Parasitology

Collected by: Ahmed Fadil

Third stage

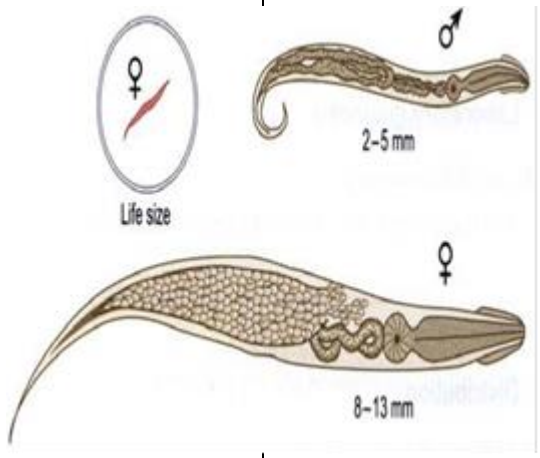
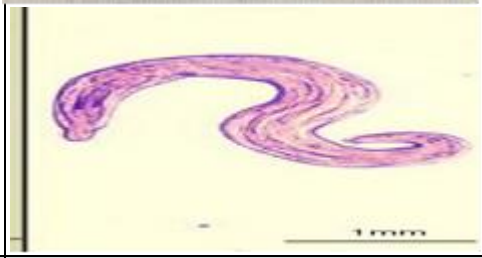
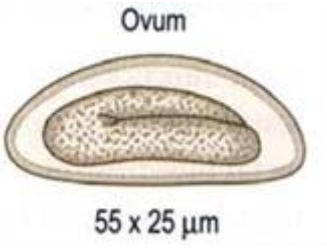
1st term

NEMATODES

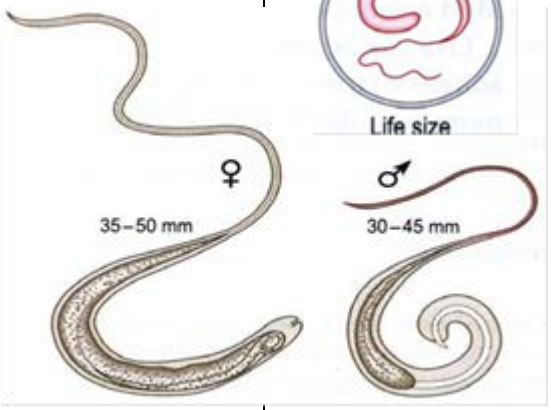
parasitology 2014-2015

Ahmed Fadil

Enterobius vermicularis

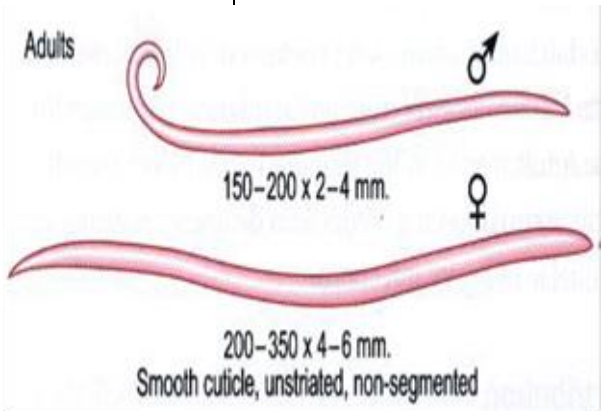
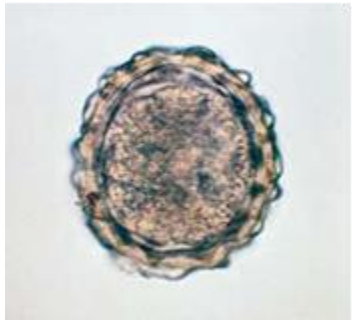
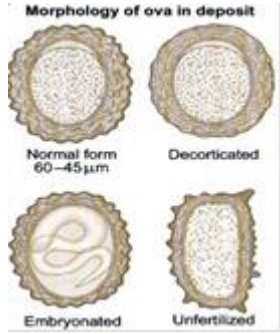
Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Enterobius vermicularis 	**Pin worm OR oxyuris**	**Enterobiasis OR Oxyuriasis (old name)**	**Feco -orally transmitted parasite**  	**Adult**	**& Cecum appendix (free in lumen)**
				Egg 	**In perianal & perineal skin** 
				L1,L2,L3,L4	**Cecum**
Infective stage	***Mode of transmission***	***Main pathogenesis***	***Diagnosis and Diagnostic Stage***	***Treatment***	***Control***
Egg with L1 (embryonated egg) Location of :development In perianal skin	**-Ingestion of the egg -Inhalation(air borne) -autoinfection**	**-Pruritus anus -Pruritus vulvae -weeping eczema**	**Cellophane tape Technique (Scotch tape technique)**  **<u>Diagnostic stage:</u>** **Larvated ova**	**Mebendazole Treat the family Repeat after 2 weeks**	**-Bedding and underclothing should be sanitized -Personal &family hygiene -Mass chemotherapy**

Trichuris trichiura

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Trichuris trichiura 	**whipworm**	**Trichuriasis OR Whipworm disease** 	**Soil transmitted parasite** 	**Adult**	**Cecum & appendix Threaded into) (mucosal epithelium**
				Egg 	**Soil** 
				L1,L2,L3,L4	**Lower small intestine&cecum**

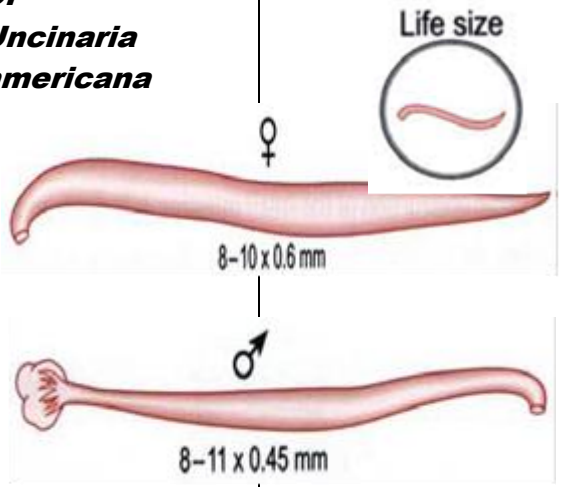
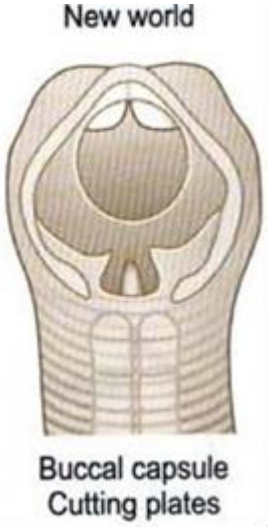
Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
Egg with L1 (embryonated egg) **Location of development: After a period in soil**	**Ingestion of egg with L1**	**-Prolapsed rectum** **-dysentery**	**Stool examination** **Diagnostic stage: Embryonated eggs**	**Mebendazole, 200mg for adults** **100mg for children**	**-Infections must be treated** **-Hygiene** **-Sanitation**

Ascaris lumbricoides

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Ascaris lumbricoides	**The large intestinal roundworm of man**	**Ascariasis or roundworm disease**	**Soil transmitted parasite**	**Adult**	**Free in the lumen of small intestine**
				**Egg** 	**Soil** 
				L1,L2,L3,L4	**Lung**

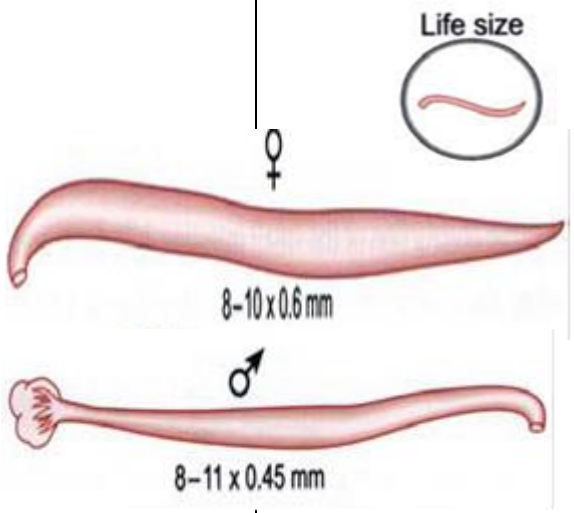
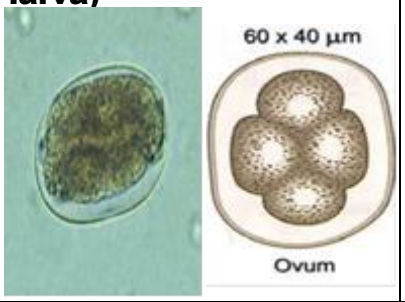
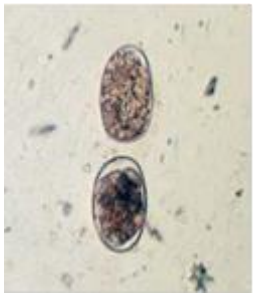
Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
Fertilized egg with L1 **Location of development: After a period in soil**	**Ingestion of ovulated ovum**	**-intestinal abstraction** **-biliary obstruction** **-loffler syndrom**	**Stool examination** **Diagnostic stage: fertilized& Unfertilized eggs in feces**	**Benzimedazole (larvae migration)** **Mebendazole (adult)**	**-Sanitation** **-Stop use of human feces in fertilization.**

Necator americanes

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Necator americanes **Or** ***Uncinaria americana*** 	**New World hookworm**	**Uncinariasis Or Nectoriasis** 	**Soil transmitted parasite** 	**Adult**	**-attached in the mucosa of the small intestine**
				Egg,L1,L2(Rhabditiform larva) 	**Soil & feces** 
				L3(Filariform larva)	**-Soil /skin/heart/lung**
				L4	**-small intestine**

Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
L3 (filariform larvae) Location of development: After a period in soil	**Skin penetration**	**Anemia**	**Stool examination** **Diagnostic stage: Eggs in feces**	**Mebendazole 200-adult 100-children**	**Sanitation is the chief method of control.**

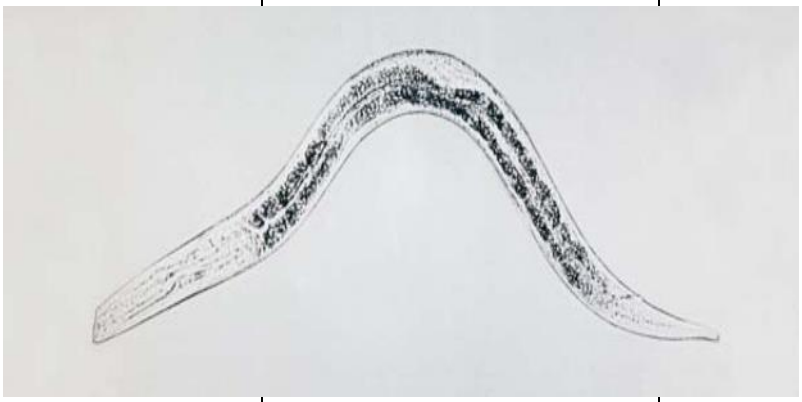
Ancylostoma duodenale

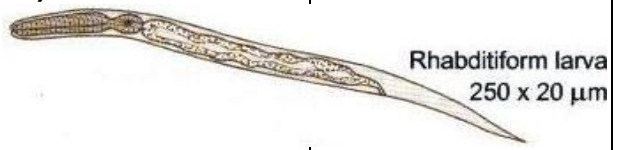
Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Ancylostoma duodenale 	**Old world hookworm**	**Ancylostomiasis** 	**Soil transmitted parasite** 	**Adult**	**attached in the mucosa of the small intestine**
				Egg,L1,L2(Rhabditiform larva) 	**Soil & feces** 
				L3(Filariform larva)	**-Soil /skin/heart/lung**
				L4	**-small intestine**

Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
L3 (filariform larvae) Location of development: After a period in soil	**-Skin penetration -ingestion -transmammary route**	**Anemia**	**Stool examination** **Diagnostic stage: Eggs in feces**	**Mebendazole 200-adult 100-children**	**Sanitation is the chief method of control.**

Strongyloides stercoralis

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Strongyloides stercoralis	**Threadworm**	**Strongyloidiasis-Threadworm - infection Cochin-China - diarrhea**	**Soil transmitted parasite (free living & (parasitic Auto infection (parasitic)**	**Adult female & eggs**	**The mucosal epithelium of the upper small intestine**
				L1,L2(Rhabditiform larva)	**Soil & feces**
				L3(Filariform larva)	**-Soil then penetrate skin**
				L4	**The mucosal epithelium of the upper small intestine**





Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
L3 (filariform (larvae Location of :development After a period in soil	**-Skin penetration by larva from soil or (at low level healthy individuals) external auto infection -Internal auto infection (larvae penetrate mucosa)**	**Sanitation (prevent contamination of soil with human feces).**	**Stool examination Diagnostic stage: Rhabditoid larvae.**	**Thiabendazole Albendazole**	**Sanitation (prevent contamination of soil with human feces).**

Trichostrongylus orientalis

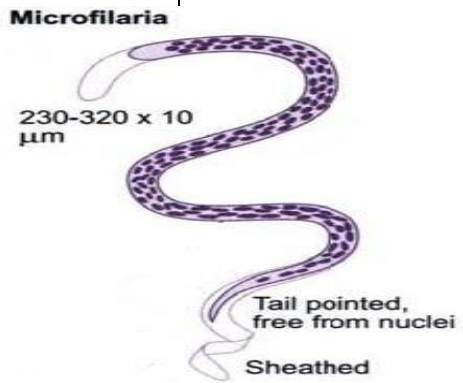
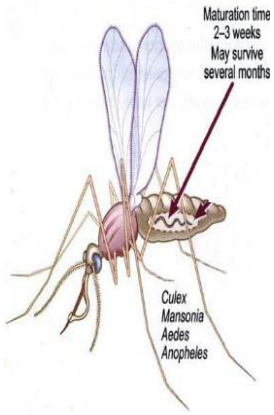
Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Trichostrongylus orientalis	----------	Trichostrongyliasis	Soil transmitted parasite	Adult	Threaded in mucosa of small intestine
				Eggs ,L1,L2	Soil
				L3	Enter by ingestion without migration to lungs
				L4	Small intestine
Infective stage	**Mode of transmission**	**Main pathogenesis**	**Diagnosis and Diagnostic Stage**	**Treatment**	**Control**
L3 pseudo-filariform Location of development: After a period in soil	Ingestion of pseudo-filariform larva.	Intestinal disturbances; transient eosinophilia; sever diarrhea;	Stool examination Diagnostic stage: Eggs in feces	Pyrantel pamoate	-Sanitation -Personal hygiene

Dracunculus medinensis

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Dracunculus medinensis	**Guinea worm**	**Dracunculiasis or Dracontiasis**	**Water transmitted pargeasite**	**Adult**	**Deep somatic&visceral C.T**
				L1	**water**
				L2,l3	**Copepods cyclops**
				L4	**Deep somatic&visceral C.T**

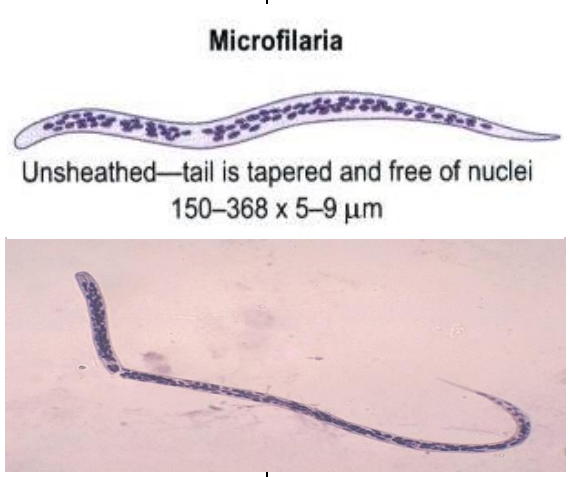
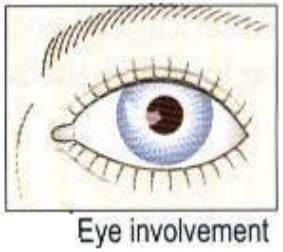
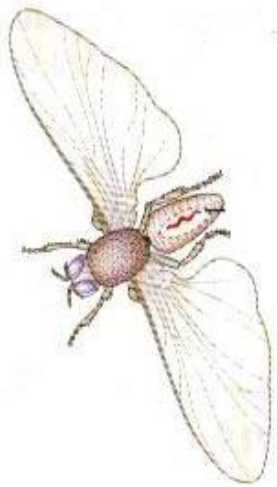
Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
L3 **Location of development:In Copepods cyclops**	**ingestionof water containing infected Cyclops**	**Skin lesion; erythema; rash; nausea; vomiting; diarrhea; dyspnea; syncope**	**Made from local blister, symptoms, outlines of♀ by reflected light** **Diagnostic stage: Adult female in the blister**	**-Extraction of the adult by rolling or by surgical removal.** **-Metronidazole to kill♀** **-Antihistamine or corticosteroids for allergy.**	**-Protection of drinking water from Cyclops** **-Piped water prevents transfer of larvae from water.**

Wuchereria bancrofti

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Wuchereria bancrofti 	**Sheathed microfilaria**	**Bancroftian filariasis Or Elephantiasis** 	**Insect transmitted parasite** 	**Adult**	**Lymph vessles**
				Microfilaria L1	**In lymphatic &migrate at night to blood**
				L2	**In Mosquito Culex**
				L3	**In Mosquito Culex**

Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
L3 filariform from mosquito during blood meal **Location of development: In Mosquito Culex**	**Insect bite**	**Lymphangitis; lymphadenitis lead to elephantiasis.**	**Blood film at (10pm- 2 am).** **Diagnostic stage: Sheathed microfilaria larva.**	**-Diethylcarbamazine to kill adults** **-Steroids to alleviate inflammatory symptoms**	**-Control vector(mosquito)** **-Treat all carriers in an endemic area**

Onchocerca volvulus

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Onchocerca volvulus 	**Unsheathed microfilaria**	**Onchocerciasis** **or** **Blinding filariasis** **or** **River blindness** 	**Insect transmitted parasite** 	**Adult**	**Adults mated pair coiled in subcutaneous T. as nodules**
				Microfilaria L1	**in upper layers of dermis, urine&rarely in blood**
				L2	**In Black fly**
				L3	**In Black fly**

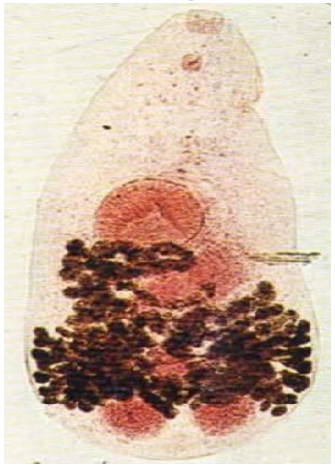
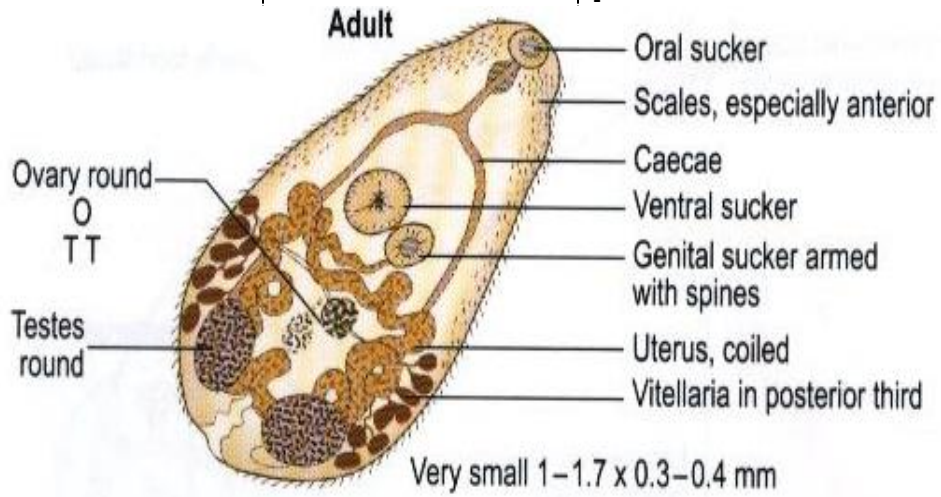
Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
L3 in infected black fly **Location of development: In black fly**	**Insect bite**	**Sowda**	**Skin snip Or Skin biopsy** **Diagnostic stage: Unsheathed microfilaria larva.**	**-Surgical removal of nodules (nodulectomy)** **-Diethylcarbamazine to kill adults**	**Vector control by insecticide**

TREMATODES

parasitology 2014-2015

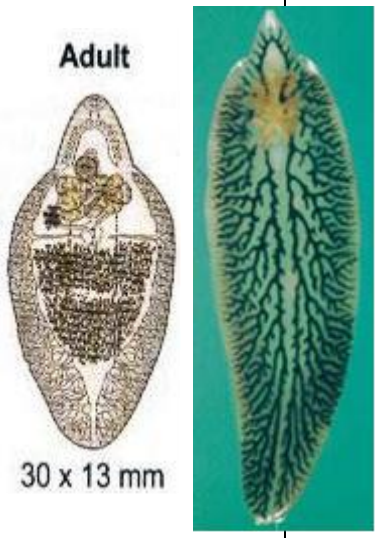
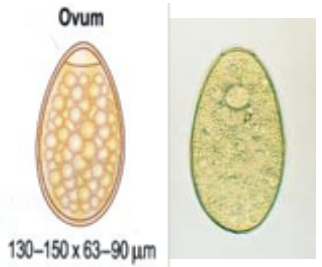
Ahmed Fadil

Heterophyes heterophyes

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Heterophyes heterophyes 	---------- 	**Heterophyiasis**	**Snail transmitted parasite**	**adult**	**Mucosa of samall intestine attached by suckers**
				Egg 	**stool**
				miracidim	**Water/snail**
				Sporocyst,Redia, Cercaria,	**Snail**
				Metacercaria	**Fresh water fish**

Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
Metacercaria encysted on under cooked or salted fresh water fish **<u>Location of development:</u>** **In tissue of fresh water fish**	**Ingestion of contaminated fresh water fish (brackish fish)**	**-Diarrhea** **-Dysentery**	**G.S.E** **Diagnostic stage: embryonated operculated ova**	**Praziquantel**	**-Infection can be prevented by not eating uncooked fish**

Fasciola hepatica

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Fasciola hepatica 	----------	**Fascioliasis**	**Snail transmitted parasite** 	**adult**	**large bile ducts & gall bladder attached by suckers**
				Egg 	**Stool**
				Sporocyst,Redia miracidim	**Lymnaeid snail**
				Cercaria	**Water**
				Metacercaria	**Watercress**

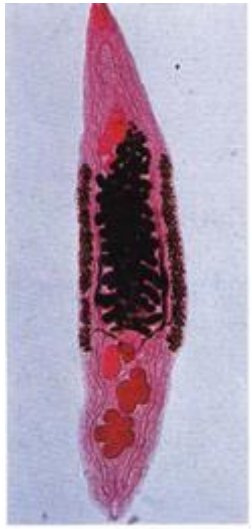
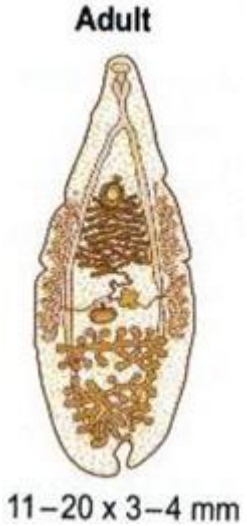
Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
Metacercaria encysted on watercress **Location of development: On water plant**	**Ingestion of contaminated not cleaned watercress**	**- Hepatomegaly** **-Cholecystitis** **-Cholengitis**	**G.S.E** **Diagnostic stage: unembryonated operculated ova**	**Praziquantel**	**-Human feces should not be used as fertilizer** **-Control of snail** **-Human should not consume raw watercress**

Dicrocoelium dendriticum

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Dicrocoelium dendriticum 	----------	Docrocoeliasis	Snail transmitted parasite	adult	small bile ducts of grazing animals
				Egg 	stool
				Sporocyst,Redia ,miracidim	Land snail
				Cercaria,	Ant
				Metacercaria	Ant

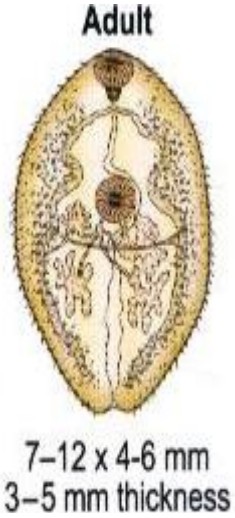
Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
Metacercaria on forging ant Location of development: In forging ant	Ingestion of infected forging ant on grass	- Hepatomegaly- -Cholecystitis -Cholengitis	G.S.E Diagnostic stage: Embryonated eggs in feces	Praziquantel	-Human feces should not be used as fertilizer -Control of snail -Human should not consume raw -vegetables and fruits

Clonorchis sinensis

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Clonorchis sinensis 	**Chines OR Oriental liver flukes** 	**clonorchiasis**	**Snail transmitted parasite**	**adult**	**Small to medium biliary ducts attached by suckers**
				Egg 	**stool**
				Sporocyst,Redia, miracidim	**Snail**
				Cercaria	**Snail**
				Metacercaria	**Flesh of fresh water fish**

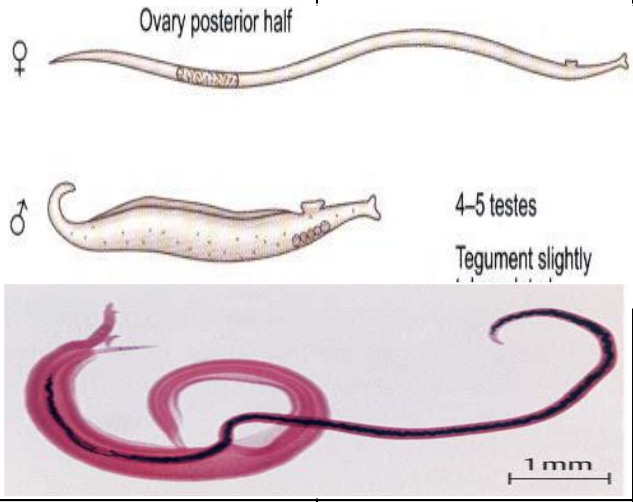
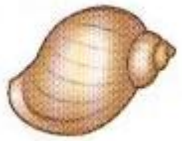
Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
Metacercaria encysted in fresh water fish **Location of development:** **In flesh of fresh water fish.**	**Ingestion of undercooked, salted,pickled or smoked freshwater fish**	**- Hepatomegaly** **-Cholecystitis** **-Cholengitis**	**G.S.E** **Diagnostic stage:** **Embryonated ova with operculum**	**Praziquantel**	**-Human feces should not be used as fertilizer** **-Control of snail** **-Human should not consume raw fish**

Paragonimus westermani

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Paragonimus westermani 	**Oriental lung fluke** 	**Paragonimiasis**	**Snail transmitted parasite** 	**adult**	**Fibrous tissue of lung attached by suckers**
				Egg	**Sputum & stool**
				Sporocyst,Redia, Miracidim	**Snail**
				Cercaria,	**Crab**
				Metacercaria	**Crab**

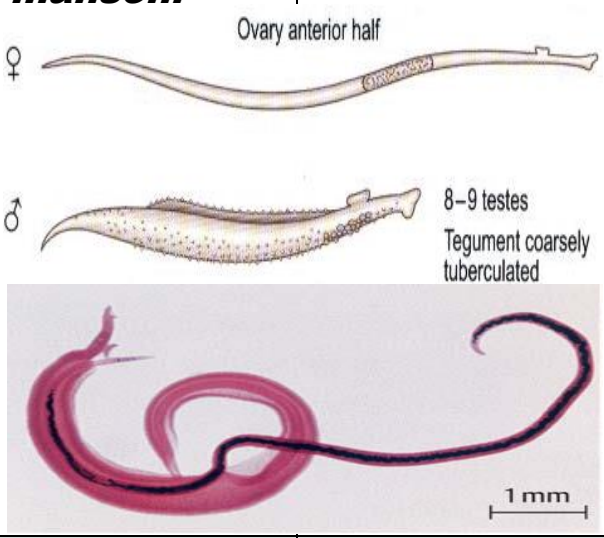
Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
Metacercaria encysted in Crab. **<u>Location of development:</u>** **In crab.**	**Ingestion of undercooked crab containing metacercaria**	**-Cough** **-Haemoptesis**	**Finding egg in sputum & stool** **<u>Diagnostic stage:</u>** **Unembryonated eggs in sputum** **Or in feces**	**Praziquantel**	**-Human feces should not be used as fertilizer** **-Control of snail** **-Human should not consume raw crab**

Schistosoma haematobium

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Schistosoma haematobium 	----------	-Urinary Schistosomiasis -Urinary bilharziasis -vesical bilharziasis 	Snail transmitted parasite  Host: *Bulinus*	adult	vesical venous plexus. attached by its sucker
				Egg 	Urine
				Sporocyst, Redia	Bulinus snail
				miracidim	Bulinus snail
				Cercaria	water

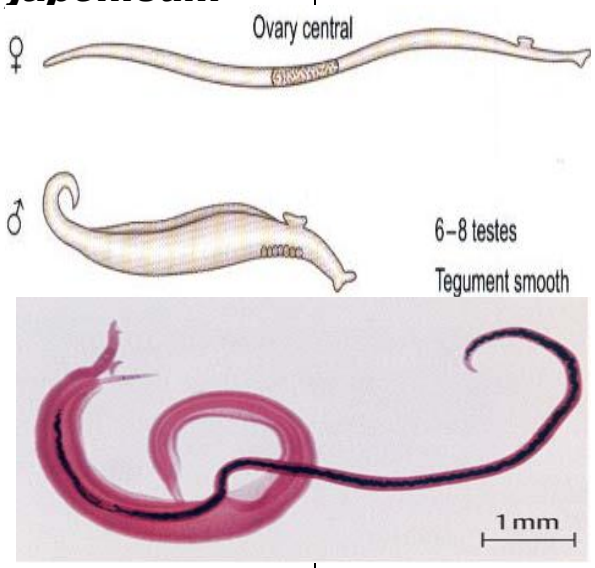
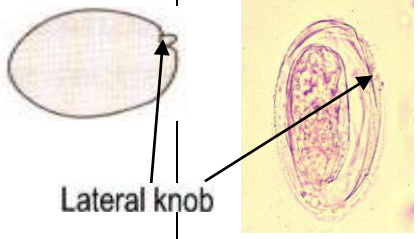
Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
Cercaria Location of development: In Bulinus snail	Skin penetration by Cercaria	Terminal painless haematuria	1.Identification (eggs in urine) 2.serological & immunologica tests Diagnostic stage: Ova with terminal spine	Praziquantel (Dose of 20-40mg/Kg body Wt. as single oral dose).	-Health education -Chemotherapy -Snail control

Schistosoma mansoni

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Schistosoma mansoni 	----------	-Intestinal Schistosomiasis -Intestinal bilharziasis 	Snail transmitted parasite  Host: *Biomphalaria*	adult	inferior mesenteric venule attached by its sucker
				Egg 	Stool
				Sporocyst,Redia	Biomphalaria snail
				miracidim	Biomphalaria snail
				Cercaria	water

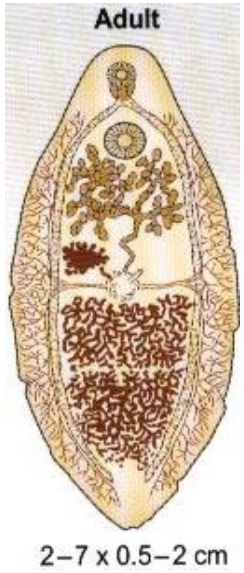
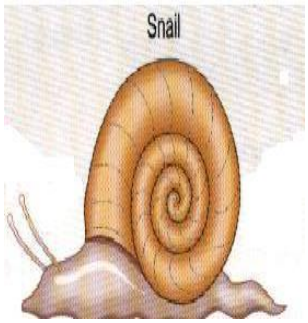
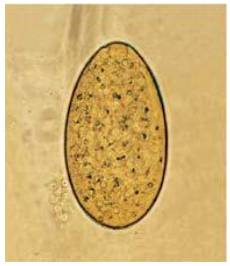
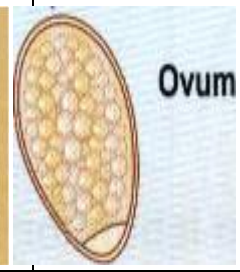
Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
Cercaria **Location of development:** **In Biomphalaria snail**	**Skin penetration by Cercaria**	**-Diarrhea** **-Dysentery**	**1.G.S.E** **2.immunological tests** **3.rectal biopsy** **Diagnostic stage:** **Ova with later spine**	**Praziquantel (Dose of 20-40mg/Kg body Wt. as single oral dose).**	**-Health education** **-Chemotherapy** **-Snail control** **-Human feces should not be used as fertilizer** **-Swimming in specific pools only**

Schistosoma japonicum

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Schistosoma japonicum 	**Oriental**	**-Schistosomiasis Japonicum** **-Intestinal bilharziasis**	**Snail transmitted parasite**  Host: *Oncomelania*	**adult**	**superior mesenteric venule attached by its sucker**
				Egg 	**Stool**
				Sporocyst, Redia	**Oncomelania snail**
				miracidim	**Oncomelania snail**
				Cercaria	**water**

Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
Cercaria **Location of development:** **In Oncomelania snail.**	**Skin penetration by Cercaria**	**-Diarrhea** **-Dysentery**	**1.G.S.E** **2.serological test** **Diagnostic stage** **Ova with minut blunt projection on outer surface**	**Praziquantel (Dose of 20-40mg/Kg body Wt. as single oral dose).**	**-Health education** **-Chemotherapy** **-Snail control**

Fasciolopsis buski

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Fasciolopsis buski 		**Fasciolopsiasis**	**Snail transmitted parasite** 	**adult**	**Duodenum attached by their suckers**
				Egg  	**stool**
				miracidim	**Water/snail**
				Sporocyst, Redia, Cercaria,	**snail**
				Metacercaria	**Water chestnut**

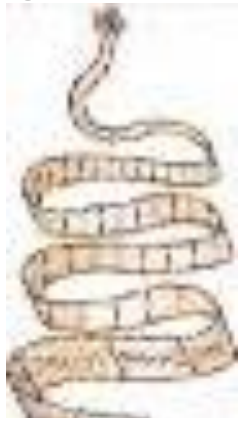
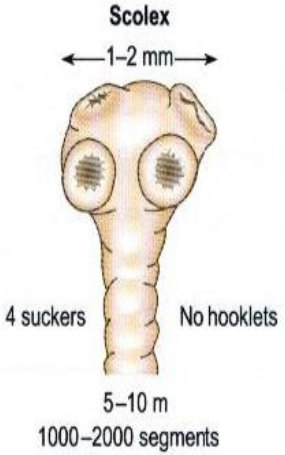
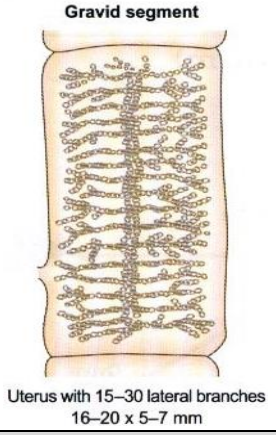
Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
Metacercaria encysted in water chestnut. **Location of development:** **On water chestnut.**	**Ingestion of contaminated water chestnut**	**-Diarrhea** **-Dysentery**	**G.S.E** **Diagnostic stage: Unembryonated operculated ova**	**Praziquantel**	**-Human feces should not be used as fertilizer**

CESTODES

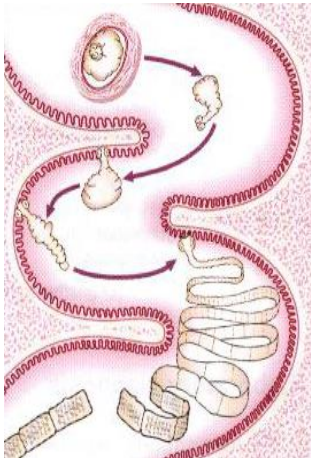
parasitology 2014-2015

Ahmed Fadil

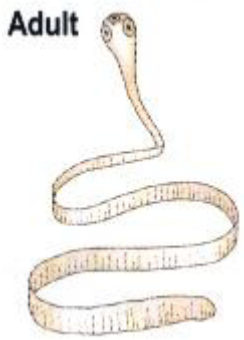
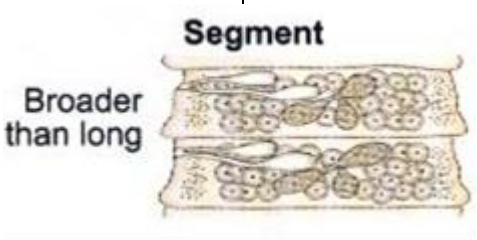
Taenia saginata

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Taenia saginata 	**Beef tapeworm** 	**Taeniasis saginata** **Or** **Beef tapeworm infection**	**Soil transmitted parasite** 	**Adult** **Egg**  **Cysticercus bovis**	**Middle third of small intestine attached by scolex suckers** **Feces** **Flesh of cow**
Infective stage	*Mode of transmission*	*Main pathogenesis*	*Diagnosis and Diagnostic Stage*	*Treatment*	*Control*
The larvae (cysticercus bovis) **<u>Location of development:</u>** **Muscles of cattle.**	**Ingestion of uncooked beef meat**	**Epigastric pain** **Vomiting; diarrhea;** **Abdominal discomfort**	**-Stool examination** **-Cellophane tape tech.** **<u>Diagnostic stage:</u>** **Eggs or gravid proglottids in stool or perianal area**	**Praziquantel &niclosamid**	**-Sanitation** **-Adequate cooking or freezing of cow meat or beef effective.**

Taenia solium

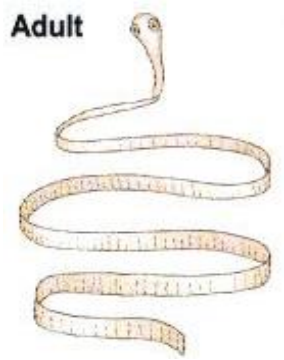
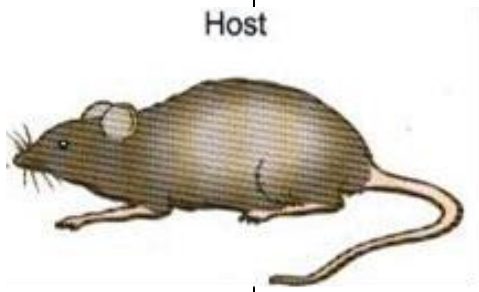
Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Taenia solium 	**Pork tapeworm** 	**Taeniasis solium** **OR** **Pork tapeworm infection**	**Soil transmitted parasite** 	**Adult**	**mucosa of small intestine attached by scolex suckers**
				Egg 	**Feces**
				cysticercus cellulosae	**Pork muscles**
Infective stage	*Mode of transmission*	*Main pathogenesis*	*Diagnosis and Diagnostic Stage*	*Treatment*	*Control*
The larvae cysticercus cellulosae &egg **Location of development:** **In muscles of pigs.**	**Ingestion of uncooked pork meat**	**Epigastric pain** **Vomiting; diarrhea;** **Abdominal discomfort** **-Cysticercus produce serious clinical consequences.**	**-Stool examination** **Diagnostic stage:** **Eggs or gravid proglottids in stool**	**Praziquantel &niclosamid**	**-Sanitation** **-Adequate cooking or freezing of pig meat are effective.**

Hymenolepis nana

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Hymenolepis nana 	**Dwarf tapeworm** 	**Hymenolepiasis Or dwarf tapeworm infection** 	**-Soil transmitted parasite - Auto infection parasite (external & enternal)**	**Adult**	**Attached to the mucosa of small intestine**
				Egg 	**Human feces**
				Cysticercoid	**Small intestine**

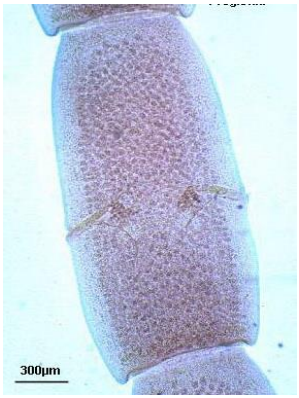
Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
-The larvae (cysticercoid) -Embyronated egg Location of development: In arthropod intermediate host.	**-Ingestion of infected arthropod Or -Embryonated eggs in contaminated food, water, hands**	**Pruritus of nose& anus**	**-Stool examination Diagnostic stage: Eggs in stool**	**Praziquantel &niclosamid**	**- Sanitation - Personal hygiene**

Hymenolepis diminuta

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Hymenolepis diminuta 	**Rat tapeworm**	**Hymenolepiasis Or Rat tapeworm infection** 	**Soil transmitted parasite**	**Adult**	**Attached to the mucosa of small intestine by the scolex's suckers**
				Egg 	**Human & rat feces**
				Cysticercoids	**Arthropod**

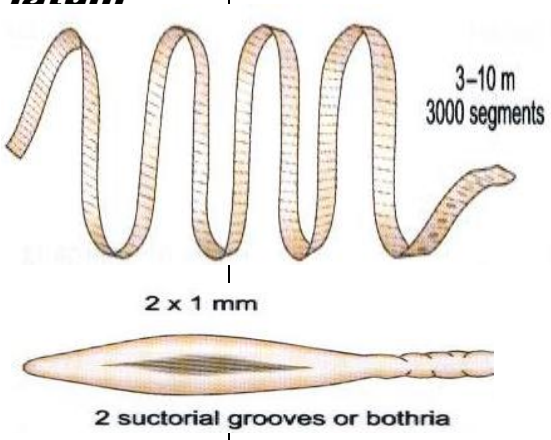
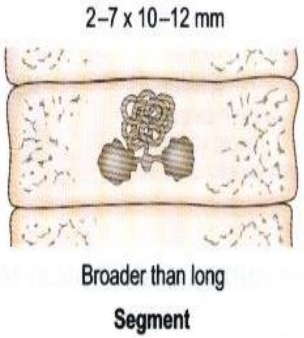
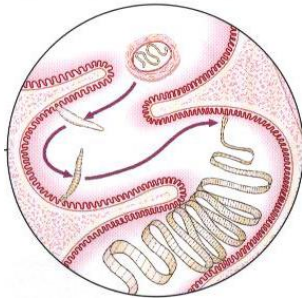
Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
The larvae (cysticercoid) In infected arthropod Location of development: In arthropod intermediate host.	**Accidental ingestion of infected insects in precooked cereals&directly from the environment.**	**Infection usually produces NO symptoms**	**-Stool examination** **Diagnostic stage: Eggs in stool**	**Praziquantel &niclosamid**	**Eradicate rats around the home**

Dipylidium caninum

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Dipylidium caninum 	Dog tape worm	Dipylidiasis Or Dog tapeworm infection	Soil transmitted parasite 	Adult	Attached to the mucosa of small intestine of man & dogs
				Egg 	Feces of man &dogs
				Cysticercoids	Arthropod

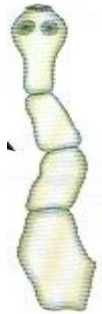
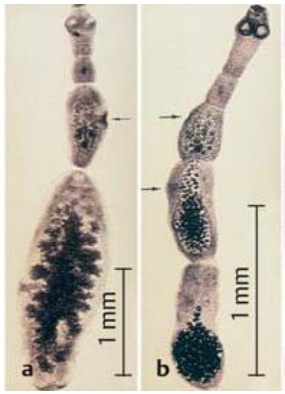
Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
The larvae (cysticercoid) In infected arthropod Location of development: In adult fleas	Ingestion of infected arthropod	Infection may produce diarrhea & unrest.	-Stool examination Diagnostic stage: Egg capsule in stool	Praziquantel &niclosamid	-Flea control of pets largely eliminate infection -Periodic administration of Taeniafuges to dogs & cats

Diphyllobothrium latum

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Diphyllobothrium latum 	**Fish tapeworm**	**Diphyllobotheriasis** **Or** **Fish tapeworm infection** 	**Water transmitted parasite** 	**Adult** **Plerocercoid** **Procercoid** **Coracidium** **Egg** 	**Attached to small intestinal wall** **Freshwater fish** **Cyclops** **Water** **Feces**

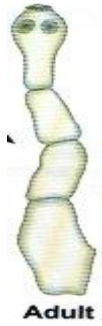
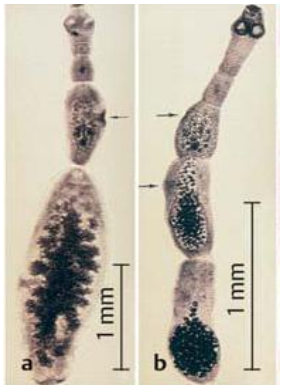
Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
Plerocercoid larva (Sparganum) **In infected fresh water fish.** **Location of development:** **In freshwater fish.**	**Ingestion of infected** **Fresh water fish**	**Infections produce diarrhea; abdominal pain; fatigue; vomiting; dizziness; nausea.**	**Stool examination** **Diagnostic stage:** **Egg with operculum in stool**	**Praziquantel & niclosamid**	**-Freezing for 24 h. thorough cooking the fish.** **-Fish reservoirs should be kept free of raw sewage.**

Echinococcus granulosus

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Echinococcus granulosus  Adult	..... 	Unilocular Hydatid disease Or Echinococcosis  Brood capsules of Echinococcus granulosus	Soil transmitted parasite	Adult	Attached to the small intestine of dogs
				Egg 	Feces of dogs
				Hydatid cyst	Tissues &organs of man &sheep

Infective stage	Mode of transmission	Main pathogenesis	Diagnosis and Diagnostic Stage	Treatment	Control
Embryonated eggs in feces Location of development: In the soil	Ingestion of eggs in feces	Differ according to site	-Clinical symptoms -Casoni test -X-ray -Serological tests -Aspiration of fluid Diagnostic stage: Hydatid larva or cyst	Surgical removal Inactivation of hydatid sand, Mebendazole result in some success	Avoid contact with infected dogs & cats & eliminate their infection

Echinococcus multilocularis

Scientific name of parasite	Common name	Disease	Kind of parasite according to the mode of transmission	Stages	Location
Echinococcus multilocularis  Adult	..... 	Alveolar Hydatid disease	Soil transmitted parasite 	Adult	Attached to the small intestine of foxes
				Egg 	Feces of foxes
				Hydatid cyst	Tissues &organs of man &rodents
Infective stage	**Mode of transmission**	**Main pathogenesis**	**Diagnosis and Diagnostic Stage**	**Treatment**	**Control**
Embryonated eggs in feces Location of development: In soil	Ingestion of eggs in feces	Differ according to site	Specific diagnosis might be missed due to unfamiliarity with this type of infection Diagnostic stage: Hydatid larva or cyst	Surgical removal , but it is not amenable, albendazole r have some anti parasitic effect	Avoid contact with infected dogs & cats & eliminate their infection

Review of Helminthes

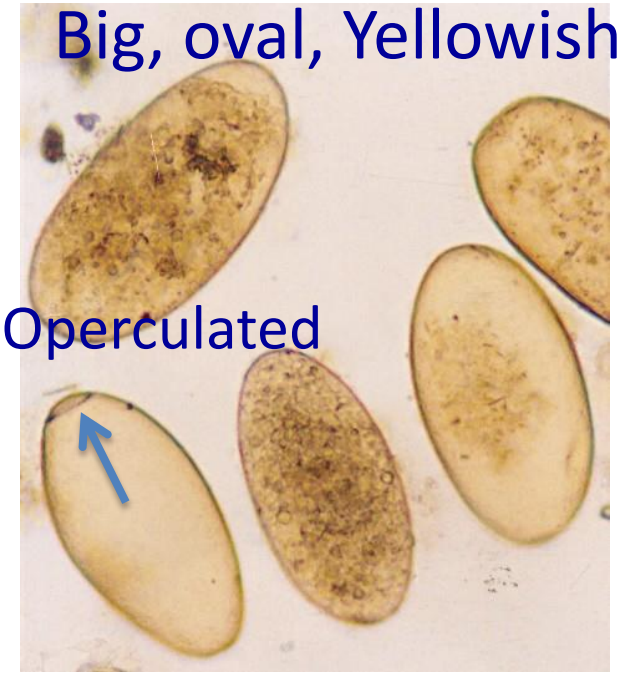
Collected by:

Ahmed fadil

2014-2015

Eggs of Helminthes

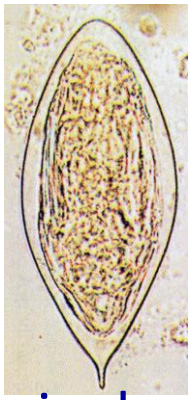
Big, oval, Yellowish



Operculated

Fasciola eggs

Oval



Terminal spine

S.haematobium

egg

Oval

Lateral spine

S.mansoni

egg

Operculated

Oval, thick-shelled

D.latum egg

Oval, thick-shelled

Heterophyes eggs

A.F.A

Eggs of Helminthes (continued)

Thick shell, mamillated surface

Brownish

Ascaris egg

Barrel-shaped

2 mucus plugs

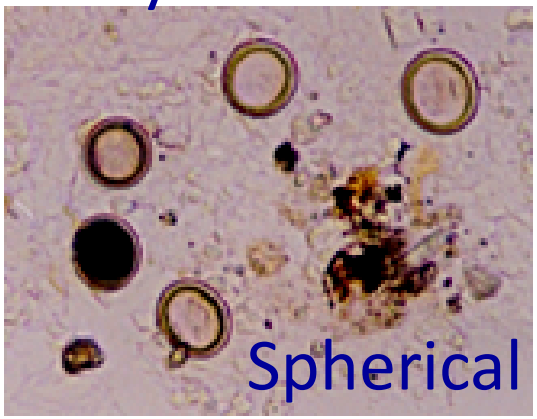
Trichuris egg

Plano-convex

Translucent

Enterobius eggs

Radially-striated shell



Taenia eggs

Adult Trematodes

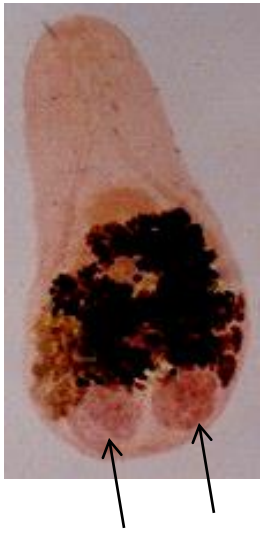
Leaf-like flat worm

Lateral borders are parallel

F.gigantica

Lateral borders are converging

F.hepatica



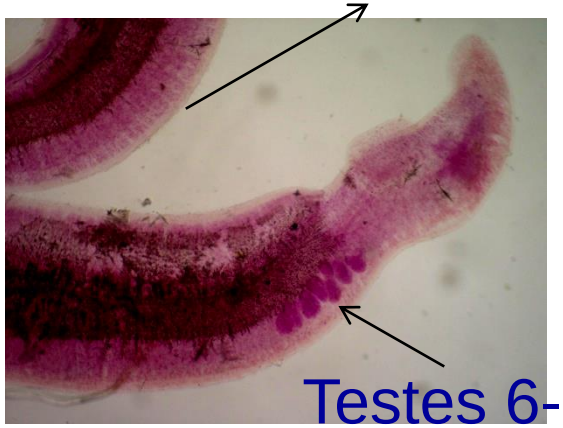
Pear-shaped flat worm

Has 2 globular testes at posterior end

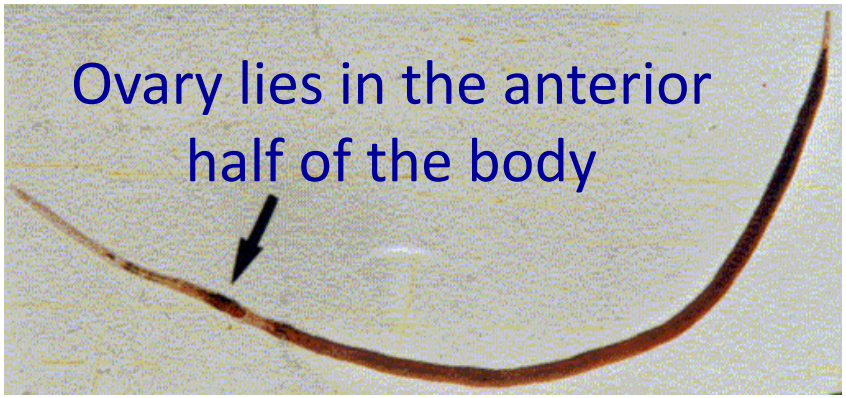
Adult *H.heterophyes*

Adult Trematodes (continued)

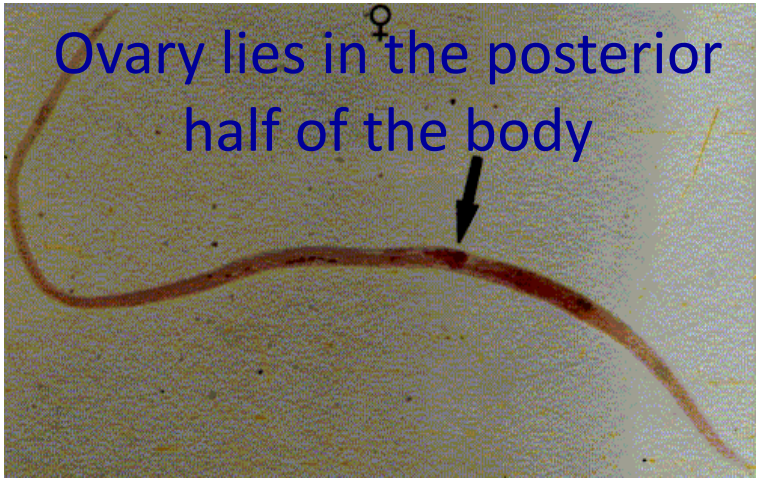
♂ *S.mansoni*



Long & slender



♀ *S.mansoni*



♀ *S.haematobium*

Adult *Schistosoma* (in copula)

Adult female *Schistosoma*

Ovary in anterior half of body

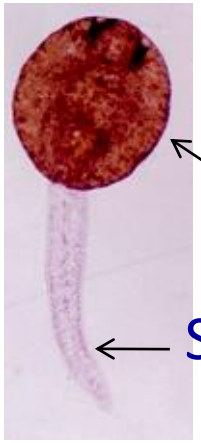
Cynaecophoric canal

Adult male *Schistosoma*

A.F.A

Cercariae

Cercaria of *Fasciola* (leptocercous cercaria)



Cercaria of *Schistosoma* (furcocercous cercaria)

Snails in boxes

Short spire

Blunt apex

Left-sided opening

Bulinus truncatus

Short spire

Pointed apex

Right-sided opening

Lymnaea cailliaudi

Pirenella conica

Flat, Button-like

Left-sided opening

Biomphalaria alexandrina

Adult Cestodes

2 adult Cestodes come whole worm on a slide namely:

Echinococcus granulosus *Hymenolepis nana*

Globular scolex with hooks

Strobila: 3 segments

Small globular scolex with rostellum & hooks

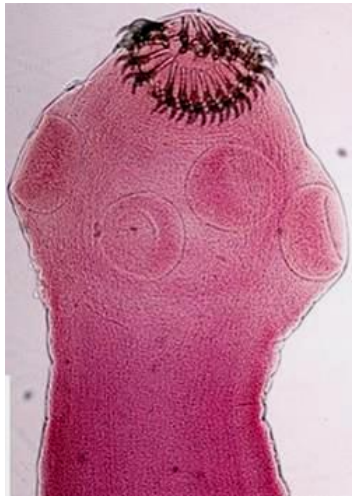
Segments broader than long

The rest of adult Cestodes come either

Scolex Mature segment Gravid segment

Adult Cestodes Scolices

Rostellum with 2 circles of hooks



NO rostellum , NO hooks

Globular with 4 suckers

T.solium scolex

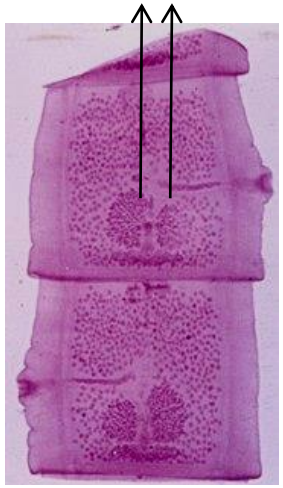
T.saginata scolex

A.F.A

Adult Cestodes Segments

Mature segment of *Taenia*

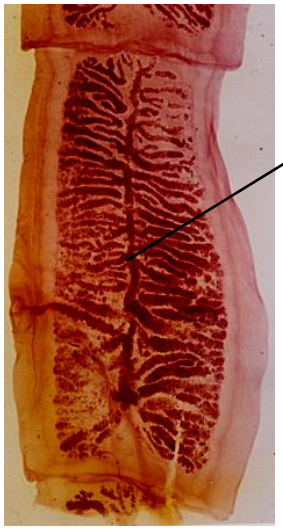
Bilobed ovary



Segment is Squarish

Gravid segment of *Taenia saginata*

Segment is longer than broad

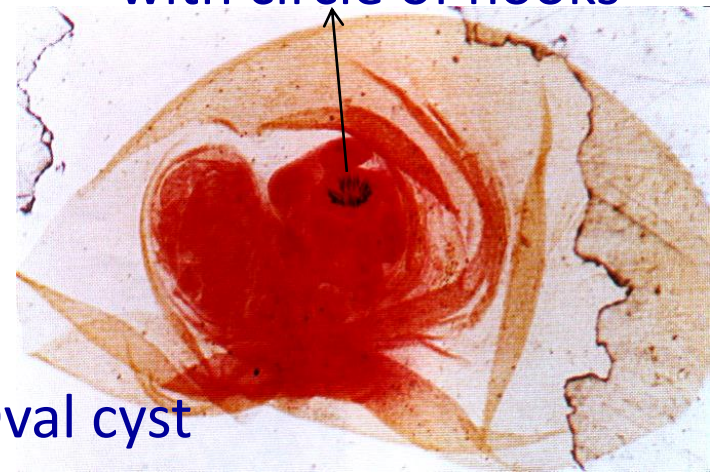


Longitudinal median uterus with many lateral branches

A.F.A

Larval Cestodes

Invaginated scolex with circle of hooks

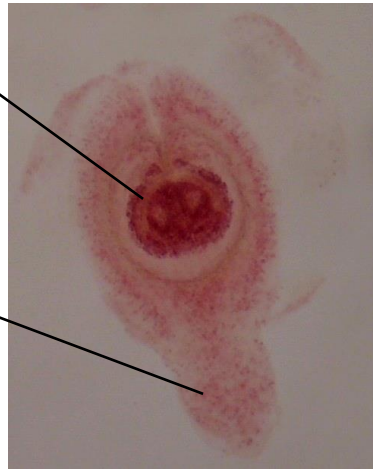


Oval cyst

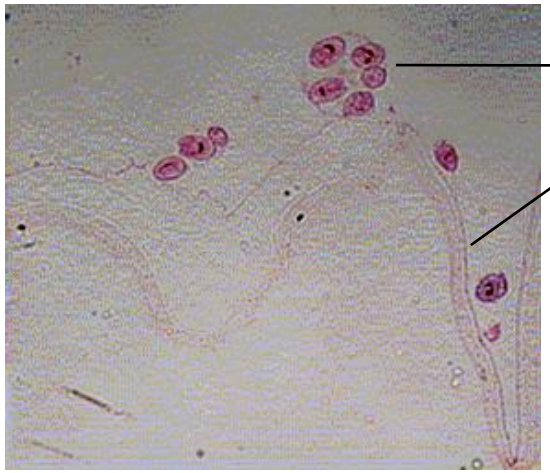
Cysticercus cellulosae

Invaginated scolex in upright position with NO hooks

Tail-like appendage



Cysticercoid diminuta



Brood capsule

Has Fibrous, laminated & germinal layers

Hydatid cyst

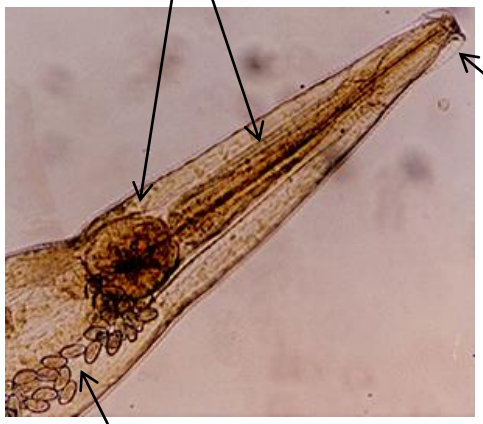
Carrying circle of hooks

Scolices: oval bodies

Hydatid sand

Adult Nematode

Double-bulbbed oesophagus



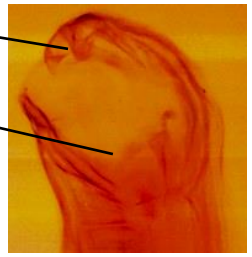
Cephalic alae

Shows *Enterobius* Eggs

Anterior end of ♀ *E.vermicularis*

Has 2 pairs of teeth

Has 2 plates



Buccal capsule of Ancylostoma

Has a buccal capsule

Copulatory Bursa

♂*Ancylostoma duodenale*

Pointed end

♀*Ancylostoma duodenale*

Adult Nematode

The body is whip-like

Coiled posterior end

Adult ♂ *Trichuris trichiura*

Straight posterior end

Adult ♀ *Trichuris trichiura*

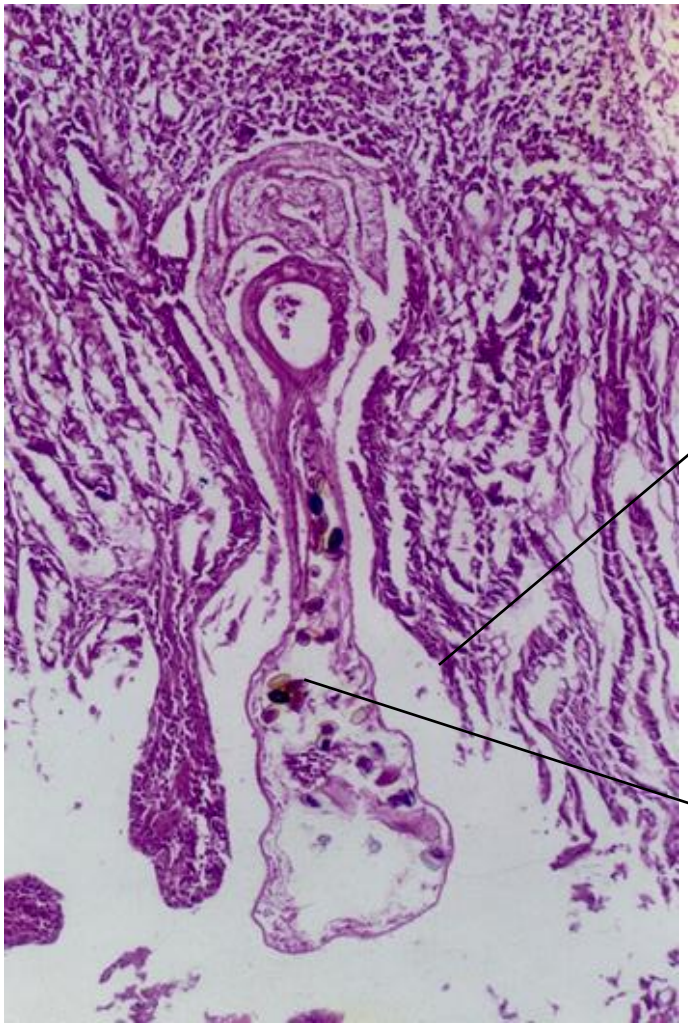
Cellular oesophagus

Adult ♀ *T.spiralis*

Blunt posterior end

A.F.A

Sections of Helminths



Adult *Heterophyes* in small intestine

Sections of Helminths

Cysts are ellipsoidal in shape

Long axis of cysts are parallel along long axis of muscle fibres

Encysted larva of *T.spiralis*

Microfilariae inside 2 uteri

Worms are surrounded by Fibrous tissue

Onchocerca nodule

A.F.A