

## **FUNCTIONS OF THE CANAL SYSTEM IN SPONGES :**

The following are the functions of the water current which enters the body of the sponges through the canal system:

1. The canal system serves the purpose of nutrition. It is regarded as a highway for the food through the body cells in the radial canal with flagella, which capture the food particles. Water currents are produced by flagella. Thus, water flows into the central cavity or spongocoel. Smaller food-particles e.g. diatoms, protozoa and particles of organic debris are ingested into the cells protoplasm and digested. The digestion is intracellular. Robert Grant first of all observed the flow of water in the body-wall by adding powdered carmine to the water. Thus, canal system here does the same functions as circulatory system in higher animals.
2. In sponges, as a result of development of elaborate canal system, massive growth is found.
3. Streaming currents of water have dissolved air, therefore, gaseous exchange or respiration takes place in the cells. Oxygen is taken in by simple process of diffusion and carbon-dioxide is given out. The respiration is also intracellular.
4. The function of the canal system is also excretory. Currents of water, which pass outside the osculum remove the carbonic acid and other nitrogenous waste substances, which are the excretory products of the body.
5. The purpose of the canal system is also to increase the surface area of the animal in water. This is a characteristic point by which increase of volume is allowed by keeping the ratio of the surface to the volume.

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