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Dr. Pritam Kumar
Deptt of Zoology,
Sher Shah College, Sasaram
V.K.S. University, Ara.

EARLY CLEAVAGE PATTERN IN AMPHIBIA.

The egg of amphibia is mesolecithal and telolecithal. The first cleavage ~~begins~~ as a depression at the centre of Animal pole and passes down towards vegetal pole. it passes through the point of penetration of sperm on the surface whereas in the interior of the egg, passes through the central axis. As the grey crescent lies just opposite to the point of penetration of the sperm, it is also divided into two equal halves. So the first cleavage is meridional, equal and holoblastic which cleaves the zygote completely into two identical halves. Each half is called blastomere.

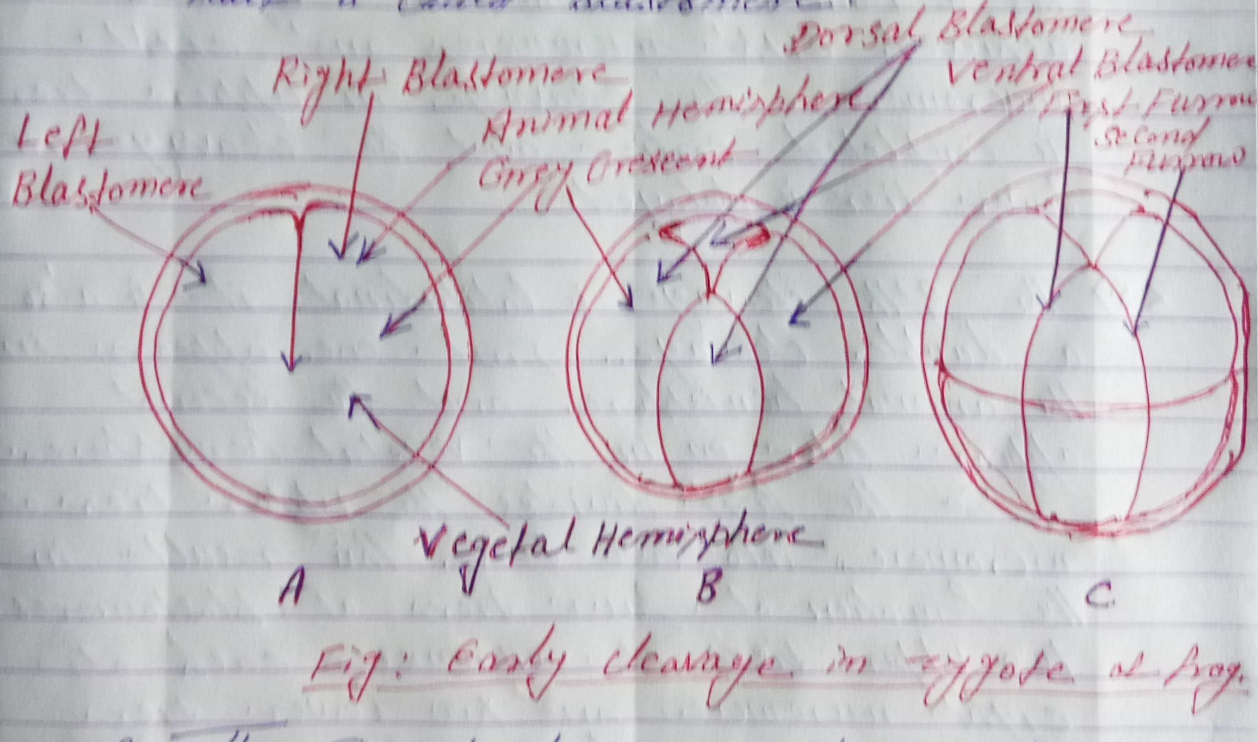

Fig: Early cleavage in zygote of frog.

2. The second cleavage is also meridional but occurs at right angle to the first. it results in the formation of four blastomeres. two with a part of grey crescent and two with a part of point of penetration. Thus all four blastomeres are equal but not similar.

(3) The third cleavage occurs in horizontal plane slightly above the equator. Hence it is latitudinal and cleaves all the four blastomeres into two unequal halves. As a result of Third cleavage, two tiers of four unequal blastomeres are formed. The small blastomeres of the upper tier situated at animal pole are known as micromeres. The large blastomeres located at vegetal pole are known as macromere.

(4) The fourth cleavage is vertical and occurs as double furrow in such manner that it cleaves all the four micromeres and four megameres arranged in two tiers into two. As a result, 16 blastomeres stage is achieved, eight micromeres and eight macromeres. The cleavage in upper tier is completed earlier and the cleavage in lower tier is delayed.

(5) The fifth cleavage is latitudinal. it is also a double cleavage. First one appears in the animal hemisphere and the second appears later on in the vegetal hemisphere.

So the first divides the upper tier of micromeres into two tiers. This results in the formation of four tiers of blastomeres. two upper tiers of micromeres each of eight micromeres and two lower tiers of megameres each of eight megameres. Thus 32 blastomeres stage is achieved.