Biomimicry

by Mrinmoy Kshattry - Thursday, July 30, 2015

http://gonitsora.com/biomimicry/

Image Courtesy: Shutterstock

It is common sight for every one of us to see a colony of ants march along a trail in search of food and shelter, carrying a huge amount of load on their backs. They are tireless devoid of any sleep and rest. To summarize in a line Ants are truly: ***Miracles in one small package.***

"If we were to weigh all the ants in the world, they would weigh as much as all of the people," said wildlife presenter Chris Packham recently in BBC Four's ***The Wonder of Animals: Ants.***

Seemingly, there is no denying the fact that we have a large number of tiny friends inhabiting the blue planet. The number could be even more than us! Having said so, the most astonishing yet bizarre question that strikes almost immediately is *'Do ants face traffic snarls'?* Well, the answer is a surprising ***'No'***!

There are many such examples. Isn't this amazing? Nature has seldom failed to charm us with her magic. She has blended everything so wonderfully that a close observation of a common phenomenon would leave us awestruck as we were a few lines ago while dwelling upon the absence of traffic snarls in the lives of our tiny friends: *the ants*. As a part of Nature, we too follow the laws of Nature; but she is way ahead of us. She might not have revealed all her cards; nonetheless she seems to be in possession of solutions to every problem. Only if we had learnt her skills, then we could proudly claim that *we are advanced in technology*. This, however, is by no means a belittling of our achievements in science and technology.

According to Wikipedia, *Biomimicry* is *an approach to innovation that seeks sustainable approach to human challenges by emulating nature's time-tested patterns and strategies*. It is mentioned in Tapping Into Nature by Terrapin Bright Green LLC : " Time and again, man has looked at nature for answers to his various problems. Nature has endowed humans with various solutions viz. self-healing abilities, environmental exposure tolerance , hydrophobicity, self-assembly, harnessing solar energy etc. Life can be thought of as an endless program of research and development that has yielded invaluable design ideas. Long before human beings began tinkering in labs, organisms had developed some level of expertise in carbon capture and sequestration systems, water harvesting and transport systems, adhesives, colorfast materials, electronic circuits, color displays, light absorbers, insulation, thermal dissipaters and countless other designs. All of these acted as blueprints for technologies that are not only useful to the society today but are also integral to the sustenance of the global economy. "

Harvard Business School's Dr. Rosabeth Moss Kanter said that before innovation proves successful, it is merely ***"somebody's wild idea that competes with every other wild idea".*** When we manufacture things we heat things to a high temperature, subject them to high pressure and nasty reagents. On the contrary, if we look out at Nature, we witness her doing things completely different than us at ambient temperature and pressure with water as solvent. She simplifies the processes so much so that the complex mechanism

underlying them gets well concealed. In chemistry, we have learnt that molecules have certain geometry and their electrons move in a specific way. When molecules bang each other nothing much happens. If it's done in infinite ways, rarely a reaction occurs. Now in factories when we have the molecules banging each other, we humans can make the reaction efficient only by increasing it to high temperature and pressure by which their velocities increases and the frequency of the reaction increases. But in nature, molecules never react with collision mechanism. Nowhere in cells, molecules bang each other. They assemble together and align themselves and the reaction occurs. This is ***biomimicry*** at molecular level. If we let molecules produce the desired product themselves rather than forcing them, the resultant product will be something that is in accordance with the laws of Nature. Nature is a vast ocean of knowledge. Science basically understands the laws of nature.

The great Albert Einstein said:

> ***Look deep into the nature and you will understand everything better.***

That sums it up. Hail Science! Hail Nature!
