**BIO 102: INTER-RELATIONSHIP OF ORGANISMS**

All organisms (plants, animals, microorganisms and humans) interact with one another and their environment in order to sustain their lives. The interactions may be simple or complex, harmful or beneficial. They include Competitions, Predations and Symbiosis.

Competition

The resources in a community is usually very limited, therefore, the organisms compete for this limited resources in order to survive. They compete for space, light, nutrients/food, water, shelter and mates (especially the animals). Inter-specific competitions occur between two or more different species while intra-specific competitions occur between members of the same species. The shortage of the resources may cause serious competitions in which some members may be forced to starve to death, develop stunted growth or they leave the community. Weeds, for instance compete with crops for nutrients, water, space and light. Forest trees form canopies to shield the undergrowths, making some to become shade tolerant or they develop weak, twinning stems to climb up through the canopies to form their foliage leaves. Animals may compete for mates, showing varying degrees of territoriality.

Predation

This occurs when one species kills and eat up another species e.g carnivores prey on other organisms (herbivores and other carnivores). Special predation occurs where the predator and the prey are of the same species. This is called Cannibalism. In prey – predator relationship, the predator always gain while the prey loses. The prey numbers decreases by death or some will escape from the community if the pressure is much, thus affecting the structure of the community.

Some of the feeding adaptations exhibited by the predators include:

* They have acute senses to locate and identify potential preys
* They develop powerful claws, teeth, stingers or poisons to help them catch /subdue the preys
* They could develop ability to run very fast and agile to pursue their preys
* They may be subtle, developing to ambush or disguise in their environment unnoticed

The preys on the other hand will not want to die nor be eaten; hence they could develop the following adaptations:

* Behavioural defences such as hiding, fleeing very fast and forming herds /schools to repel predator in en-mass
* Raising alarm to alert others of danger

**Symbiosis**

This occurs when two or more species interact together for benefits, harm or no effects at all.

Parasitism

It is a harmful co-action between two species where the parasites benefit at the expense of the host partner. One of the main characteristics of parasitism is that the parasite is usually smaller in size compared to the host. They often depend on the host for food , shelter and protection. They may live outside the hosts body (hence ectoparasite)such as the Ticks and lice, while those that live within the host body (endoparasites) include Ascaris, tapeworm, ringworm etc. Parasites may be microorganisms such as bacteria, protozoans, fungi, or viral. Viral parasites are obligate parasites in bacteria, plants and animals cells. There are phytoparasites such as mistletoes. Most endoparasites rely on their host to complete their reproductive cycles, either wholly or in part. Parasites can significantly affect the survival,reproduction and density of their host populations either directly or indirectly. The impact of the parasites on the host may kill the host outrightly or cause some discomfort (light or severe), or it gives room for secondary infection on the host. For instance heavy lousiness on poultry can cause reduction in egg production, leanness or outright death.

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