Types of Egg

Egg - It is the female gamete also called as ovum

Function - Basic function of egg is to develop into new individual. It may be achieved by mean of fertilization (a way of sexual reproduction) or even without it sometimes as depicted in the case of parthenogenesis

During the initial stages of development, egg has to produce adequate number of cells (to form a viable multicellular organism), so for the purpose, it is packed with food and other required substances. The reserve food in this egg is called as vitellin or yolk.

Based on this amount of yolk and also on its distribution, egg are classified.

Egg types based on amount of yolk

(1) Microlecithal
(2) Mesolecithal
(3) Megalecithal.

(1) Microlecithal / Oligolecithal eggs :-

Small sized eggs containing very small amount of yolk. Kent (1969) described microlecithal eggs as alecithal eggs, but this term is not appropriate as there are no eggs without yolk.

e.g. Hydra, Sea urchin (marine invertebrates)
Amphioxus
Tunicates (cephalochordata)
Marsupial and eutherian mammals.

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(2) Mesolecithal eggs :-

Contain moderate amount of yolk

eg. Annelids, Molluscs, Petromyzontia, Dipnoi (lung fishes), Amphibia

(3) Megalecithal / Macrolecithal / Polylecithal eggs :-

These types of egg contain enormous amount of yolk.

eg. Insects, Myxinoidea (Myxine), Chondrichthyes (elasmobranch fishes) Reptiles, Birds and Monotremata (prototherian mammal)

Egg types based on distribution of yolk

(1) Homolecithal
(2) Telolecithal
(3) Centrolecithal

(1) Homolecithal / Isolecithal eggs :-

Yolk is distributed evenly throughout the ooplasm. This type of distribution is the feature of microlecithal eggs where the amount of egg is so little, that it is found scattered almost uniform throughout the egg cytoplasm.

(2) Telolecithal eggs :-

These types of eggs have polarized distribution of yolk in ooplasm.

This is found in macrolecithal

In this type, due to the growth the yolk is concentrated on one side (hemisphere) and cytoplasm (ooplasm) is pushed up on other. The pole (side) where yolk is accumulated is called vegetal pole and the other where cytoplasm is present (containing nucleus) is called as animal pole.

In macrolecithal eggs, this yolk is too much and nucleus and with cytoplasm is just limited to a very small area (cap) at animal pole.

Such eggs could be moderately telolecithal or highly telolecithal.

Moderately telolecithal : Amphibia, Petromyzontia, Dipnoi.

Highly telolecithal : Cartileginous and Bony fishes, Reptiles and birds.

(3) Centrolecithal eggs :—

Yolk is concentrated in the centre of egg and the active cytoplasm forms a this peripheral layer around the yolk.

eg. Insects and Some hydrozoa.