DOWNLOAD PDF 9. ANNELIDS, PARASITIC WORMS, PROTOZOANS, ETC.

Chapter 1 : Aquarium, Fish Parasites, Worms; Planaria, Nematodes, Detritus, Anchor

The Biodiversity Heritage Library works collaboratively to make biodiversity literature openly available to the world as part of a global biodiversity community.

See text page The Rotifers. The name means "wheel bearing," a reference to the corona, a feeding structure see below. They are triploblastic, bilaterally symmetrical, and unsegmented. They are considered pseudocoelomates. Rotifers have a three part body: The head has a ciliary organ called the corona that, when beating, looks like wheels turning, hence the name of the phylum. The gut is complete i. They have protonephridia but no specialized circulatory or gas-exchange structures. Most live in fresh water, a very few are marine or live in damp terrestrial habitats. They typically are very abundant. There are about 2, species. Parthenogenesis, where females produce more females from unfertilized but diploid eggs, is common. Males may be absent as in bdelloid rotifers or reduced. When males are present, sexual and asexual life cycles alternate. Males develop from unfertilized haploid eggs and are haploid. Males produce sperm by mitosis which can fertilize haploid eggs, yielding a diploid zygote that develops into a diploid female. Sexual reproduction occurs primarily when living conditions are unfavorable. Most structures in rotifers are syncytial "a mulitnucleate mass of protoplasm not divided into separate cells," or "a multinucleated cell" and show eutely here, "constant or near-constant number of nuclei". See text pages - Name from the Greek for "thread". This phylum consists of the round worms. There are about 12, named species but the true number probably is 10 - times this! These animals are triploblastic, bilaterally symmetrical, unsegmented pseudocoelomates. They are vermiform, or wormlike. In cross-section, they are round, and covered by a layered cuticle remember this cuticle!! Probably due to this cuticle, juveniles in this phylum grow by molting. The gut is complete. They have a unique excretory system but they lack special circulatory or gas-exchange structures. The body has only longitudinal muscle fibers. The sexes are separate. Nematodes can be incredibly common, widespread, and of great medical and economic importance. They are parasites of humans and our crops. They can live pretty much anywhere. In one rotting apple, there can be up to 90, nematodes, and in one tablespoon of coastal mud, there can be species of nematodes! Nematodes can be free living or important parasites of our crops, or of humans and other animals. They have become very important in development studies, especially the species Caenorhabditis elegans, presumably due to its small size and constancy of cell number eutely - cells in C. Name means "ringed", from the Greek annulatus. This phylum consists of earthworms, leeches, and various marine worms given many different names e. There are about 12, - 15, species. Animals in this phylum are triploblastic, bilaterally symmetrical, segmented coelomates. Development is typically protostomous. They have a complete circulatory system, and a well-developed nervous system. Typically, each segment has paired epidermal "bristles" setae or chaetae. Most are marine but they are successful occupants of almost anywhere sufficient water is available. They can be free living, parasitic, mutualistic, or commensalistic. Major advances of this phylum include the true coelom, segmentation, both longitundinal and circular muscles, a closed circulatory system and, for most, a more advanced excretory system metanephridia. There are three main classes of Annelids Class Oligochaeta earthworms Class Polychaeta marine worms, fan worms, sand worms, paddle worms Class Hirudinea leeches Arthropods Name means "jointed feet". This phylum consists of spiders, ticks, mites, insects, lobsters, crabs, and shrimp, and is the largest of all the phyla. So far, over 1 million species have been named, and it is likely that the true number out there is 10 - times greater. This phylum also includes the extinct trilobites, which were prevalent in the Paleozoic era. Because of their exoskeletons, these animals fossilized well and over species have been named. These animals are triploblastic, bilaterally symmetrical, segmented, protostome coelomates. The coelom is generally reduced to portions of the reproductive and excretory systems. They have an open circulatory system. The most notable advancement of this phylum is a rigid exoskeleton. It also was partially responsible for the ability of the arthropods to move on to land. There are several major groupings of arthropods: The chelicerates eurytperids, horseshoe crabs, scorpions, spiders, ticks have clawlike feeding appendages. They lack antennae and usually have simple eyes. The crustaceans crabs, shrimp, lobsters, barnacles and many others have two pairs of antennae and branched

biramous appendages.

Chapter 2 : Examples of Protozoa (With Diagram)

Compare Report Of The Canadian Arctic Expedition Vol. 9 - Annelids Parasitic Worms Protozoans Etc. Part G-h Trematoda And Cestod prices online with PriceCheck. Found 1 store. Lowest price R

Vasculature[edit] Worms of the genus Serpula have a very unusual dual circulatory system, consisting of a central system of large vessels through which a continuous true circulation of blood is maintained, and also a peripheral system of small, predominantly blind-ending vessels which alternately empty and fill in a tidal fashion. The ventral vessel and the sinus communicate with each other by segmentally arranged ring vessels, and by a dorsal vessel, a transverse vessel, and a pair of circum esophageal vessels situated at the anterior end of the thorax. Instead of venous and arterial blood flowing through afferent and efferent vessels within the radiole, there is a single branchial sinus through which blood flows in both directions, in a tidal fashion. The vessels of the peripheral system receive their blood from the central system, returning it back along the same channels i. The single vessels in each radiole of the branchial crown, and the vessels of opercula, are all branches of the two branchial vessels. The movement of blood in the capillaries of the thoracic membrane and body wall continues, however. Under these circumstances, respiratory exchange is probably carried out between the blood in these vessels and the surrounding water, which is kept moving through the tube by vigorous pumping movements of the abdomen and also by the activity of the ciliary tracts. The body surface in the larger serpulids, like Serpula, has a rich blood supply, and the water in contact with this surface is constantly renewed. It seems probable that the outer body surface of serpulids serves as a respiratory membrane , supplying oxygen to the underlying muscles by diffusion. While all sabellids and serpulids employ chlorocruorin as an oxygen transport macromolecule, [30] [31] [32] Serpula is the only genus that appears to possess both hemoglobin as well as chlorocruorin. A dichromatic compound, chlorocruorin is noted for appearing green in dilute solutions, though it appears light red when found in concentrated solutions. This enormous macromolecule is free floating in the plasma, and not contained within red blood cells. Nervous system[edit] Like other annelids, these worms possess well-developed nervous systems. The nervous system consists of a central brain in the upper part of the head, which is relatively large compared with that of other annelids. Extending from the brain is a large ventral nerve cord running the length of the body. There are many supporting ganglia along the length of this cord including pleural, pedal and cerebral ganglia , and a series of small nerves in each body segment. Signals transmitted through the pedal ganglia allow the worms to retract rapidly into their tube if threatened. Reproductive system[edit] Sexes are separate. Like other annelids, the coelom stores and provides nutrients for gametes. Length of the planktonic stage is unknown but comparison with other serpulids suggests it may be between six days and two months, although in other species the period has been shown to vary with season, salinity or food availability, and delayed settling may cause reduced discrimination of substrata during settling see ten Hove, for additional references. Digestive system[edit] Worms of the genus Serpula are filter feeders , and possess a complete digestive system. Like other polychaetes, Serpula excrete with fully developed nephridia.

Chapter 3 : 10 Examples of Protozoa | Their Characters with Diagrams

Excerpt from Report of the Canadian Arctic Expedition , Vol. 9: Annelids Parasitic Worms, Protozoans, Etc.; Part J: Polychaeta (Supplementary); Southern Party, It is interesting to note that while the Canadian specimen of blog.quintoapp.com11c1a_l1s approaches m the character.

However, the frontmost and rearmost sections are not regarded as true segments as they do not contain the standard sets of organs and do not develop in the same way as the true segments. This pattern is called teloblastic growth. These are secreted by the one-cell deep epidermis outermost skin layer. A few marine annelids that live in tubes lack cuticles, but their tubes have a similar structure, and mucus -secreting glands in the epidermis protect their skins. Below this are two layers of muscles, which develop from the lining of the coelom body cavity: The simplest are unjointed and form paired bundles near the top and bottom of each side of each segment. The chetoblasts produce chetae by forming microvilli , fine hair-like extensions that increase the area available for secreting the cheta. When the cheta is complete, the microvilli withdraw into the chetoblast, leaving parallel tunnels that run almost the full length of the cheta. Parapodia are unjointed paired extensions of the body wall, and their muscles are derived from the circular muscles of the body. They are often supported internally by one or more large, thick chetae. The parapodia of burrowing and tube-dwelling polychaetes are often just ridges whose tips bear hooked chetae. In active crawlers and swimmers the parapodia are often divided into large upper and lower paddles on a very short trunk, and the paddles are generally fringed with chetae and sometimes with cirri fused bundles of cilia and gills. From each segmental ganglion a branching system of local nerves runs into the body wall and then encircles the body. Vertebrates have a different system, in which one neuron controls a group of muscle fibers. Their large diameter decreases their resistance, which allows them to transmit signals exceptionally fast. This enables these worms to withdraw rapidly from danger by shortening their bodies. Experiments have shown that cutting the giant axons prevents this escape response but does not affect normal movement. Each septum forms a sandwich with connective tissue in the middle and mesothelium membrane that serves as a lining from the preceding and following segments on either side. Each mesentery is similar except that the mesothelium is the lining of each of the pair of coelomata, and the blood vessels and, in polychaetes, the main nerve cords are embedded in it. Parts of the mesothelium, especially on the outside of the gut, may also form chloragogen cells that perform similar functions to the livers of vertebrates: In some species coelomocytes may also contain a respiratory pigment â€” red hemoglobin in some species, green chlorocruorin in others dissolved in the plasma [20] â€” and provide oxygen transport within their segments. Respiratory pigment is also dissolved in the blood plasma. Species with well-developed septa generally also have blood vessels running all long their bodies above and below the gut, the upper one carrying blood forwards while the lower one carries it backwards. Networks of capillaries in the body wall and around the gut transfer blood between the main blood vessels and to parts of the segment that need oxygen and nutrients. Both of the major vessels, especially the upper one, can pump blood by contracting. In some annelids the forward end of the upper blood vessel is enlarged with muscles to form a heart, while in the forward ends of many earthworms some of the vessels that connect the upper and lower main vessels function as hearts. Species with poorly developed or no septa generally have no blood vessels and rely on the circulation within the coelom for delivering nutrients and oxygen. They function as the main blood vessels, although they are side-by-side rather than upper and lower. However, they are lined with mesothelium, like the coelomata and unlike the blood vessels of other annelids. Leeches generally use suckers at their front and rear ends to move like inchworms. The anus is on the upper surface of the pygidium. However, many polychaetes and some clitellates the group to which earthworms belong have gills associated with most segments, often as extensions of the parapodia in polychaetes. The gills of tube-dwellers and burrowers usually cluster around whichever end has the stronger water flow. Many polychaetes have a muscular pharynx that can be everted turned inside out to extend it. In these animals the foremost few segments often lack septa so that, when the muscles in these segments contract, the sharp increase in fluid pressure from all these segments everts the pharynx very quickly. Two families , the Eunicidae and

Phyllodocidae , have evolved jaws, which can be used for seizing prey, biting off pieces of vegetation, or grasping dead and decaying matter. On the other hand, some predatory polychaetes have neither jaws nor eversible pharynges. Selective deposit feeders generally live in tubes on the sea-floor and use palps to find food particles in the sediment and then wipe them into their mouths. Filter feeders use "crowns" of palps covered in cilia that wash food particles towards their mouths. Non-selective deposit feeders ingest soil or marine sediments via mouths that are generally unspecialized. Some clitellates have sticky pads in the roofs of their mouths, and some of these can evert the pads to capture prey. Leeches often have an eversible proboscis, or a muscular pharynx with two or three teeth. The bacteria convert inorganic matter â€” such as hydrogen sulfide and carbon dioxide from hydrothermal vents , or methane from seeps â€” to organic matter that feeds themselves and their hosts, while the worms extend their palps into the gas flows to absorb the gases needed by the bacteria. The difference is that protonephridia combine both filtration stages in the same organ, while metanephridia perform only the second filtration and rely on other mechanisms for the first â€” in annelids special filter cells in the walls of the blood vessels let fluids and other small molecules pass into the coelomic fluid, where it circulates to the metanephridia. As a result, the hindmost segment before the growth zone and pygidium has no structure that extracts its wastes, as there is no following segment to filter and discharge them, while the first segment contains an extraction structure that passes wastes to the second, but does not contain the structures that re-filter and discharge urine. Asexual reproduction in oligochaetes is always by dividing into two or more pieces, rather than by budding. Two polychaete genera , Chaetopterus and Dodecaceria , can regenerate from a single segment, and others can regenerate even if their heads are removed.

Chapter 4 : Annelids, parasitic worms, Protozoans, etc. Part M Foraminifera / - CORE

Original issued in series: Report of the Canadian Arctic Expedition ; v. 9, pt. D Includes list of titles in series Bibliography: p. 8DD Filmed from a copy of the original publication held by Queen's University, Stauffer Library, Kingston

These infect the gastrointestinal tract of live-bearers, cichlids and other species of freshwater fish. Symptoms but not necessarily proof of infection: Usually, the first CLEAR indication of infection is a red worm extending from the anus of a fish sometimes mistaken for feces. Fish is fading away, looks as if it is starving to death. If the intermediate host crustacean is eaten by a fish, then the third-stage larvae becomes active and will start feeding again. After two more molts, it will become a sexually mature male or female adult worms. These are the distinctive red worms aquarists see protruding from the vents of infected aquarium fish. One exception is the Camallanus cotti which has the ability to skip this stage, if a suitable crustacean host is not available. However there still needs to be a pathway to infection, which still often can rule out reinfection. Consumption of an infected fish by a tank mate or ingestion of feces produced by infected fish are possible modes of continuing the life cycle and thus reinfection. Removal of dead fish and other methods of consumption along with isolation and quick clean up of any and all feces should break this life cycle from my experience. The use of Metronidazole has the added benefit in that it is effective for anaerobic internal infections, common to the gut. Generally only one treatment is needed if fed, two to three times in one day , although re-treatment days days later of a product containing Praziquantel is required. Fish food should be soaked for 15 minutes. Even in doses needed to treat internal worms, "Neutropenia" may result which then results in the fish being more susceptible to bacterial infections. Personally I would avoid Levamisol and save it as a treatment as a last resort due to the problems it can cause with the fish immune system, especially if over dosed accidentally. When used correctly and optimum water conditions, the formula in "General Cure" while not as strong, is immensely safer Most commonly available as Levamisol HCL which is slightly diluted of the active ingredient of Levimisol. See this article for use and cautions: Aquatic Medications 3; chemical and parasite treatments Treat with Levimisol once followed by a water change and treatment in days. Treat a third time after weeks following the second treatment. Be careful, as Levamisol can kill many worms quickly, which with most internal nemtode infections is not an issue since they are not generally widespread. Fenbendazole can be mixed with fish foods, but often flavor enhancers such as AAP Garlic Guard are needed to hide this medication so that fish will accept the food "spiked" with Fenbendazole.

Chapter 5 : What protists are parasitic? | Socratic

Abstract. Original issued in series: Report of the Canadian Arctic Expedition, ; v. 9, pt. A."Southern Party, "Bibliography: p. 8A and 19A.

Vorticella Stentors These protozoans are of different shapes and sizes with varying habitats. Many of them are free-living while others live as parasites. Because of single-celled feature, they resembles the bacteria. But unlike bacteria, they are eukaryotes and do not possess the cell wall. Examples of Protozoa 1. Amoeba is a protozoan that has no specific shape. It is the most common protozoa found in fresh water. They live individually and can move in search of food. Most freshwater bacteria are microscopic while marine ones are visible to naked eye. The structure is so simple with no specialized appendages or sexual parts. They move by pseudopodia which are the extensions of cell membrane and cytoplasm. The cell has a contractile vacuole which helps to remove excess water from the cell. Since the cell cytoplasm is hypertonic than the surrounding fresh water, the water tends to accumulate inside the cell. This water is expelled out by the vacuole. They do not have the mouth but just engulf solid particles by phagocytosis from any point of the cytoplasmic membrane. They also drink dissolved form of liquid nutrients by pinocytosis. Their food includes live microbes like bacteria and also dead organic matter. They reproduce by binary fission asexually. But recent studies show them to even have sexual means of reproduction. Some types of amoeba also cause severe diseases to humans. By Claudio Miklos Euglena is an eye-shaped freshwater protozoan. They impart the green color to the water ponds when grown extensively. Unlike amoeba, they have well developed with cell organelles like eyespot Stigma , flagella, etc. Unlike amoeba, they can act as autotrophs, as they make their own food. The eyespot contains chlorophyll like pigment by which they perform photosynthesis. They can also live as heterotrophs and eat external substances. Hence they have both plant and animal characters. This is a slipper-shaped protozoan. It has cilia all over its body surface. These cilia help in its locomotion. They are found in freshwater and more evolved than the amoeba. They have a mouth, cilia and also go for sexual reproduction. This is an amoeba which infects large intestine and other tissues. It spreads through contaminated water and food. It is anaerobic and resides in the low oxygen atmosphere. Entamoeba in the intestine by cdc. Unlike typical amoeba, it has a single pseudopod. It is a mono-genetic parasite, i. In the intestine, it resides in the mucous and sub-mucus layers. Trichomonas vaginalis; This is a protozoan which causes vaginal infection. It is a type of sexually transmitted diseases. The protozoa are flagellate and are anaerobic. Leishmania is of two kinds as Leishmania donovani and Leishmania tropica. Donovani infects the liver, spleen, white blood cells , etc. It causes kala-azar dum dum fever and visceral leishmaniasis. The infection is spread by sandflies. Commonly known as a malarial protozoan parasite. It is spread from human to human by the bite of a female Anopheles mosquito. This protozoan is of 4 types like plasmodium vivox, P. Of them the last one is deadly. It eats up hemoglobin and converts it into a poisonous substance Haemozoin. When the RBC breaks down, the hemozoin is released causing chills, headache and fever. They have a cycle of 24 hours so, they break down the infected RBC and attack new one every 24 hours. So the infected person experiences feverish symptoms in intervals of 24 hours. Trypanosoma gambiense is protozoa which cause sleeping sickness. They are spread by the bite of a tsetse fly. Food and agriculture organization of united states. The parasite is oval shaped and has flagella. It is a digenetic parasite. The first host is man or animal and the second host is an insect called tsetse fly. It resides in the small intestine and causes dysentery. It is a ciliated protozoan living in the large intestine. It causes ulcers and chronic dysentery. The transmission occurs from man to pig, fecal-oral route and impure water. These are bell-shaped ciliates living in mud and fresh water. They eat bacteria and sometimes survive on the surfaces of mosquitoes, prawns, etc. While moving, they make a vortex in the water and hence the name. These are trumpet-shaped protozoa. They dwell in freshwater and some are found in marine waters. They have symbiotic relationship with few algae. Protozoans physical structure is a simple cell. They have a distinct nucleus and other essential organelles and also possess an ability to move. They multiply by sexual and asexual reproduction types. Most of them are harmless and habitat in fresh water or sea water. Some of them make their food by photosynthesis while others are

dependent on other organic debris for food. To the extreme, few of them also parasites. Further, they are grouped into animal kingdom due to marked similarity to animals. Read more on single celled organisms.

Chapter 6 : Annelid - Wikipedia

Annelids, parasitic worms, Protozoans, etc. Part J [microform]: Polychaeta (supplementary) Item Preview remove-circle Share or Embed This Item.

The following points highlight the top nine examples of protozoa. The genus belongs to the Phylum Sarcomastigophora, Sub-phylum Mastigophora and class Zoomastigophora. In the classification based on r-RNA homology, the genus is placed in the Archaezoa. The organisms are amitochondriate. It exists in a feeding vegetative form, known as trophozoites or as cysts. There is also a large characteristic sucking organ by which they attach to the intestinal wall. They grow generally in the small intestine of humans and other animals. Cysts are slightly smaller, oval and thick walled. Infection occurs by ingestion of cysts through food and water. The cysts migrate with ingested food to the small intestine where they produce trophozoites. After 4 to 7 days, the trophozoites are transformed into cysts and are excreted in feces. Thus, Giardia has a simple life-cycle having only two types of growth form â€" an active trophozoite stage and an inactive cyst stage. Trypanosomes are flagellated protozoa placed classically in the Zoomastigophora, but similarity of r-RNA homology with Euglenoids shows their affinity. In the phylogenetic classification Table 5. For mobility in the viscous plasma, the cells are provided with an undulating membrane which is externally bordered by a flagellum. There is another flagellum which remains free and attached at the anterior end of an elongated leaf-like cell. Mitochondria are absent and the mitochondrial DNA is located in an organelle, called kinetoplast. Infections caused by Trypanosoma are known as trypanosomiasis and commonly as sleeping sickness. Two different types of sleeping sickness diseases are recognized â€" the African sleeping- sickness caused by Trypanosoma brucei and American sleeping sickness caused by Trypanosoma cruzi. African sleeping sickness is due to two varieties of T. One, known as T. Trypanosomes pass their life-cycle in two hosts, one a vertebrate mammal specially human being and an invertebrate host. Infection of African sleeping sickness in man is caused through bite of tsetse fly Glossina palpalis. In the invertebrate hosts trypanosomes are present as long slender flagellated organisms Fig. In humans, the organisms thrive in blood and cerebrospinal fluid and assume a non-flagellated form. Trichonympha campanula is a multi-flagellate symbiotic protozoan which inhabits the intestines of termites. The protozoa ingest particles and convert cellulose to soluble carbohydrates which are taken up by the termites for their nourishment. The protozoa get in return a safe habitat and food in the form of cellulose present in the wood eaten by the termites. The gross structure of T. Leishmania includes several species of flagellated protozoa belonging to the class Zoomastigophora which cause different types of leishmaniasis in humans. The diseases caused by different species are spread through bites of sand fly Phlebotomus spp. The pathogen exists in two forms in its life-cycle. In the sand fly as well as in culture, the organisms are flagellated elongated structures promastigote. This is the infective form of leishmanias. In this form they remain in the saliva of sand flies. They proliferate in the phagocytic leucocytes of the affected person. Leishmaniasis can be of different types caused by different species of Leishmania. A visceral leishmaniasis, known as kala-azar is a serious type of infection, once widely prevalent in many parts of Asia including India, Africa and also Mediterranean countries. The causal organism is L. The pathogen grows in liver and spleen causing their enlargement. Mexicana are the causes of American leishmaniasis. They also affect skin and additionally the mucous membrane. Entamoeba belongs to the sub-phylum Sarcodina of the Phylum Sarcomastigophora and in the classification based on r-RNA studies, to the Phylum Rhizopoda. The organisms are non-flagellated amoebae. It is an intestinal parasite which is transmitted passively through food and water. Other species, like Entamoeba coli and E. The active feeding stage of E. These measure pm in diameter and are motile with the help of pseudopodia. The cells have a wide clear ectoplasm which is more retractile than the more or less homogeneous endoplasm. There is commonly a single nucleus and the cells in parasitic stage often contain ingested red blood cells Fig. Cysts are highly resistant to anti- amoebic drugs and for that reason cause a chronic infection. Each cyst on germination produces several trophozoites. After entering into the body with food or water, the cysts pass through the gastrointestinal tract until they reach the distal portions of the small intestine and the large intestine. They

possess proteolytic enzymes with the help of which they can penetrate the mucous layers producing lesions. Amoebiasis is a common intestinal infection in the tropical countries. Plasmodia are sporozoa belonging to the Phylum Apicomplexan. Like other genera of sporozoa, they are obligate parasites and the cells are with an apical complex of several organelles. In the mature stage they do not have any locomotion organelles and are non-motile. Several species of the genus Plasmodium, like P. Plasmodium species have a complex life-cycle involving two widely different hosts. One of these is invariably the female mosquitos belonging to the genus Anopheles and the other, vertebrate mammals including man. The life-cycle has four important stages â€" the sporozoite, the merozoite, the gametocyte and the gamete. Plasmodia reproduce both asexually and sexually. Sexual reproduction takes place in the mosquito. Asexual reproduction occurs in the mammalian host. Mosquitoes are known as the definitive host and the mammal as the intermediate host. Infection in humans is effected through the bite of a female anopheline mosquito carrying the sporozoites in its saliva. The injected sporozoites are carried by the blood stream to the liver cells where each sporozoite produces up to 25, merozoites by schizogamy multiple fission. The liberated merozoites then infect the red-blood cells and develop into a ring-like structure which enlarges and eventually breaks up to produce numerous merozoites, as well as several gametocytes. The gametocytes present in the blood are sucked in by the mosquito when it bites an infected person. The gametocytes are of two types, micro- and macro gametocytes, from which motile male gametes and non- motile female gametes are formed. Sexual union takes place in the intestine of mosquitoes resulting in the formation of a diploid zygote. The zygote is transformed into a thick-walled oocyst. Cell division occurs in the oocyst resulting in the formation of large number of sporozoites which are liberated by rupture of the oocyst wall. They move to the salivary gland of the mosquito and can be injected into another person. The merozoites liberated by rupture of red blood cells of an infected person can invade new red blood cells to repeat an asexual cycle of multiplication. The merozoites take about 48 to 72 hours to complete the asexual cycle depending on the species of Plasmodium. When the merozoites are released by rupture of the blood cells, there is also a simultaneous release of toxic compounds which causes the rise of body temperature and other symptoms associated with malarial attack. Of all species of Plasmodium, P. The life-cycle of Plasmodium is depicted in Fig. Toxoplasma gondii, the cause of toxoplasmosis is an Apicomplexan sporozoan. It is a widespread parasite of humans and other vertebrates and it spreads through domestic cats. The trophozoites representing the active form are crescent-shaped Fig. In human, the trophozoites are the active form of the parasite which penetrate into cells, except erythrocytes red blood cells. Trophozoites are transformed into cysts within host cells. The cysts are converted to oocysts in the body of the cat by an asexual and sexual process. The oocytes germinate to produce eight sporozoites which give rise to the trophozoites also called tachyzoites. These pass into the grazing animals and to humans through consumption of undercooked beef, pork or mutton. Birds and rodents also are infected and the domestic cats may acquire the infection from them. In humans, the trophozoites develop from cysts or oocysts in the intestines and they penetrate the cells to spread throughout the body via blood stream. Toxoplasmosis develops with fever, sore throat and enlargement of spleen, liver and lymph nodes. The symptoms are usually mild in normal human individuals, but may be dangerous in AIDS patients with impaired immune system. Paramecium is a ciliate protozoan belonging to the Phylum Ciliophora. The cells have a characteristic shape, looking like a slipper having a broad anterior rounded end and a comparatively narrower rounded posterior end. The surface pellicle is covered by a large number of short cilia arranged in a precise order. All the cilia beat rhythmically to propel the organism in liquid medium. The cilia also help in collecting solid food particles into the mouth. At the base of each cilium, there is a basal granule situated in the cytoplasm. The basal granules are interconnected by a system of fine fibrils to form a ciliary complex.

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Chapter 7 : Ralph V. Chamberlin Books - List of books by Ralph V. Chamberlin

Protozoa (also protozoan, plural protozoans) is an informal term for single-celled eukaryotes, either free-living or parasitic, which feed on organic matter such as other microorganisms or organic tissues and debris.

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Chapter 8 : Micro: Helminths, Arthropods, Prions - ProProfs Quiz

Some of them live freely while others live as parasites. Protozoans are single celled organisms. They live independently and perform all the life activities with that single cell.

Chapter 9 : Serpula - Wikipedia

Excerpt from Report of the Canadian Arctic Expedition, , Vol. 9: Annelids, Parasitic Worms, Protozoans, Etc., Part G-H, Trematoda and Cestoda; Southern Party.