

PARASITOLOGY

Parasitology: is the science which deals with the organisms that live temporarily or permanently on / or in the body of other organisms and obtain their food and with the relationship of these organisms to their hosts.

The protozoa, the helminthes, and some of the arthropods are the most important groups of parasites known today.

What will we study?

Morphology-Life cycle-Pathology- Immunology-Epidemiology- Treatment

Medical Parasitology: is the science which deals with the parasites causing human infections and diseases they produce.

Medical Parasitology

1. **Protozoa** (unicellular parasites)= **Protozoology**
2. **Helminthes** (worms) = **Helminthology**
3. **Arthropods** (exo-skeleton and jointed legs) = **Entomology**

Types of Parasites

Commensal Parasites are parasites which do not harm their hosts.

Pathogenic Parasites

Pathogenic parasites are those cause diseases to their hosts.

Opportunistic Pathogens

Opportunistic **pathogens are commensal or free living organisms** which become pathogenic under special circumstances.

Facultative Parasites: are parasites capable of leading to both a free living and a parasitic existence.

Obligate Parasites: are organisms which completely dependent on the host during a segment or all of its life cycle, e.g. *Plasmodium* spp.

Temporary Parasites: they eat and run or visit the host for food. Bloodsucking arthropods and leeches are examples.

Permanent Parasites: are parasites which remain on or in their hosts from early life.

Occasional or Incidental Parasites

Parasites that attach or enter wrong host under natural conditions. eg. *Fasciola hepatica* in dog instead of sheep.

Erratic Parasites are parasites that wander into unusual places in the normal host. eg. *Enterobius vermicularis*.

Zoonotic Parasites: are parasites which acquired from animals.

According to location, parasites are divided into:

Ectoparasites are parasites which inhabit the body surface only without penetrating into the tissues, for example, Lice, Flea, Mites and ticks. Most ectoparasites act as vectors for diseases and its presence on the host is called infestation.

Endoparasites are organisms which live within the body of the host, and their presence in the host is called infection.

From structural point of view, parasites are divided into:

- 1. Unicellular parasites (Protozoa).**
- 2. Multicellular parasites (Helminthes).**

Summary of Animal association

+ and + = Mutualism. Both species benefit by the interaction between the two species ex. the flagellate protozoan (*Trichonympha*) that lives in the intestine of the termite (White ants).

+ and 0 = Commensalism. One species benefits from the interaction and the other is unaffected. Remora and the shark Feed on scraps left by shark

+ and - = One species benefits from the interaction and the other is adversely affected. For example: predation, parasitism and disease.

Life cycles

Parasites life cycles are of two types:

1. Simple or Direct Life Cycle:

Parasites are transmitted directly from one host to another one by means of its infective stages. Eg., *Entamoeba histolytica* and *Giardia lamblia*.

2. Complicated (Indirect) Life Cycle

It involves the contribution of one or more intermediate host. In this type of life cycle, eg., Schistosomes and Malaria parasites.

The purpose of Classification:

Classification is a man-made system used for identification, description and nomenclature of different species to put them in their special classification orders.

The classification orders are:

Kingdom: جیہان

Phylum: نق

Class: پۆل

Order: پلہ

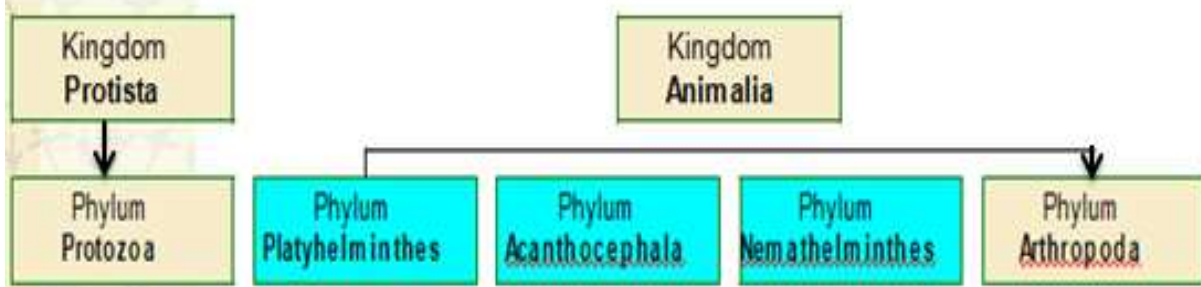
Family: خیزان

Genus: توخم

Species: جوړ

Also there are (super- سەر وو, sub- ژیر) in between the orders.

THE CLASSIFICATION



1. Phylum: Protozoa نقي سهره تايبه كان
2. Phylum: Platyhelminthes نقي كرمه پانه كان
3. Phylum: Nematoda نقي كرمه ده زوله بيه كان
4. Phylum: Acanthocephala نقي كرمه سهره دركاويه كان
5. Phylum: Arthropoda نقي پيچومگه داره كان