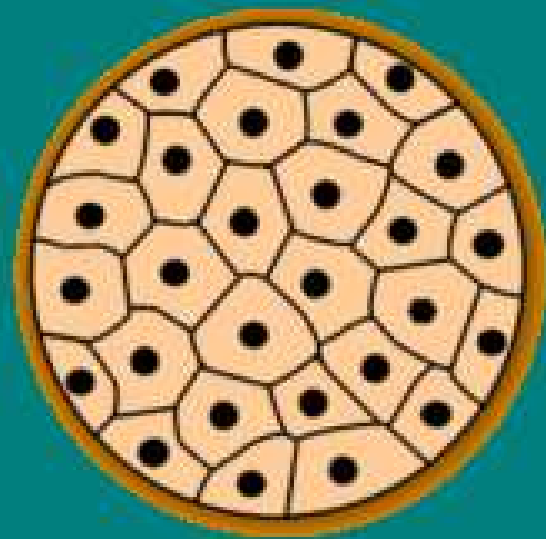


# **TYPES OF BLASTULA**

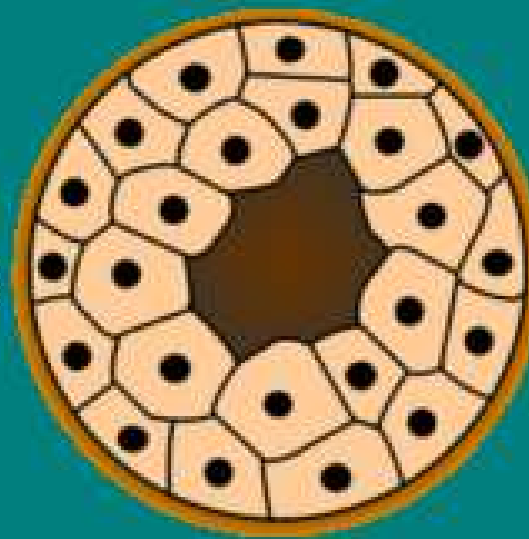
**Dr. R. Prasad**  
**Dept. of Zoology,**  
**Eastern Karbi Anglong College**

# Blastulation

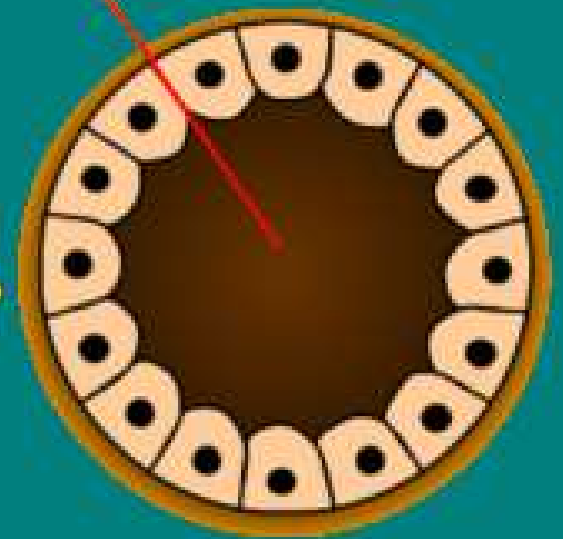
- The blastomeres in the early cleavage stage tend to assume a spherical shape. The whole embryo appears to possess a shape of mulberry. This stage is called **Morula**.
- Further cleavage to morula terminates in **Blastula**. It can be defined as a hollow sphere of blastomeres, surrounding a cavity, the **Blastocoel**. The process of formation of blastula is called Blastulation.
- The cellular layer surrounding the blastocoel is called Blastoderm.



**Morula**



Blastocoel

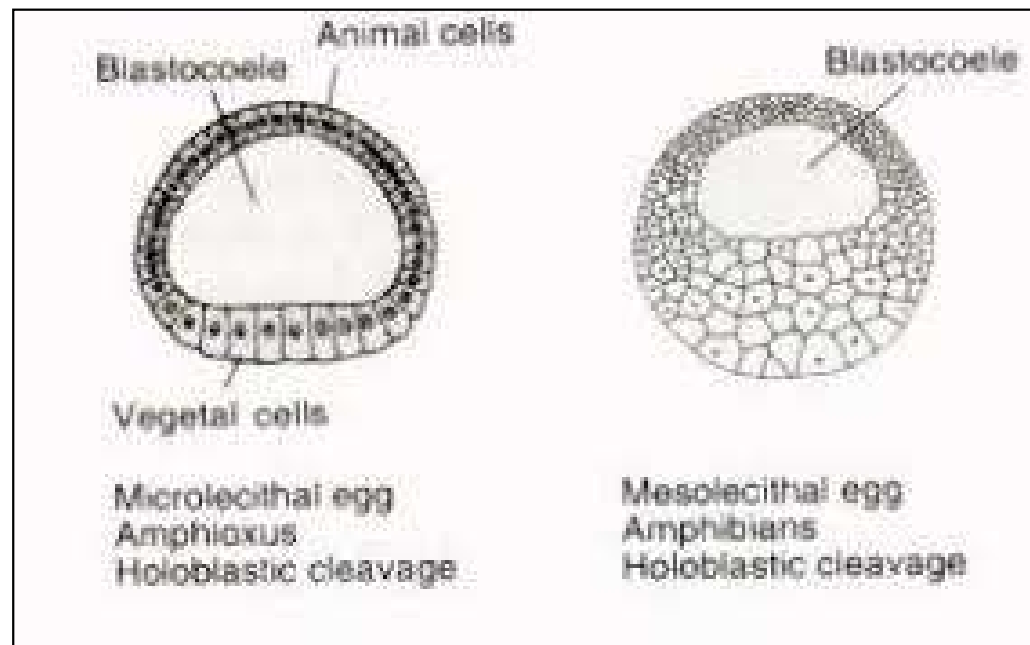


**Blastula**

# Types of Blastulae

## 1. Coeloblastula:

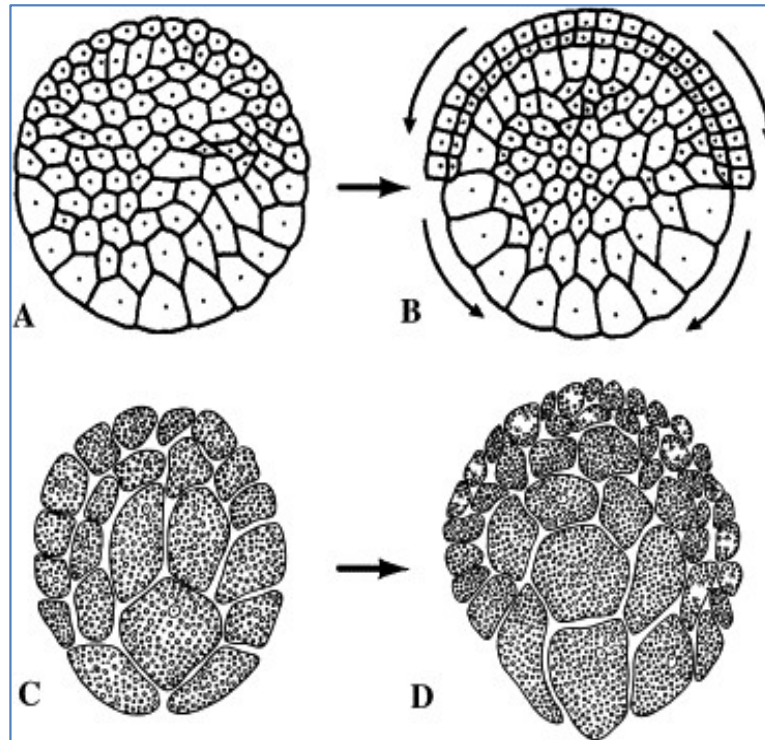
- Blastula containing large spacious blastocoel.
- The blastula from holoblastic equal cleavage is called Equal Coeloblastula (Eg: Echinoderms, Branchiostoma) and that results from Holoblastic unequal cleavage is called Unequal Coeloblastula (Eg:Frog)



## 2. Stomoblastula:

- A blastula with a mouth like opening is called Stomoblastula. The blastula develops an opening leading to the blastocoel. This opening serves as the mouth through which the maternal tissue is engulfed for nutrition.

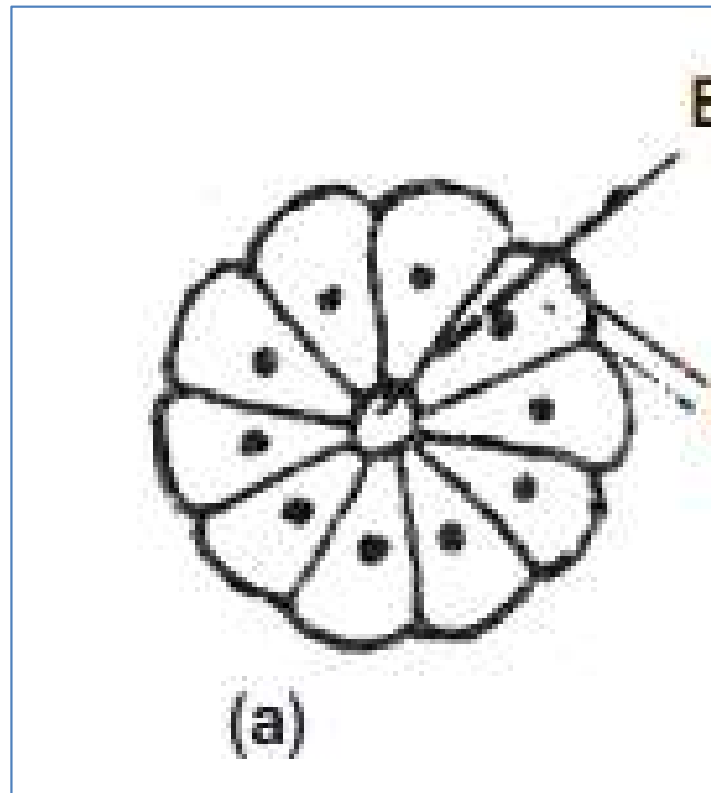
Eg: Sycon



### 3. Stereoblastula:

- ✓ Composed of an aggregate of larger sized and relatively lesser number of cells without or with extremely small blastocoelic space in the centre.

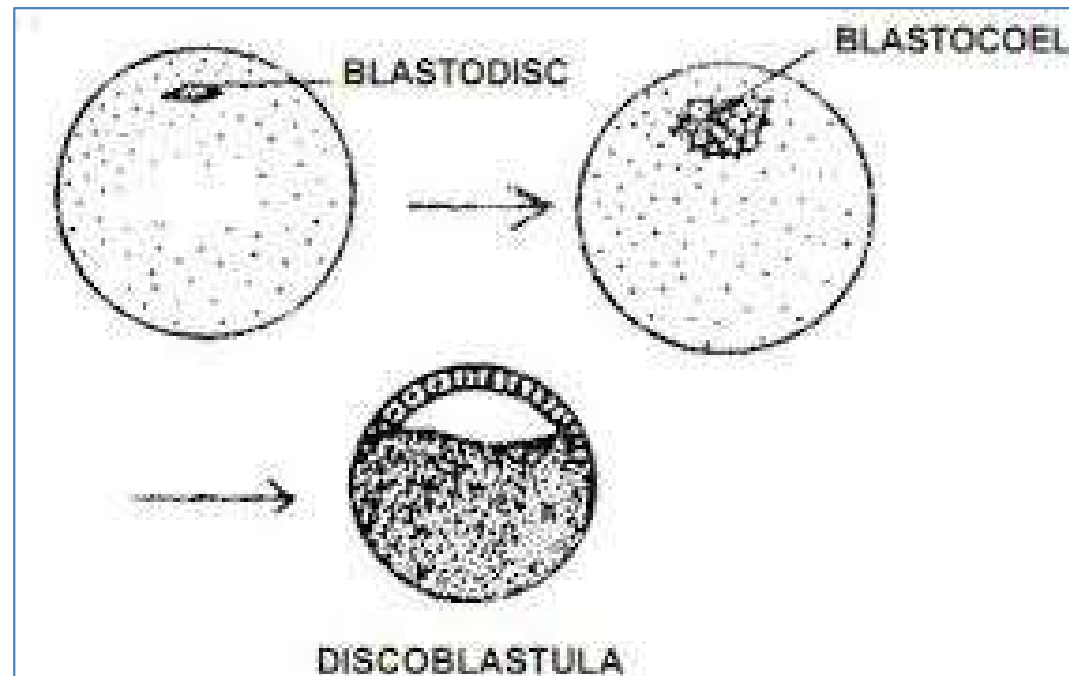
Eg: Insects, Nereis (Worm), Amphibians.



## 4. Discoblastula:

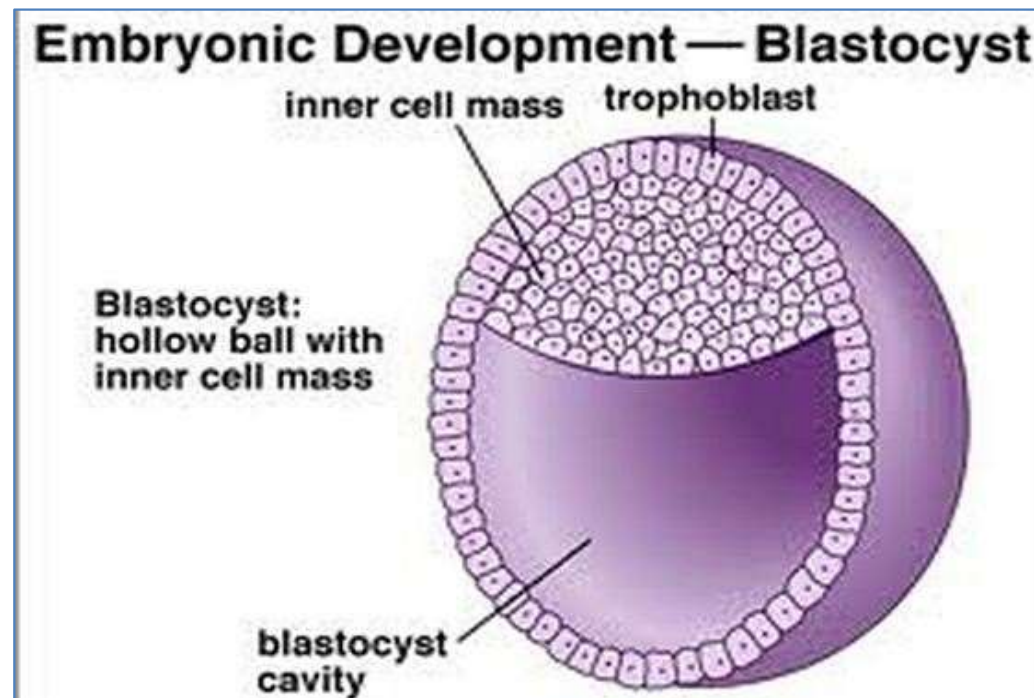
- Consists of a disc shaped mass of blastomers overlying a large yolk mass.
- Result of Meroblastic discoidal cleavage.

Eg: Fishes, Reptiles and Birds.



## 5. Blastocyst:

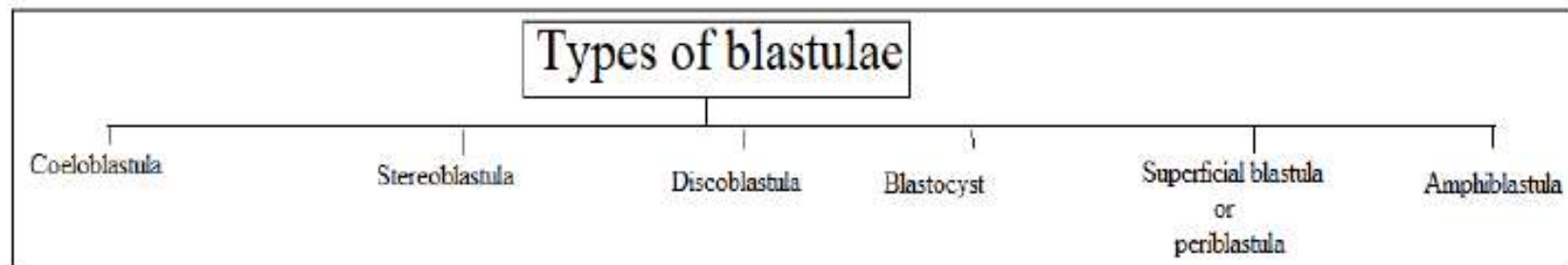
- Blastula Stage of mammals.
- Consists of a hollow spherical blastula containing inner cell mass. Outer single layer of cells enclosing the blastocoel is Trophoblast.
- Trophoblast helps in nutrition in developing embryo.

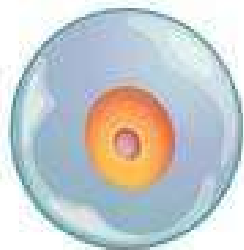




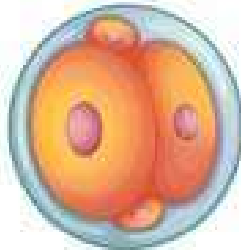
There are six types of blastulae found in the animal kingdom with differencing on various factors like size of the egg, amount and distribution pattern of yolk, and rate of cleavage.

1. **Coeloblastula:** This blastula is hollow and the blastocoel is surrounded by a single-layer cell. Examples: Echinoderms, *Amphioxus*, and frog.
2. **Stereoblastula:** This blastula is solid and has no blastocoel. Examples: Annelids, Molluscs, Nemerteans, and some species of planarians.
3. **Discoblastula:** This blastula is a multilayered flat disc at the animal pole separated by narrow segmentation from the yolk. They are found in eggs with a large and developed yolk. Examples: Reptiles, Birds, Prototherians, and Fishes.
4. **Blastocyst:** This blastula has a regular cleavage and a small cavity inside each cell. Two types of cells are found namely the outer layer of epithelial having nutritive cells and the inner mass of the formative cell. Example: Mammals.
5. **Superficial blastula or peri blastula:** This blastula has blastocoel which is filled with yolk and surrounded by a peripheral layer of cell Example. Insects.
6. **Amphiblastula:** This blastula is made up of two different types of structurally different blastomeres. Example: Amphibian

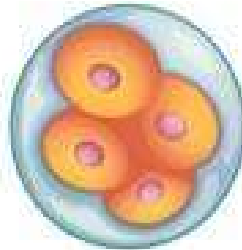




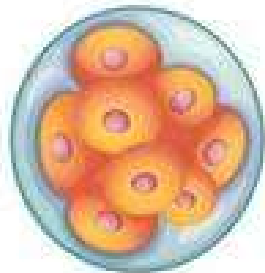
Fertilized egg



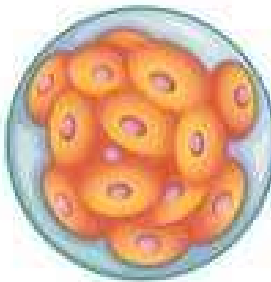
2-cell stage



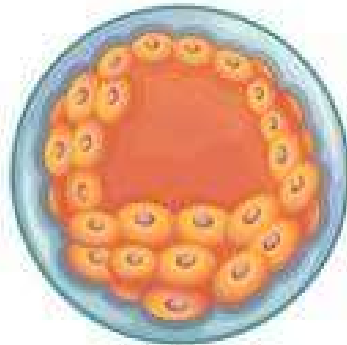
4-cell stage



8-cell stage



16-cell stage



Blastocyst

Blastocyst cavity  
(blastocoele)

Trophoblast

Inner cell mass  
(embryoblast)

