"Education for Knowledge, Science and Culture"

-Shikshanmahashri Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikashan Sanstha's

Vivekanand College, Kolhapur (Autonomous)

Department of Zoology

Student Seminar 2019-2020

INDEX **Date-05/09/2019**

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

DEPARTMENT OF ZOOLOGY

(1)

Notice

Date: 5/09/2019

All the students of B. Sc. III (Zoology) are informed that your seminar for the academic year (2019-2020) organized on 20/09/2019 in department of zoology. For that you have to prepare seminar as per given topic.

Venue: Department of zoology lab no. 48

Dr. K. P. Shinde
Head
Department of Zoology
Vivekanand College,
Kolhapur

DEPARTMENT OF ZOOLOGY

(2)

Notice

Date: 05/09/2019

All the students of B. Sc. III (Zoology) are informed that for your seminar for the academic year (2019-2020) Consider the student and topic list given below.

Sr. No	Name of Students	Topic name
1	Shraddha Mangesh Jadhav	Water vascular system of star fish
2	Rutuja Sanjay Mane	External features and classification of star fish
3	Geeta Rajkumar Jewarani	Mechanism of locomotion in star fish
4	Richa Ranjeet Ghotane	Reproductive system
5	Nikita Abhay Chopade	Digestive system of leech
6	Mohini Umashankar Koli	Haemal system
7	Vaishnavi Amar Hande	External features and classification of leech
8	Sadanand G. Nalawade	Digestive system of star fish
9	Rutuja Shankar Bhandari	Perihaemal system
10	Samrudhi S. Shahapurkar	Food and feeding mechanism

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Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur (Autonomous)
Department of ZoologyYear-2019-2020
Seminar B. Sc. III (Zoology)
Attendance (20/09/2019)

(3)

Sr. No	Name of Students	Signature
1	Ganesh S. Yegade	G.S.Yegade
2	Vinay Jadhav	VJadhav
3	Niranjandas Sangawdekar	
4	Amol Suryappa Shingare	
5	Sanket Nemgonda Patil	
6	Mariya Faiyaz Bagwan	MBagwan
7	Shraddha Mangesh Jadhav	
8	Geeta Rajkumar Jewarani	GRJewarani
9	Rutuja Sanjay Mane	RSmane
10	Richa Ranjeet Ghotane	R.R.Ghotne
11	Nikita Abhay Chopade	N.A.Chopade
12	Saurabh kishor Borgave	SKBorgave
12	Mohini Umashankar Koli	MKoli
13	Rutuja Shankar Bhandari	RBhandari
14	Suyog Ravsaheb Patil	SRPatil
15	Pruthviraj Ghodake	Pruthviraj
16	Sadanand G. Nalawade	NGSadanand
17	Prasad M. Kamble	
18	Saurabh Pratap Kumbar	SKumbhar
19	Anirudh Uday Ingale	Janirudh
20	Pradnya P. Kamble	PKamble
21	Samrudhi S. Shahapurkar	SSShahapurkar
22	Rajani Vasant Kamble	RVKamble
23	Sachin Kamble	SKamble
24	Vaishnavi Amar Hande	VHande
25	Pratiksha S. Gurav	PGurav
26	Poonam Kiran Rugge	P.M.rugge

Incharge Teacher

Head
Department of Zoology
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Water Vascular System:-

In almost all echinoderms a specialized system known as water vascular system for locomotion this system named as water vascular system because water circulates through different canals of the system. This system is also known as Ambulacral system In star fish the plan of water vascular system is shown the generalized structure of water vascular system of Echinoderms it shows pentamerous symentry. It consists of following parts madreporite, stone canal ring, radial canal, lateral canal tube & feet polian vesicles & and tiedman's bodies.

1) Madreporite :- In star fish the madreporite is present on the aboral side of the body it shows a button shaped structure in the skin it is porous plate. so it may also called as sieve plate. Through this porus plate water is taken in the canals of water vascular system. in madreporite there are about 250 pores are present. which are connected with pore canal present in the ampula. These pore canals unite to form a collecting canal which finally open in the stone canal. The canal is lined by flagellated or ciliated cells which draw water into the canal.

2) Stone canal :- The stone canal in starfish shows 'S' shaped structure the stone canal connects the madreps to the ring canal in the young starfish the stone canal is smooth but in adult starfish due to the deposition of calcarious material a ridge is present in lumen which divides canal into two passages. So that water circulates through oraly and aboraly.

External features of Star-fish.

Systematic position:-

Phyllum - Echinodermata - Skin covered by spines.
class - Asteroidea - Arms not demarcated from central disc
order - Forcipulata.
Genus - Asterias.
species - ruben

Distribution:-

Starfish is found in all oceans & at all depths there are several different species (about 150) of the starfish are known. It is known as sea star.

Habits & Habitats:-

Starfish are exclusively only) marine. is crawls slowely in the shallow water to great depths. on the sea floor of the seas by means of tube feet. They are found more abundant on rocky bottoms. They also occur on sandy or muddy bottoms. They usually remain in one locality and do not wander very far.

External features:-

1. Shape & Size - The body is flattened in oral, aboral axis & it is pentamerous in arrengment it consist of central disc or central area from which radiate 5 arms. The imaginery lines suppose to divide the central disc to the tip of the ray are called radil & inter radil on the region between two radil.

2. Colour:- They are usually brightly coloured yellow brown orange. The body has two distinct oral & aboral surfaces. The oral surface is flat directed downward & lighter in colour. It is characterised by centraly placed mouth the aboral or abactinal surface in convex directed upwards & much darker in

Mechanism of locomotion :-

When the animal wants to more in perticular direction the arm of that side is lifted up the water of the water vascular system forced in the tube feet because of this the length of tube feet ↑ s<s such elongated tube feet make contact with the substratum & the sucker which is present at there free ends hold fast these substratum (some secreation from the sucker also helps for firm attachment)

Now the tube feet contracts the water in then enters in the respective ampullae, automatically the body is pulled forward. This type of locomotion is possible on the hard surfaces, where the substratum is salt all the tube feet of the body are fields with water & more as less walking is carried out.

Function of water vascular system :-

1) Locomotion 2) Food capture - The tube feet are used to capture the pray the suckers are used to open cell of moluscans

3) Attachment :- starfish can attach to the rocks by tube feet

4) Hydro-static endoskeleton provided by water vascular system.

Digestive System of Starfish

Digestive system of starfish consist of alimentary canal & the digestive gland.

Alimentary Canal - Alimentary canal or digestive track extend from oral to aboral side. It is a straight very short due to flattening of body. It consist of mouth, oesphagous, stomach, intestine, Rectum & anus

Mouth - Oral surface bears the mouth situated in centre of peristomial membrane it is capable of gread expasion & reduction

Oesophagous - Mouth lead to short wide oesophagous which expand into stomach

Stomach - Stomach is differentiated into cardiac stomach & pyloric stomach by a constriction

a) **Cardiac stomach** - The 1st layer oral part is thin walled & 5 lobed sac each lobe lies opposite to 5 arms the with of cardiac stomach is folded & it can be everted through mouth in each arm stomach is attached by muscles the cardiac stomach is glandular & secretes mucus

b) **Pyloric stomach** - Pyloric stomach is smaller star shaped pentagonal sac pyloric stomach is drawn out radially into duct which run in arms forming a pairs apendages called pyloric caeca or hepatic caecal digestive gland / gastric gland There are 5 pairs of pyloric caecal each runs upto tip of arm pyloric caeca & Pouches togeth form digestive gland like pancreas of vertebrate

Reproductive System

Star fish is unisexual, i.e. male and female organs are found in seperate organisms but there is no sexual dimorphism, there reproductive organs are of premitive type copulatory organs accessary glands and receptacles are absent.

Gonads :- The testies and ovaries are similar but they differ in colour the testies are grayish and ovaries are pinkish in colour. There are 5 pairs of testies or ovaries with one pair at the base of each arm lying freely between pyloric caeca and ampullae of tube feet. The gonads develope periodicaly and their size varies accoreding to season at the maturity the gonad occupy considerable portion of the periviseral space. Each gonad appears as an elongated feathery brach or duct consisting of membranous and rounded follicles. It is enclosed in genital sinus.

From the proximal end of each gonad short dialated gonoduct which opens out laterally and on the aboral surface, braminute gonopore the mature sperm and ovi are thrown into sea water it is claimed that, the aboral end of axial organ is a sheath of formation of new gerin cells. which later travel to the gonad accoreding to the other view these germced originate from coelomic epithelium near the axil complex.

Name : Nikita Chopade.

No.
Date

Digestive System of Leech

Introduction :- The food of leech is vertebrates blood (sangiovorous). The digestive system includes alimentory canal & associated digestive glands.

Alimentory Canal :- The alimetary canal is straight tubular starts from preoral chaimber (mouth) ends into anus. The alimentory canal greatly modified for blood sucking & the greater part of it for storage of blood (food) material.

A] The alimetary canal canal consist of following for

I] It is ~~atim~~ ventral cap shaped dispression in anterio sucker turned as pre-oral chaimber in Nt four seg.

II] Baccal Cavity :- The mouth leads into a short narrow dipross Buccal cavity, internaly lined with cuticle in which three jaws present, one middorsal two vertrolateral in position.

i) Jaws :→ There are three jaws, each jaw lateraly compressed semicircular in shape, they attached in a Baccal cavity by means of lower / venteral muscular pusher. The free end of it covered with thin uniform cuticle. ~~The free end of it covered with thin~~ on which 100/125 teeth or denticles present on the lateral side of each jaw having 42-45 finger like projections called salivary glands. These ~~the the~~ three jaws comes together to form 'Y' shaped or titrate wound on the host body.

Circulatory System (Blood vascular System)

True blood vascular System is absent in Starfish the System responsible for circulation of digested food is often called vascular System. It is made up of a perihaemal System enclosing the channels. A Haemal System. It is made up of two parts

A] Perihaemal System B] Haemal System

A] Perihaemal System

A System of various tubular lacunae or Sinuses in the body known as perihaemal System. The Haemal channels are are true blood vessels. The perihaemal vessels are lined by Pageocytic Epithelium. Perihaemal System consist of four main Sinuses a] Axial Sinus :- It is thin walled tubular ventricle pachymic which Encloses Stone canal & axial gland the three together forms axial complex

b] Aboral perihaemal ring Sinus :- The axial Sinus communicate with ampulla of Stone canal & open out through madreporite. It terminates in an aboral ring Sinus which is tubular pentagonal Sinus found Inside of aboral wall of the central disc.

c] Gonadial Sinus → Each gonad is surrounded by a Sinus Genital Sinus which is connected with dorsal ring Sinus by short Slender branch.

d] oral ring Sinus → The oral perihaemal ring Sinus surrounding the mouth is a large tubular Sinus.

B) Haemal system-

The Haemal system or chanels enclosed in a coelomic spaces of the perihaemal system. the chanels are filled with Coelomic fluid containing caelomocytes. The Haemal system is formed of oral hoemal ring, axial gland and aboral Haemal ring.

a) oral haemal ring.

The mouth is surrounded by a ring the oral haemal ring which run in the septum & divide the hyponeural ring sinus oral haemal ring gives of radial haemal strands in each arm, the branches are also gives of from radial haemal strands in each arm, the branches are also given of form radial haemal strands into the podia.

b) axial gland:

From the oral haemal ring a chanell aries it is turned as axial organ or axial gland. It is also known as brown gland (Heart gland) It forms main part of the Haemal system. It's interior filled with Connective tissue containing small inter Communicating spaces filled with fiuld & ameboid Coelomocytes with brown pig. The axial gland is Connected with oral haemal sinus of the oral end of with aboral hameal sinus at it's aboral end.

a) small terminal head process aries from aboral end or the axial gland. It Communicates with small dorsal sac a pair of gastric tough arises from haemal sinuses in the wall of Cardiac stomach Open in the axial gland near it's abored end. the food material digested in the stomach enters in the haemal ciruation through the gacitric foult. [It is supposed that axial gland produces sex-cells which finaly paso in the gand.]