

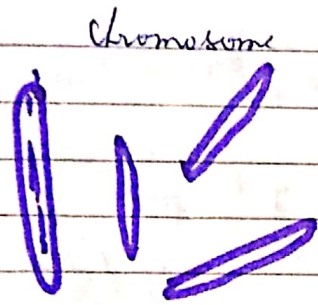
# Types of Chromosomes

Chromosomes are of different. They may be classified according to on more than one basis as -

— On the basis of **A** number of centromere

- a) Acentric
- b) Monocentric
- c) Dicentric
- d) Polycentric
- e) ~~Polycentric~~

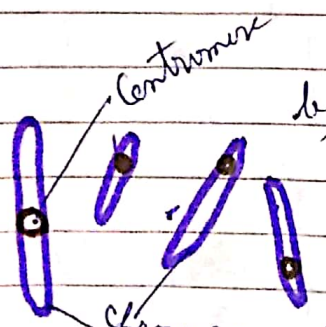
a) Acentric chromosomes: These chromosomes are without any centromere i.e. they lack centromere. They are formed due to break of chromosome into two parts such as only one part possess it and other lacks.



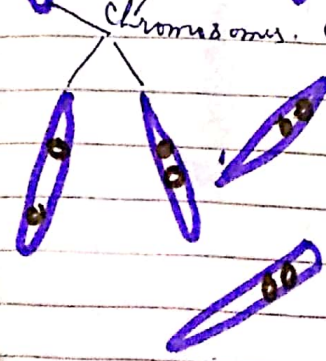
Such chromosomes do not take part in cell division. They may die sooner or later.

They may be produced by X-Ray.

b) Monocentric: Such chromosomes have only one centromere. Most of the chromosomes are of such type.



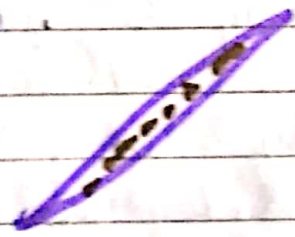
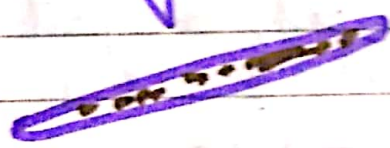
c) Dicentric chromosome: Such chromosomes possess two centromeres. They ~~are~~ <sup>may be</sup> produced due to Translocation. These two centromere may move to opposite pole during cell division causing a break during Anaphase.



However a new centromere may appear. But it is rare and abnormal phenomenon. It is called as Neocentromere e.g. Zea mays culture.

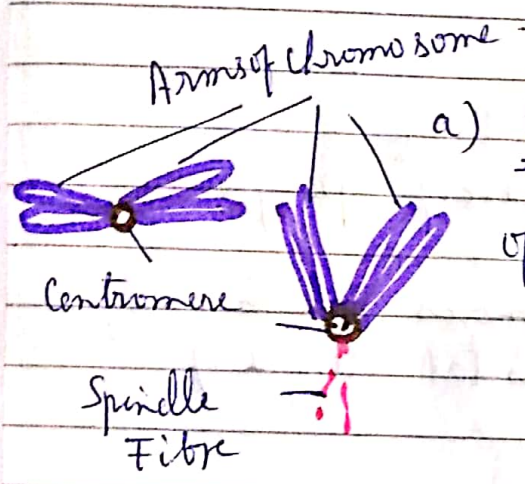
d) Polycentric chromosome: There are many centromeres. These chromosomes may form regular stable fragments with centromeres. e.g. Ascaris megalocephala univalens.

e) Holocentric: These are like polycentric ones but here centromeres are diffused along the entire length of chromosome. e.g. Ascaris spp. and some other Hemipteran and Hemipteroid insects. They are reported from some plants also.

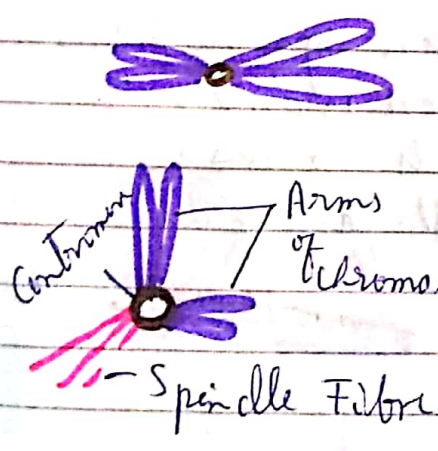


# On the basis of Position of Centromere.

- a) Metacentric
- b) Sub-metacentric
- c) Acrocentric
- d) Telocentric
- e) Holocentric

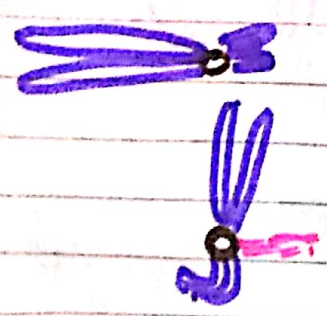


a) Metacentric: In such chromosomes the centromere is in the middle of the chromosomes. Both of the arms are equal. They appear as - V - shape during Anaphase.



b) Sub-metacentric: The centromere may be away from the middle for some what, not so far. Here the arms of the chromosomes are somewhat unequal.

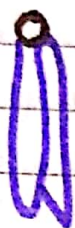
Such chromosomes look like L during anaphase.



c) Acrocentric: Here centromere is away from the middle. It may be near one of the ends of the chromosomes. Arms are quite unequal.

They look like J or rod shaped during Anaphase.

d) Telocentric: Centromere is at the end of the chromosome i.e. at terminal position of the chromosome. There are only one arm.



During anaphase they appear like rod

e) Holocentric: It is the case of polycentric chromosomes.

Here the centromeres are many and diffused in the entire length of chromosome.

During cell division spindle fibres get attached to the entire chromosome.

The separated chromatids move in a plane perpendicular to the axis of the chromosome.

