

GRASS

INTRODUCTION

One of the most phenomenal natural things in the history of the planet is the underrated **grass**. When most people think of grass, they normally think of a common weed, but when you look at the history of grass, you will see how fundamental grass has been to the history of the Earth. Grass has even changed human civilization.

THE HISTORY OF GRASS

Hundreds of millions of years ago, at the time of the dinosaurs, trees covered the earth. It was so hot that even Antarctica had no ice, it was land and it was covered with trees. Today, some remains of those trees still exist. Trees were superior in height compared to other plants, with that advantage; trees stole nearly all the light. But that tiny amount of sunlight left allowed a new challenger to take on trees, grass. Scientists found grass in dinosaur poo (coprolites), from 66mya.

Between 50mya and 30mya, CO₂, the gas plants need to breathe, started to disappear. The Himalayas started to grow and other rocks were washed away into the sea. They sucked the CO₂ out of the atmosphere creating limestone. Without enough CO₂, plants struggled.

Grass needed a way to get enough CO₂. Grass developed a part just like a turbocharger, it sucked in extra CO₂. But the tallest trees still survived. Then, grass unleashed a deadly weapon...

The earth was a lot hotter and grasses had become flammable. If set on fire, they could burn trees and then grow back the same day. However, the trees would have taken years to grow back. All the grass needed was a spark, like lightning. Not only did grass help set fire they could survive it as well, in fact, they are the most fire resistant plants in the world.



Not only did grass affect the plant kingdom, it also changed the animal kingdom. When animals eat grass, the CO₂ gets absorbed into their teeth, this allows scientists to discover what plants they ate. In a graph of the amount of plants in enamel, the first 7 million years only shrubs and trees were found, but after that, it was nearly all grass.

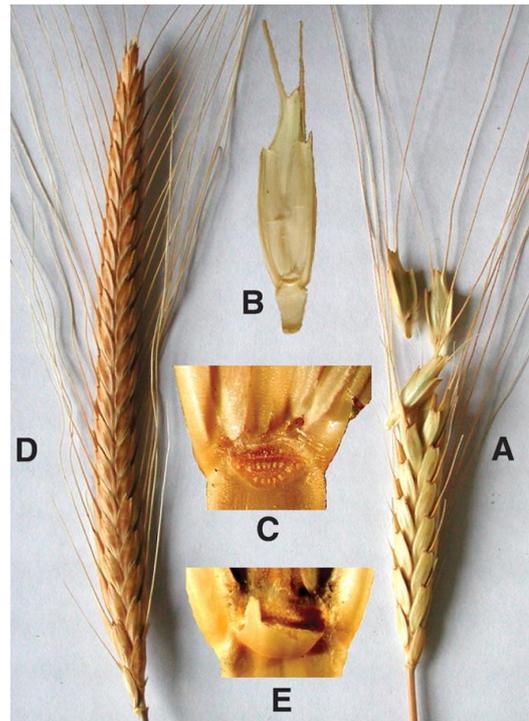
To stop animals to eat it, grass started to grow tiny glass shards on its sides. If an animal touched it, they would get scratched by the sharp glass. In North America alone, grass made half of the herbivores extinct.

Grass started spreading across the savannah, at the time when Homo sapiens started to emerge. Who would've known that grass would start up civilization? Wheat had allowed humans to make bread and farm. In Turkey, some archaeologists believe they know why that civilization happened. The place is called Gobekli Tepe. In Gobekli Tepe there are some of the oldest structures around, dating three times as old as Egypt's pyramids. There's a real mystery about who built it, and how?



At the time, people would've been struggling for food so they would eat anything they could. However, they couldn't have the wild wheat because whenever they touched it, the seeds would fly away. A single gene in a wild wheat plant would change the history of humans. In the old wheat plant there was a special ridge of cells that connected the seed to the plants. That ridge would break down when it was ripe. But in the new wheat, that ridge stayed the same strength all the time, making it easier for humans to gather. The humans could then plant the extra seed and harvest the wheat again. This wheat would lead to agriculture.

The Stone Age creators of Gobekli Tepe had stopped being hunter gatherers, and became the first farmers. They had eaten bread, and that bread was enough to feed the amount of workers required to build such a vast temple. The mystery had been solved. The bread had led people to come together as bigger and bigger groups, and eventually to build villages, towns, and even cities.



A = Old Wheat
B = Wheat seed
C = Old Wheat ridge
D = New Wheat
E = New Wheat ridge

CONCLUSION

So without grass, we humans would never have had civilization, and without grass we may not even be alive. So next time you see grass, don't just tread on it, marvel at its amazing story.

REFERENCES

1. "How to Grow A Planet", BBC, 2012 (<http://www.bbc.co.uk/programmes/b01ckw5g>)
2. "How Fast Was Wild Wheat Domesticated",
<http://www.sciencemag.org/content/311/5769/1886/F1.large.jpg>
3. <http://en.wikipedia.org/wiki/Grass>