drop a few pollen grains on an ovule assisting pollination and enabling reproduction for the plant.

Pollination may seem extremely elementary and well understood. Take a moment and think, however, of how elegant and beautiful this process is. Think of the specialization and generations of selection, which slowly shaped and molded these relationships together.

Flowers and their beauty are all part of the plant. The more attractive a flower is, the more likely a pollinating animal will land on it. The system is both unbelievably complex yet simple at the same time. It is also very important to us humans. According to mongabay.com, you can directly connect one out of every three bites of food to pollination.

Plants involve themselves in many interesting symbiotic relationships with bacteria, protists, fungi, animals, and even other plants.

Some plants utilize bacteria in their roots to help them absorb nitrogen and some also have symbiotic relationships with fungi to help absorb other nutrients. Current research even indicates that some plants produce hormones that also affect insect populations. These hormones act as insect hormones and can affect insect development, aid in reproduction through pollination, and even protect the plant from insect predators.

Plants have even helped shape our culture through artificial selection. We, as humans, selected plants that were easy to cultivate and provided nutritional, tasty fruits and roots. Our selection of these plants helped aid in their survival and dominance over other plants that were not as "fit" when it comes to filling a nutritional niche.

In reflection, it is amazing to see how plants have silently and passively usurped their way to power and dominance. Without them, all animals (including humans) could not survive.

The next time you sit down and eat a nice salad or even a steak, trace back the intricate web of relationships that brought you that meal and the silent force of selection that governs us all.

Think about it! I'm sure you won't see plants the same ever again.

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