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ZOOLOGY HONS

Dr. Prifam Kumar

B.Sc. - Part - I

CELL DIVISION

Shershah College.

Paper - I B

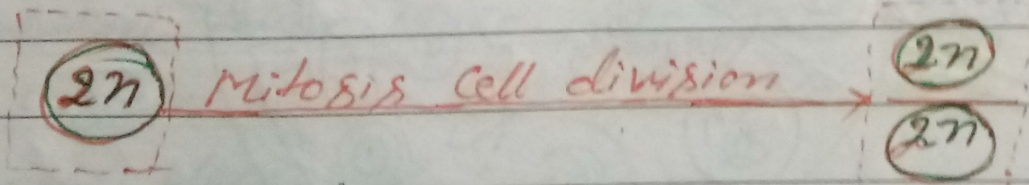
Sasaram,  
V.K.S. University Ara.

The phenomenon of division of one mature parent cell into two or four daughter cells is called cell division. It is first time reported by Dr. Naegeli in 1842. In 1858 Dr. Rudolph Virchow described that "omnis cellula a cellula" (A cell is made by other cell). Finally it is described by Dr. E. Strasburger in 1875. Cell division may be of three types:—

- (A) MITOSIS CELL DIVISION
- (B) MEIOSIS CELL DIVISION
- AND (3) AMITOSIS CELL DIVISION

(A) MITOSIS CELL DIVISION

"Mitosis is a type of cell division in which one parent cell gives rise to the production of two daughter cells and in daughter cells, the number of chromosomes is maintained as that of parent cell."



1 Parent Cell

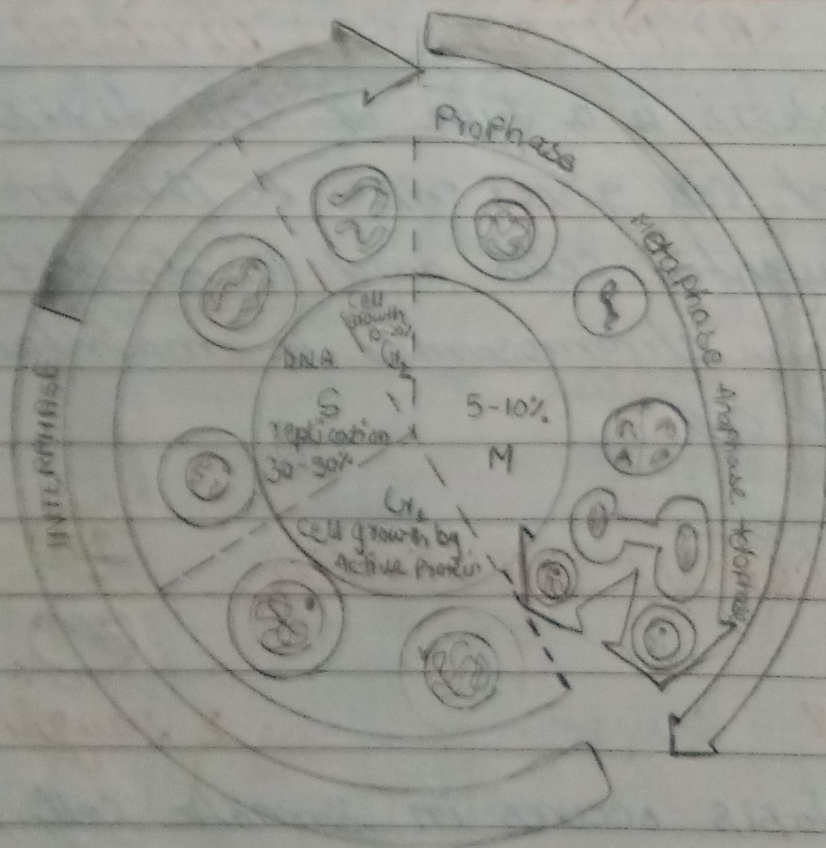
2 Daughter Cells.

Mitosis occurs in somatic cells, hence it

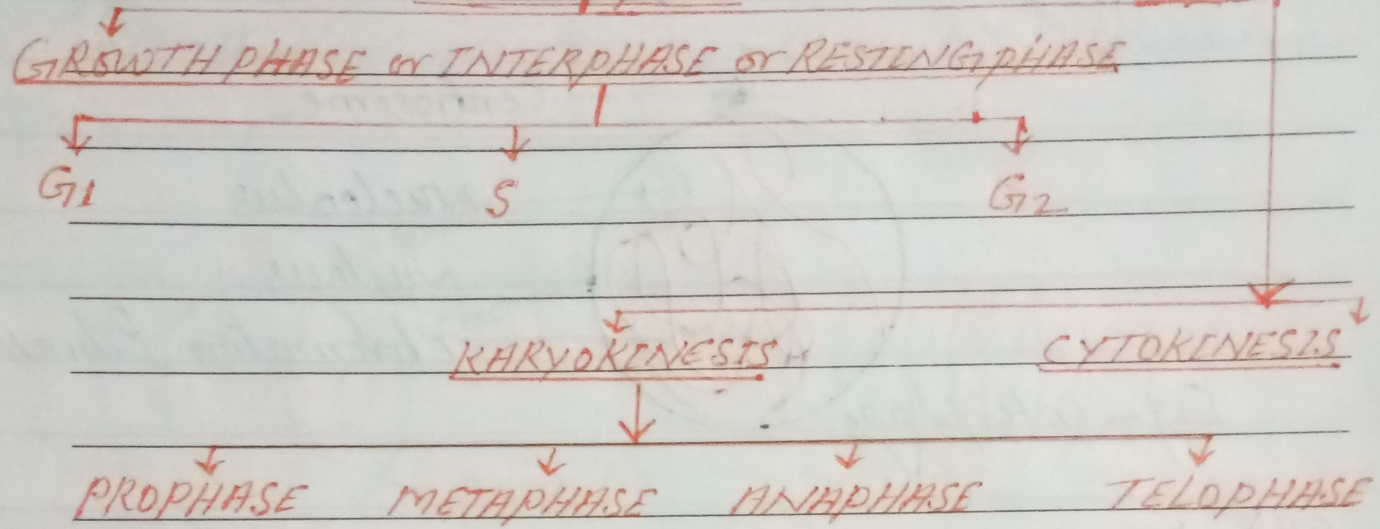
is also called "somatic cell division." it is first <sup>2</sup> time described by Dr. Flemming in 1879 in animal cell and the term "mitosis" is given by him in 1880.

CELL CYCLE: — The period from the end of one division of a cell to the end of next division is called Cell cycle. In normal Eukaryotic Cell, its duration may be 10-30 hours. The entire phenomenon of Cell cycle may be divided into two phases: —

- (A) Growth phase, or Interphase, or Resting stage (10-30 hours);
- (B) Division phase, or mitosis phase (30 min - 1 hrs);



# CELL - CYCLE



(A) INTERPHASE - (i) it is longest and complicated stage of cell cycle.

(ii) In this stage much hydration is present in cell

(iii) Nucleus becomes more prominent.

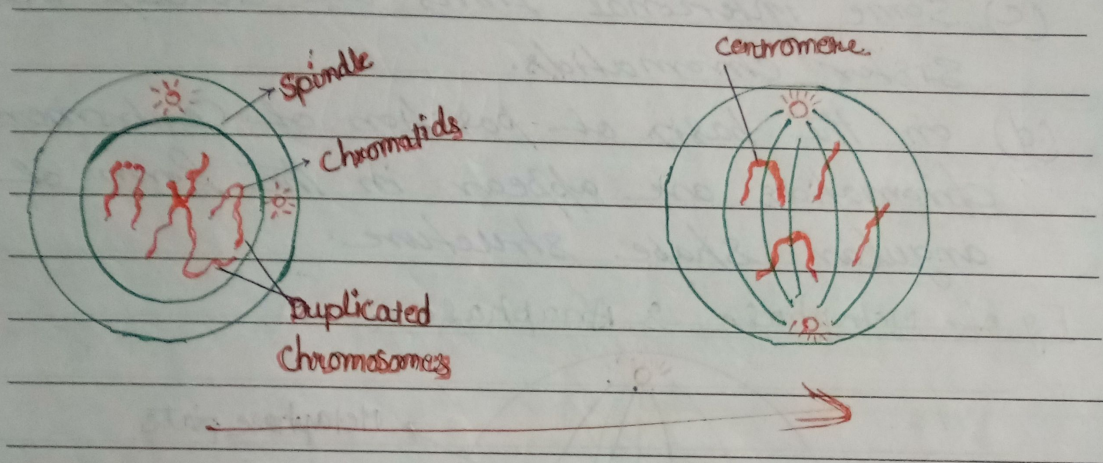
(iv) Chromosome appear in the form of chromatin network.

on the basis of internal change, interphase may be divided into three stages: -

(a) G<sub>1</sub> (First Gap period): - In this period, growth of cell takes place, synthesis of RNA and protein occurs. But synthesis of DNA can not take place.

(b) S (Synthesis period): - In this period, replication

(c) In late stage, nuclear membrane starts dis-  
-appear and each chromosome splitted vertically  
but attached at the position of Centromere. (5)



- (2) METAPHASE: — (a) In this stage, nuclear membrane and nucleolus disappeared.
- (b) Chromosome are arranged at the equatorial plate of cell called metaphase plate.
- (c) Some Spindle fibres are develop from opposite pole (in plant cell) or centrosomes (in animal cell), which attached with centromere. But some fibres continuous with fibres of other end.