Platyhelminthes are commonly known as flatworms biology essay

Design

Platyhelminthes are normally known as platyhelminths. Some of the illustrations of Platyhelminthes include cestodes and good lucks. These platyhelminths normally exist as parasites which feeds on its host or it can be as non-parasitic animate beings such as the planarians (Schmidtea mediterranea) .

On the other side, Annelida are segmented worms which include largely angleworms, Marine worms and bloodsuckers. These segmented worms are chiefly detritivores which feed on deposits that contain micro-organism. Furthermore, there are besides some other segmented worms that are huntsmans as they catch their quarry with jaws. Further scrutiny on the morphological features, type of organic structure pit, internal systems and generative mechanism allows us to do more comparings between these two fascinating phyla. At the first glimpse, both platyhelminths and segmented worms portion similar features as bilaterian animate beings. Animals that are bilaterally symmetrical mean that their anterior and posterior terminals are different. In add-on to that, their dorsal and ventral surfaces are besides different. (Refer to Fig 1 and 2) In comparing to Cnidarians and Cetenophores, Platyhelminthes and Annelids have a higher morphological and physiological administration as they have developed organ systems.

Both Platyhelminthes and segmented worms possess true tissues that are organised into three germ beds, viz. the entoderm, exoderm and mesoblast (triploblastic) . The mesoderm bed gives rise to musculuss, assorted organ systems and parenchyma tissues. (Alters, 2000) Additionally, both of them have displayed some grade of cephalisation by developing caput and tail-like

constructions. Furthermore, these animate beings are soft bodied invertebrates and do non hold any limbs.

Hence, it is their morphological nature and structural features that give rise to the similarities between Platyhelminthes and Annelida phylum group. The characteristic mentioned above describe the structural similarities between the Platyhelminthes and the Annelida phylum group. However, despite the structural similarities, there are differences observed between these two phylum groups. In footings of organic structure form, Platyhelminthes are dorsoventrally flattened and have unsegmented organic structure parts. Annelids, on the other manus, are cylindrical and display metamerism.

(Refer to Fig 1 and 2) Although both Platyhelminthes and Annelida are triploblastic, Platyhelminthes are acoelomates, intending they do non hold true organic structure pit and their variety meats are in contact with epithelial tissue. On the contrary, Annelida are eucoelomates, they formed true celom with complete run alonging bed called peritoneum.
(RussellHYPERLINK “ # _ENREF_3 ” et al. HYPERLINK “ # _ENREF_3 ” , 2011)Most of the platyhelminths and segmented worms portion common similarities in their respiratory system. Both platyhelminths and segmented worms take part in gaseous exchange through gas diffusion in their tegument bed. By and large, they respire at their integument as they do non possess any particular variety meats for gaseous exchange.

Comparing their circulatory systems, the segmented worms have a closed circulatory system which contains blood vass near their tegument surfaces. These blood vass containblood which carries food and O throughout the

organic structure. Blood is pump by the contractile sidelong vas which acts like a bosom within the intestine. The platyhelminths, in contrast, do non hold any blood vass in their organic structure and there is no specialized circulatory system within the internal organic structure. Most of the platyhelminths possess an uncomplete digestive system which consists of the oral cavity, throat and an bowel with one gap. Similarly, the segmented worms besides possess a oral cavity and throat. However, it has a instead complete digestive system in which their bowel has two gaps. The two gaps in the bowel allow for nutrient motion through the oral cavity and allows for waste elimination through the anus.

When comparing excretory system in platyhelminths with that of segmented worms, assorted differentiations are discovered. The platyhelminths excrete their waste into the gastrovascular pit and extinguish their waste through their oral cavity. On the contrary, the segmented worms have a brace of excretory secretory organs known as metanephridia in each section that excretes soluble wastes merchandises. Add on to that, solid waste merchandises can besides be excreted through the worm anus. (RussellHYPERLINK “ # _ENREF_3 ” et al. HYPERLINK “ # _ENREF_3 ” , 2011) Hence, both these phyla have different ways of waste elimination. The platyhelminths have a simple nervous system which consists of two simple encephalons called ganglia. The ganglia are a package of nervousnesss which connects to the longitudinal nervus cords and run throughout on the either side of the organic structure.

In add-on, they have oculus musca volitanss which allow them to observe for light signatures. (Alters, 2000) On the other side, the nervous system of segmented worms is instead complex in nature. The annelids consist of a dorsal encephalon with a brace of nervousnesss on either side. They besides consist of a brace of ventral nervus cords connected to ganglia in each section.

Furthermore, they besides have cross nervousnesss attaching to the ganglia in each section giving the complexness of the nervous system in segmented worms. Both platyhelminths and segmented worms have besides adopted similar generative schemes to guarantee their endurance across clip. In their generative mechanisms, both platyhelminths and segmented worms are able to reproduce asexually or sexually. In nonsexual reproduction, both of them are able to reproduce through clonal atomization. When a platyhelminth or an annelid is split into fragments, each of these fragments will rapidly renew and develop into a new platyhelminth. In sexual reproduction, both platyhelminths and segmented worms have hermaphroditic sexual variety meats which allow them to traverse fertilise via sexual intercourse.

After cross-fertilization, the worm secretes a cocoon where the fertilised eggs are deposited. Such sexual and nonsexual reproductive schemes allow these worms to propagate and forestall them from extinction across the clip. The great diverseness of nature is a consequence of a long history of development. Categorization of animate beings harmonizing to their morphological characteristic provides a greater item of account to the carnal behavior. The similarities in the morphological construction and reproduction

systems between the Platyhelminthes and Annelida suggest their common lineage.

However, judging merely from their morphology and generative system entirely is deficient to sort these animate beings. Hence, we need to look into other cardinal features that allow us to distinguish between Platyhelminthes and Annelida. One of the most of import key features that allow us to sort animate beings is genetic sciences. Modern familial techniques allow us to compare familial sequences to uncover their common lineage. Therefore, molecular informations obtained from DNA will supply an accurate and utile tool for the designation of the carnal phyla.

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Table 1: shows the similarities and differences between Platyhelminthes and AnnelidaFeaturesSimilaritiesDifferencesPlatyhelminthesAnnelidaPlatyhelminthesBody symmetricalnessBilateral symmetricalness

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Body constructionSoft-bodied invertebrates, does non hold limbsDorsoventrally flattened, nonsegmentalCephalisationHave a caput and a tail

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CelomTriploblasticAcoelomates (without organic structure pit)Gas exchangeSystemDiffusion through tegumentAbsence of blood vassCirculatory System

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No specialized circulatory systemDigestive System

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Incomplete (intestine has one gap)Excretory system

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Excrete waste by oral cavityNervous System

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simple nervus ganglion, have oculus musca volitanss that detect lightReproductionBoth have nonsexual and sexual reproduction

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Fig 1 shows the morphological construction of the segmented worms. Fig 2 shows the morphological construction of the platyhelminth.