

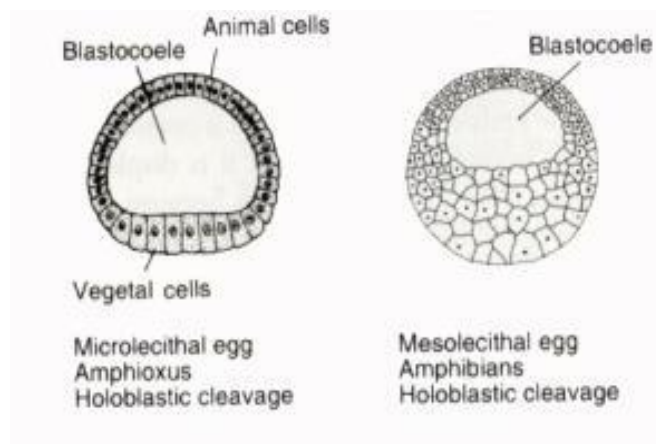
EMBRYOLOGY LECTURE NOTES -3

DIFFERENT TYPES OF BLASTULA

The blastula of various groups of animals differs in form and structure depending upon a variety of factors such as the size of the amount and distribution of yolk etc. The following categories of blastulae have been recognized in different groups of animals.

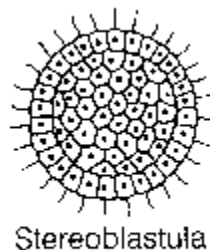
1 Coeloblastula

It is a hollow blastula containing a large spacious blastocoel. Usually, the blastocoel is filled with a fluid containing mucopolysaccharides. The blastula resulting from holoblastic equal cleavage, as in the case of echinoderms and amphioxus, is called equal coeloblastula. In this case, the blastoderm is single layered. Holoblastic unequal cleavage, as in frog, results in unequal coeloblastula. It has a blastocoel displaced towards the animal pole and a multilayered blastoderm.



2. Stereoblastula

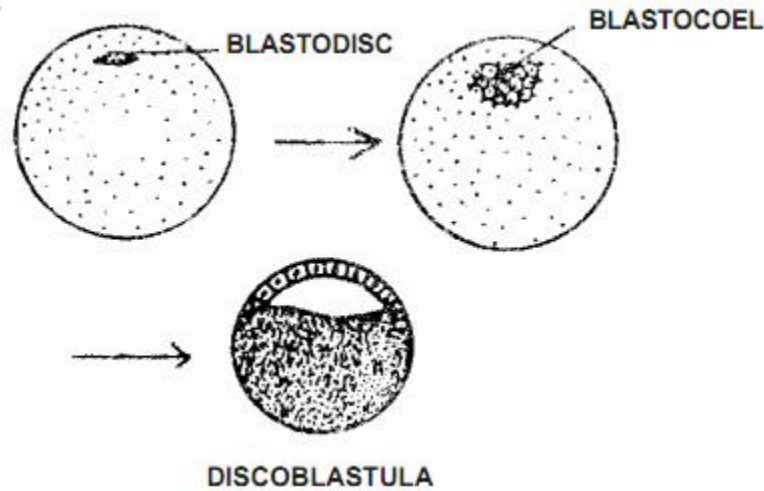
This type of blastula is composed of an aggregate of larger sized and relatively lesser number of cells without or with extremely small blastocoelic space in the centre. Stereoblastula occurs in a variety of animals such as insects, some worms like Nereis, mollusks like Crepidula, gymnophionan amphibians and certain fishes.



3. Discoblastula

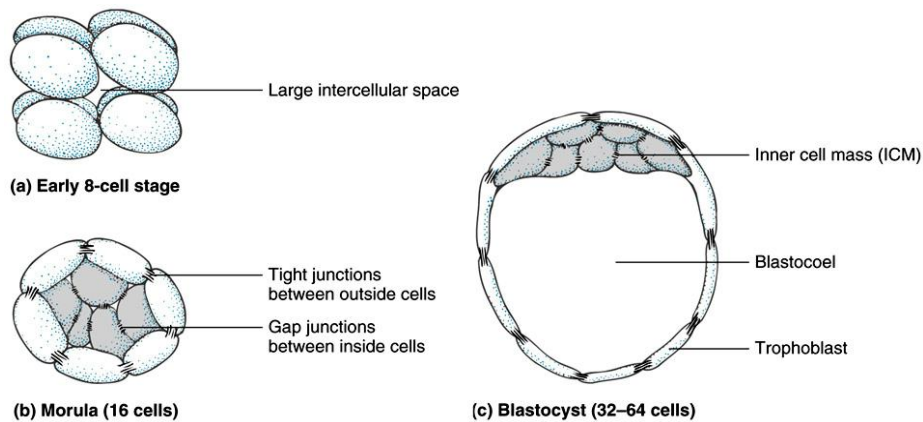
Discoblastula consists of a disc - shaped mass of blastomeres overlying a large yolk mass. This blastula is the result of meroblastic discoidal cleavage as in most fishes, reptiles and birds. There is

no blastocoel, instead a slit like cavity called subgerminal cavity appears in between the blastoderm and the yolk mass.



4. Blastocyst

It is the blastula stage of mammals; it consists of a hollow spherical vesicular blastula, containing an inner cell mass at the animal pole. The embryo proper develops from the inner cell mass. The outer single layer of cells which encloses the blastocoel is called the trophoblast. The trophoblast establishes relations with uterine wall and helps in nutrition of the developing embryo



5. **Periblastula:** a stage in the embryonic development of most arthropods having centrolecithal eggs. The periblastula is a vesicle whose wall consists of one layer of cells and whose cavity is filled with unbroken yolk. It forms as a result of the superficial segmentation of the egg.