

CHROMOSOMES

M	T	W	T	F	S	S
					1	
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

February 2015

M	T	W	T	F	S	S
30	31					1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

March 2015

Saturday

03

JAN 2015
003-362 • WK 01

Introduction:

- Chromosomes are thread like structures present in the nucleus which become visible during cell division, mitosis and meiosis.
- **Holtmeister (1848)** for the first time observed dark, rod like bodies in nuclei.
- **E. S. Strasburger** in 1875 discovered thread-like structure which appeared during cell division.
- These thread-like structures were named as chromosome (chromo - coloured / dark, some - body), due to their affinity for basic dyes.
- **W. Waldeyer** in 1888 coined the term 'chromosome' for these darkly stained bodies which are observed during cell divisions.
- Diploid organisms have two chromosomes of each type, which are called homologous chromosomes, of which one has maternal origin and one has paternal origin.
- In diploid cell there are two sex chromosomes **XX** or **XY** and all other chromosomes leaving sex chromosomes are called autosomes.
- The sex chromosomes are also called heterosomes.

Sunday 04

NOTES

⇒ Number of chromosomes :-

The number of chromosome is characteristic of a species i.e., all individuals of a species have the same number of chromosomes. Closely related species have similar chromosome number.

The minimum chromosome number ($2n = 4$) is found in *Haplopappus gracilis* (Asteraceae), *Mesotoma* (flatworm) and *Ophryotrocha puerilis* (Polychaeta).

The maximum number of chromosomes are found in pteridophytes i.e., more than 1200 in *Ophioglossum reticulatum*. In animals highest number of approximates $2n = 1600$ chromosomes was reported in *Aulocantha* by **Belax** (1926).

⇒ Size of chromosomes :-

Size	Example
1 micron	in some fungi
3 microns	<i>Drosophila</i>
5 microns	Human beings
8-12 microns	Maize
30 microns	<i>Triticum</i>
2000 microns	chironomous (Polytene chromosome)

NOTES

$$1 \text{ micron} = 0.001 \text{ mm}$$

$$1 \text{ mm} = 1000 \mu$$