

# **BROAD CLASSIFICATION AND NOMENCLATURE OF PARASITES**

All the species of animals are placed in the Animal kingdom.

To express the intimate or more distance relationship of the different species a system of classification have been developed.

# CLASSIFICATION OF PARASITES

Orderly arrangement of any object is known as classification.

The science of classification of living objects is known as taxonomy.

The branch of biology which deals with the arrangement and classification of animals and plants is known as taxonomy.

(Taxos means Law and nomen means name).

Related **Species** are grouped in the same **genera**.

Related **genera** are grouped in the same **Sub family, family and Super family**

Related these **families** in the same **Suborder and Order**.

Related these **Orders** in the same **Sub class and Class**.

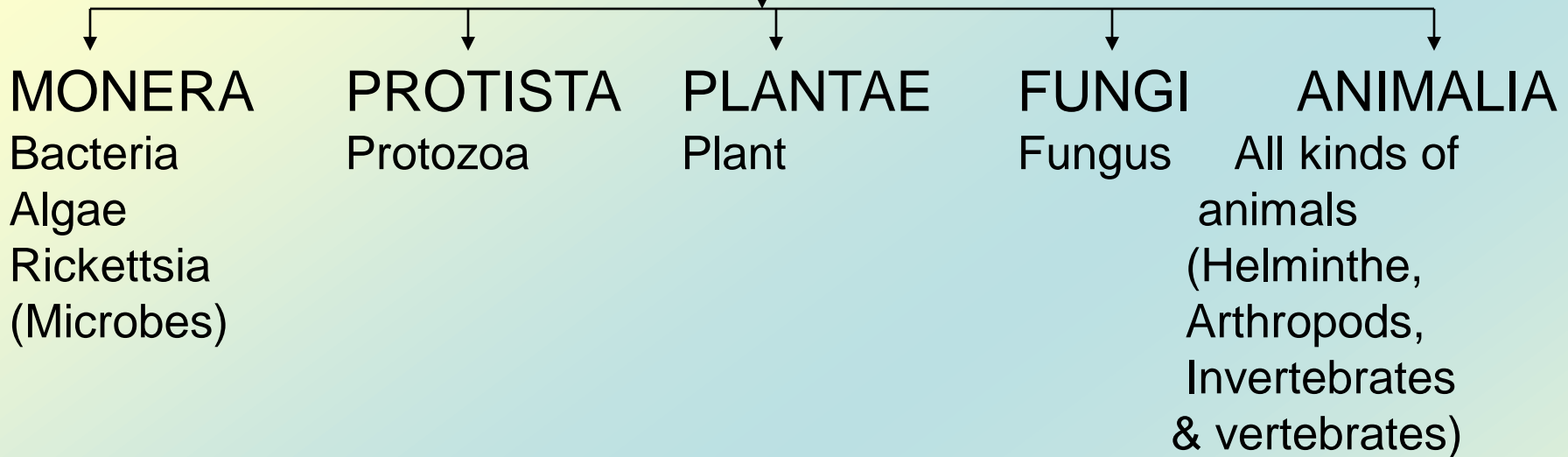
Related these **Classes** in the same **Phylum**.

Related these **Phylum** in the same **Sub-Kingdom and Kingdom**.

A classification of a parasite is mention below as an example.

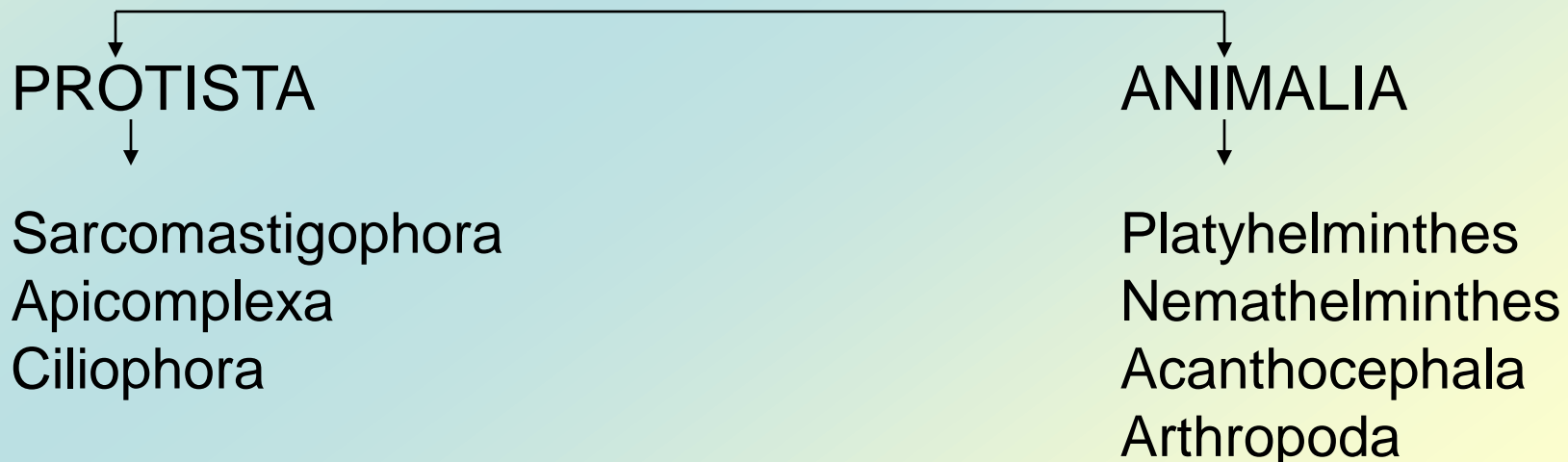
<b>Kingdom</b>	-	<b>Animalia</b>
<b>Phylum</b>	-	<b>Nemathelminthes, Scheider, 1873</b>
<b>Class</b>	-	<b>Nematoda, Rudolphi, 1808</b>
<b>Sub class</b>	-	<b>Secernentea, Dougherty, 1958</b>
<b>Order</b>	-	<b>Ascaridida, Skrjabin &amp; Schulz, 1940</b>
<b>Super family</b>	-	<b>Ascaridiodea, Railliet &amp; Henry, 1915</b>
<b>Family</b>	-	<b>Ascarididae, Baird, 1853</b>
<b>Genus</b>	-	<b><i>Ascaris</i>, Linnaeus, 1758</b>
<b>Species</b>	-	<b><i>Ascaris suum</i>, Geoze, 1782</b>

## KINGDOM (5)

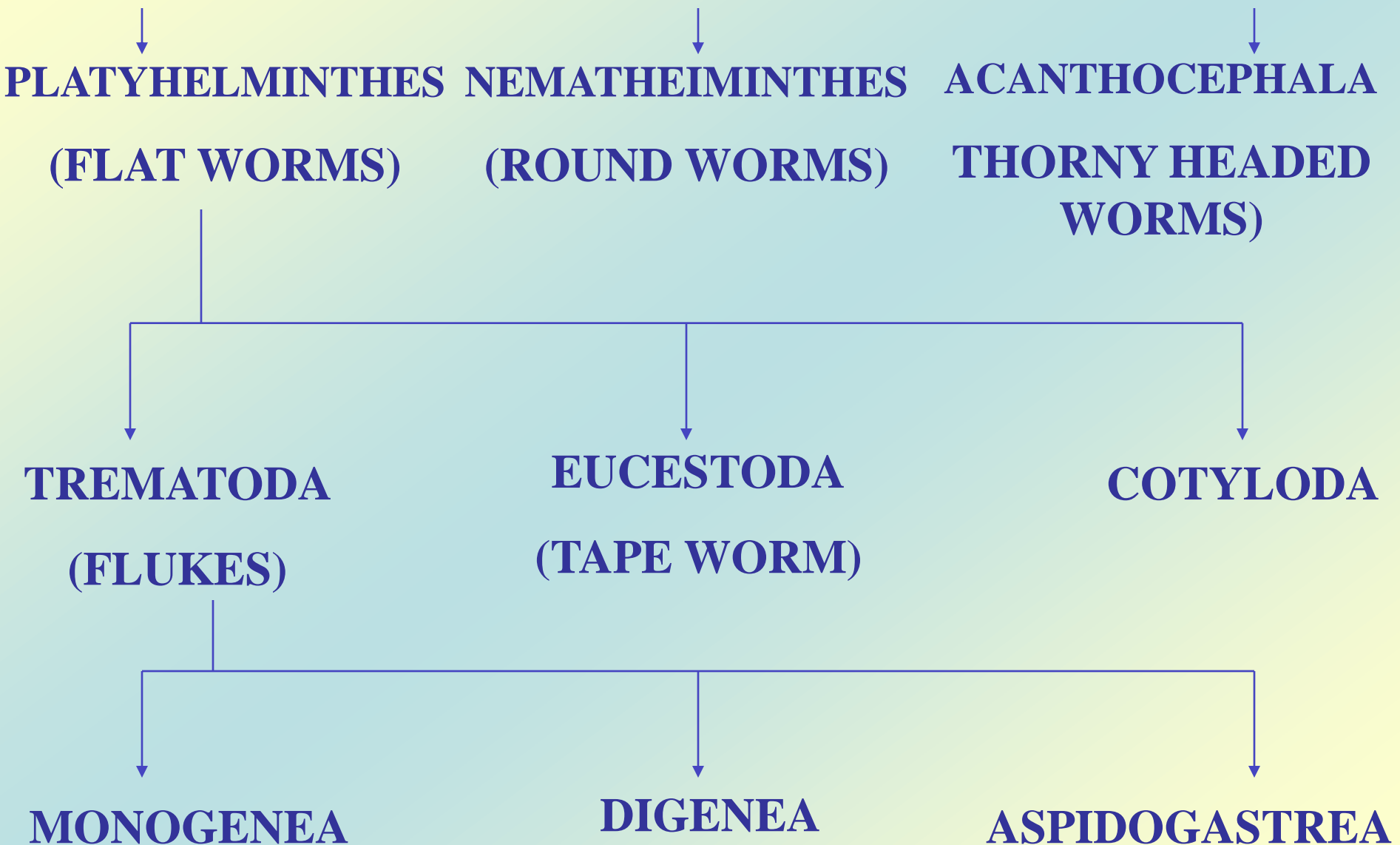


Various parasites affecting the live stocks are classified mainly under 7 (seven) phyla

## KINGDOM (5)



# THREE PHYLLUM OF HELMINTS



# HELMINTH PARASITE

PHYLUM

PLATYHELMINTHS

NEMATHELMINTHS

ACANTHOCEPHALA

CLASS

NEMATODA

SUB CLASS

TREMATODA

EUCESTODA

COTYLODA

ORDER

PSEUDOPHYLLIDEA

CYCLOPHYLLIDEA

ADENOPHOREA

SECERNENTA

SUB CLASS

MONOGENEA

ASPIDOGESTRA

DIGENEA



# Classification of Nematoda

CLASS

**NEMATODA**

Sub-classes

**Secernentea  
(phasmidia)**

**Adenophorea  
(aphasmidia)**

Order (05)

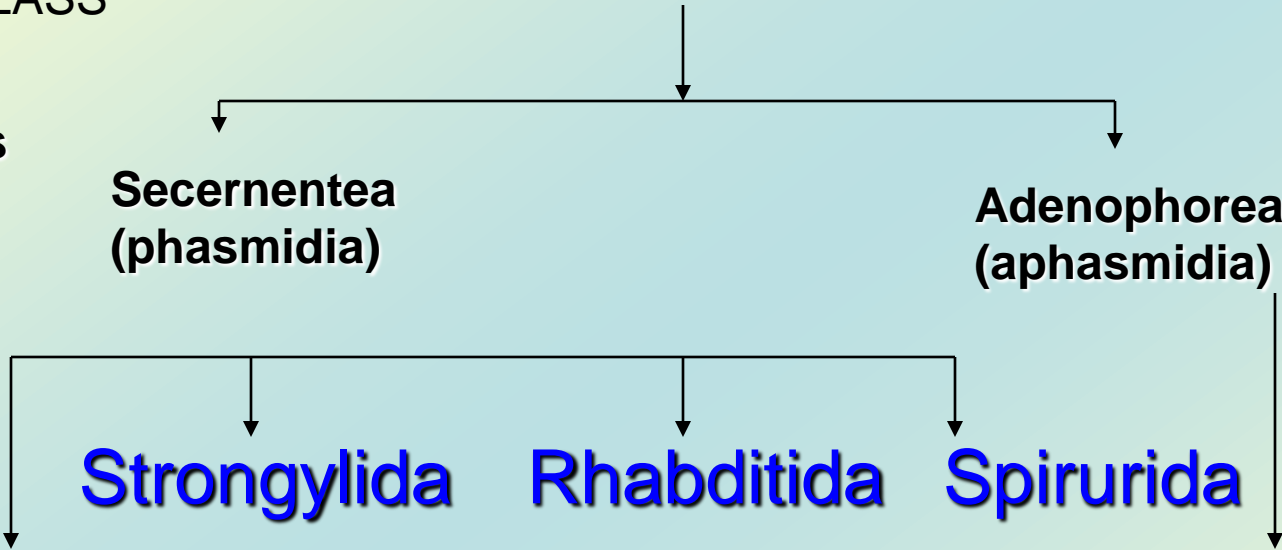
**Strongylida**

**Rhabditida**

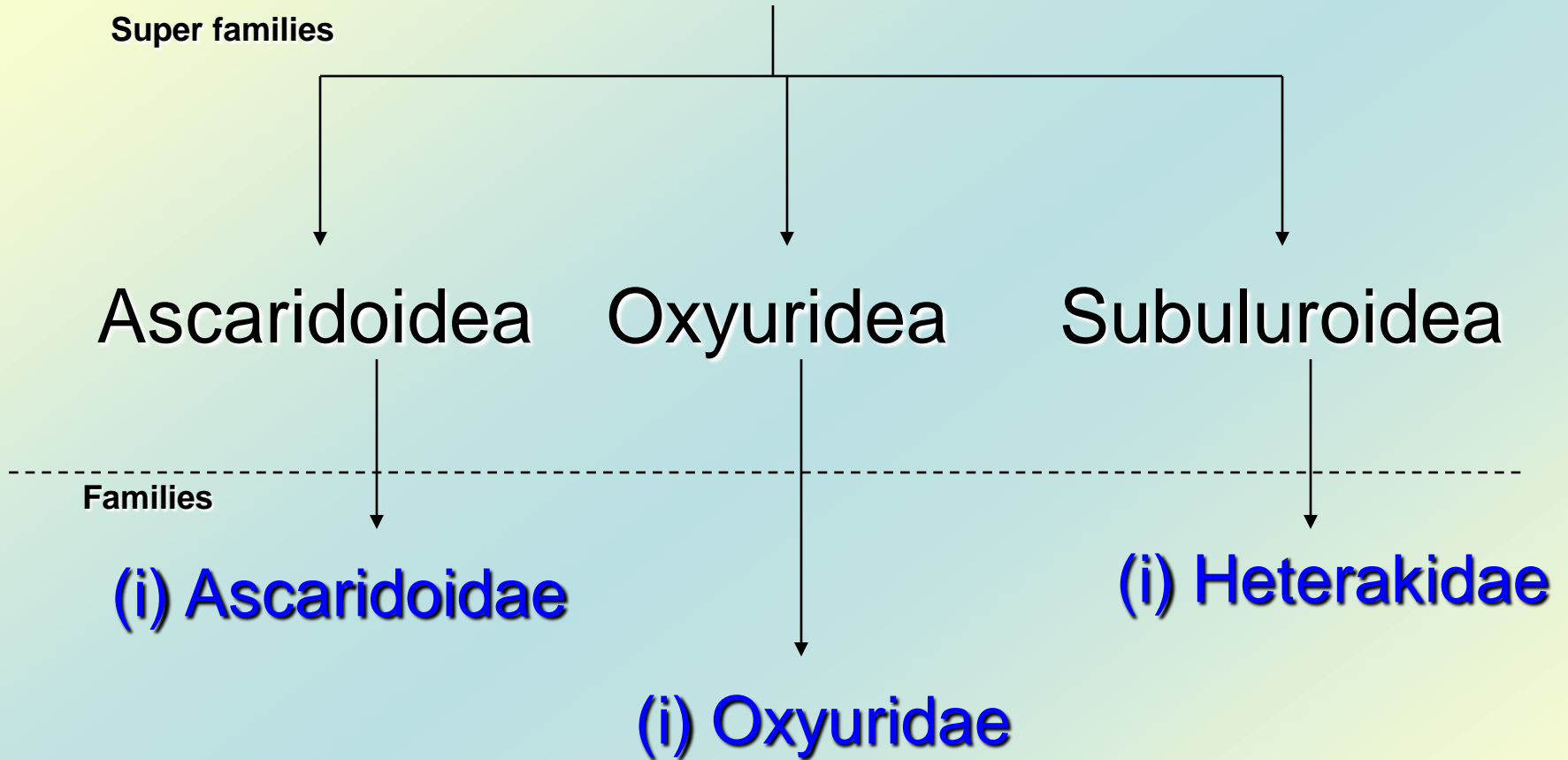
**Spirurida**

**Ascaridida**

**Enoplida**



# Order – Ascaridida



# Order - Rhabditida

Super family



Rhabditoidea

Family



(i) Strongyloididae

# Order - Strongylida

Super Families (04)

Strongyloidea

Trichostrongyloidea

Ancylostomatoidea

Metastrongyloidea

families

(i) Strongylidae

(ii) Trichobnematidae

(iii) Amidostomidae

(iv) Stephanuridae

(v) Syngamidae

(i) Trichostrongylidae

(ii) Dictyocaulidae

(iii) Protostrongylidae

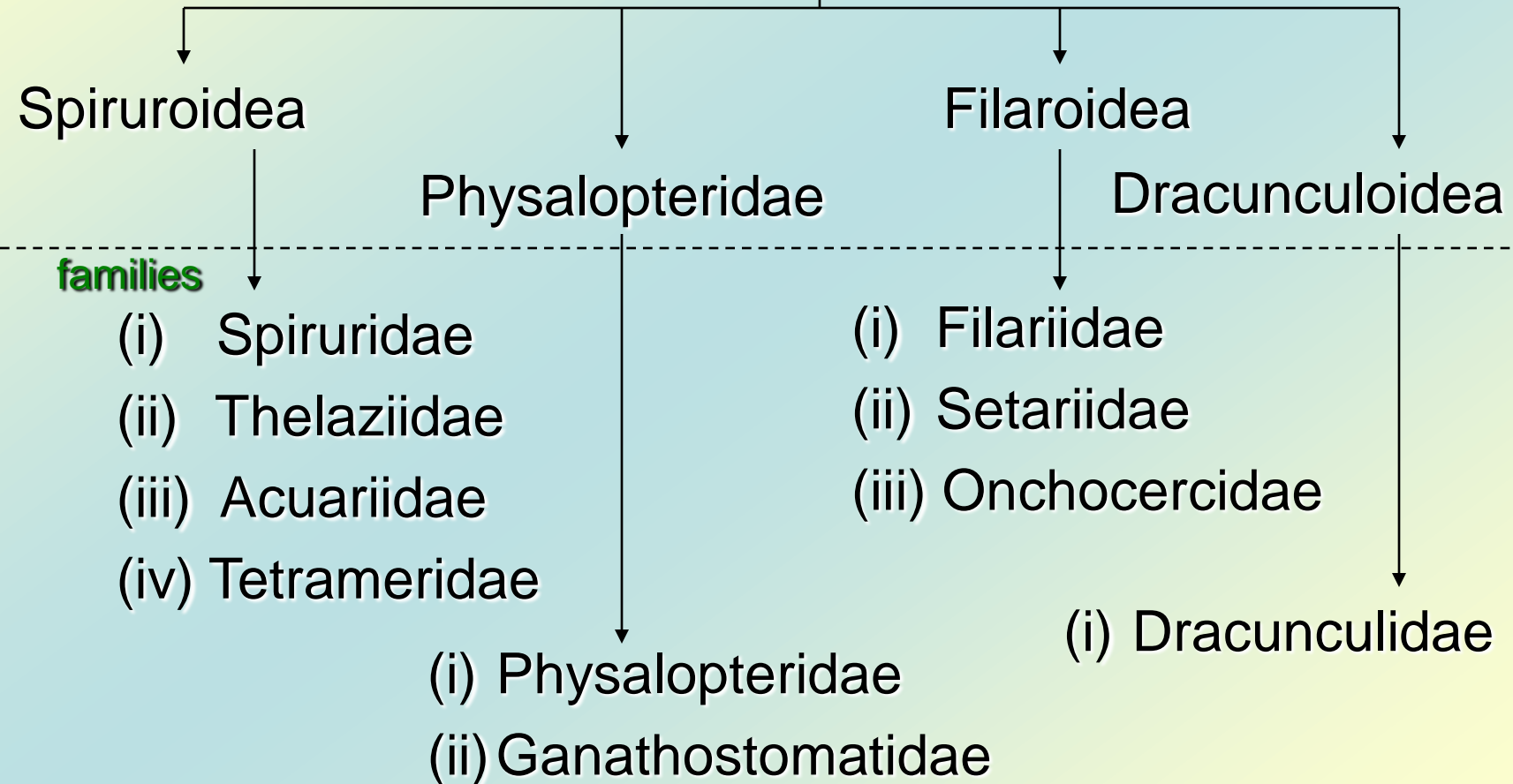
(i) Ancylostomatidae

(i) Metastrongylidae

(ii) Filasoididae

# Order - Spirurida

Super families (04)



# Order - Enoplida

Super families (02)

Trichuroidea

Diactophymatoidea

families

- (i) Trichinellidae
- (ii) Trichuridae
- (iii) Capillaridae

- (i) Diactophymidae

# ARTHROPODA

Phylum

CLASSES



INSECTA

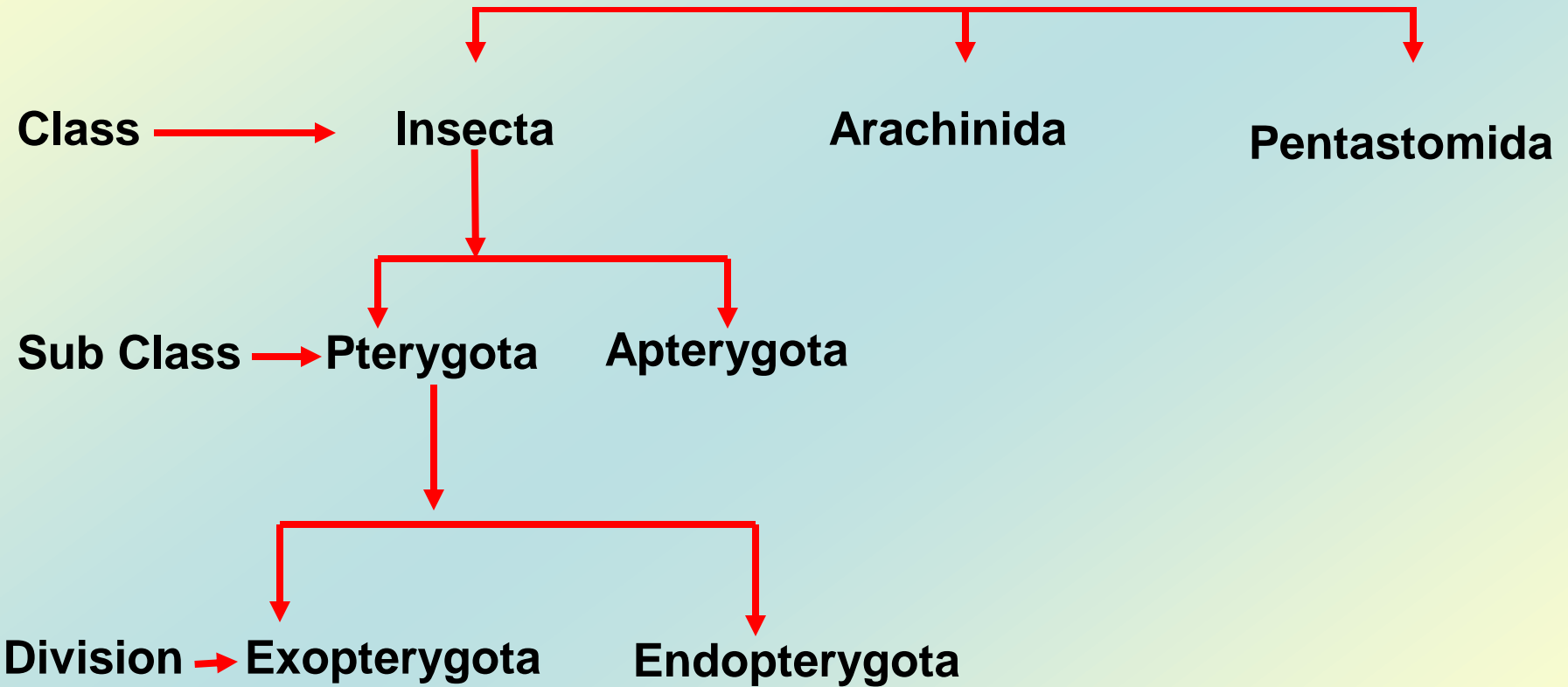
ARACHNIDA

CRUSTACEA

PENTASTOMIDA

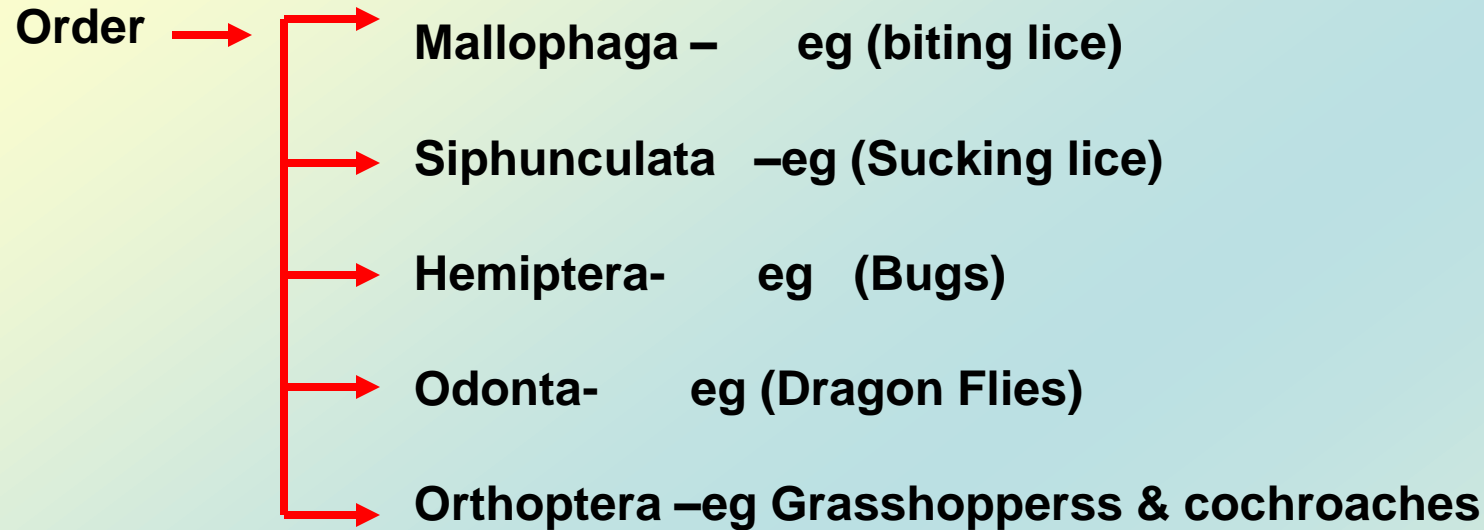
MYRIAPODA

# PHYLUM- ARTHROPODA

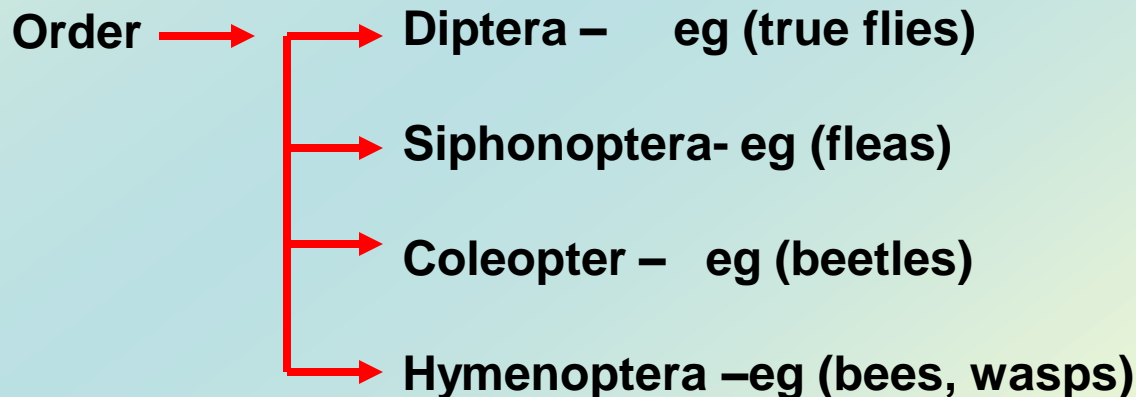




# EXOPTERYGOTA



# ENDOPTERYGOTA



KINGDOM

PROTISTA

SUB-KINGDOM

PROTOZOA

Phylum



Sarcomastigophora

Apicomplexa

Ciliophora

Sarcodina

Mastigophora

Sporozoea

# NOMENCLATURE OF PARASITES

THE ANIMAL PARASITES, LIKE ALL ANIMALS, ARE NAMED ACCORDING TO THE INTERNATIONAL CODE OF ZOOLOGICAL NOMENCLATURE,

WHICH IS BASED ON THE PRINCIPLE OF **BINOMIAL NOMENCLATURE** OF LINNAEUS.

THE TENTH EDITIONS OF HIS “SYSTEMA NATURE” PUBLISHED IN 1758 IS ACCEPTED AS THE STARTING POINT FOR ZOOLOGICAL NOMENCLATURE.

IT CAN BE SEEN READILY THAT DUE TO THE LARGE NUMBERS OF ANIMALS SOME CONSISTENT METHOD OF NAMING THEM MUST BE USED IN ORDER TO ESCAPE ENDLESS CONFUSION, SUCH AS WOULD BE THE CASE IF COMMON NAMES WERE APPLIED.

THE GENERAL GROUPS USED IN THE CLASSIFICATION OF ANIMALS ARE AS FOLLOWS:

PHYLUM

SUBPHYLUM

CLASS

SUBCLASS

ORDER

SUBORDER

SUPERFAMILY

FAMILY

SUBFAMILY

GENUS

SPECIES

SUBSPECIES

SOME OF THE RULES WHICH APPLY TO THIS METHOD OF NOMENCLATURE ARE GIVEN BELOW :

- 1) ZOOLOGICAL NOMENCLATURE IS INDEPENDENT OF BOTANICAL TERMINOLOGY.

2) THE DESIGNATION OF GENERA IS UNINOMINAL, FOR SPECIES BINOMIAL AND FOR SUBSPECIES TRINOMIAL.

GENERA - *Hyalomma*

Species - *Hyalomma anatolicum*

Sub species - *Hyalomma anatolicum isaci*

3) THE SCIENTIFIC NAMES OF ANIMALS ARE LATIN OR LATINIZED.

*Linguatula*

*Entamoeba*

*Assamensis*

*Donovani*

*Lishmania*

*Nagpurensis*

4) The name of a family is formed by adding -idae, and the subfamily by -inae to the root of the name of the type genus.

There are no consistent endings in the higher groups.

*Fasciola* + idea = fasciolidae

*Culex* + idea = Culicidae      *Culex* + inae = Culicinae

Ancylostoma + idea = Ancylostomatidae

Ancylostoma + inea = Ancylostomatinae



5) The genus always begins with a capital letter, while the specific name always begins with a small letter, except those specific names derived from the name of a person which may begin with either a capital or small letter.

*Fasciola hepatica*

*Taenia solium*

*Babesia bigemina*

*Leishmania Donovanii / Leishmania donovani*

- 6) Generic, specific and subspecific names are printed in italics, or when written, are underlined. When printed by certain methods which do not employ italics they are underscored.

*Fasciola hepatica*

*Taenia solium*

*Babesia bigemina*

*Leishmania donovani*

Fasciola hepatica

Taenia solium

Babesia bigemina

Leishmania donovani

7) THE AUTHOR OF A SCIENTIFIC NAME OF AN ANIMAL IS THAT PERSON WHO FIRST PUBLISHES IT.

IF IT IS DESIRED TO CITE THE AUTHOR'S NAME IT FOLLOWS THE SCIENTIFIC NAME. THIS MAY BE FOLLOWED, SEPARATED BY A COMMA, BY THE YEAR IN WHICH THE NAME WAS FIRST PUBLISHED THUS :

*Taenia* Linnaeus, 1758.

8) WHEN THE SPECIES IS TRANSFERRED TO OTHER THAN THE ORIGINAL GENUS, THE NAME OF THE AUTHOR IS PLACED IN PARENTHESES, AND IF IT IS DESIRED TO QUOTE THE AUTHOR OF THE NEW COMBINATION HIS NAME FOLLOWS THE PARENTHESES.

Thus: *Taenia taeniaformis* (Batsch, 1786) Wolfhugel, 1911.

9) THE VALID NAME OF A SPECIES IS THAT WHICH IS FIRST PUBLISHED WITH AN ADEQUATE DESCRIPTION.

THE TENTH EDITION OF THE SYSTEMA NATURAE PUBLISHED IN 1758 BY LINNAEUS IS ACCEPTED AS THE STARTING POINT OF THE SYSTEM OF ZOOLOGICAL NOMENCLATURE.

- 10) A GENERIC OR SPECIFIC NAME WHICH IS ONCE PUBLISHED CANNOT BE REJECTED, EVEN BY ITS AUTHOR.
  
- 11) A GENERIC NAME IS TO BE REJECTED IF IT HAS PREVIOUSLY BEEN USED FOR ANOTHER ANIMAL.

12) UNDER CERTAIN CONDITIONS WHERE A STRICT APPLICATION OF THE RULES WOULD RESULT IN GREAT CONFUSION THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE MAY SUSPEND THEM. THUS IF IT IS FOUND THAT A NAME WHICH HAS LONG BEEN USED IN THE LITERATURE IS INVALID, ITS USE MAY BE ALLOWED BY THE COMMISSION.

THANKS

