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Ploidy plants: NO. of xlg always increased in same sps & in genera. So it has positive points for taxonomy.

(v) Pollen sterility - Pollen sterility can be experimentally checked. In species breeds. It means sterility of pollen & pollen abortion is simply indicator of crossing between unrelated species & artificial hybridoids.

Several workers of the globe have been worked and proved that mitotic and meiotic study is essential and ~~to~~ sophisticated technique for taxonomic evaluation. Some workers who are present in this field are Leary & Raven (1968), Ingram (1967), Heule-Harrison (1961), Peltt (1964, a, b), Moore and Lewis (1966) and Cronquist (1968). These workers gave a basis in modern system of classification.

Conclusion - From the above discussion it is clear that cytological verifications have ample of evidence which helps in modern taxonomic evaluation and modern scientific classification as proposed by Cronquist (1968) and others.

studies involving chromosome numbers have been applied in taxonomy. Work of Darlington (1963), Melnik (1964), Raven & Kytes (1965), Aitken (1963) & others has cited the importance of cytological study in relation to taxonomy.

(2) Meiosis : Meiotic study is also important for taxonomy. There are certain objectives which emphasize the actual relationship between species or genera and even family. Hybrid plants can also be detected by meiotic observation. There are some illustrations given below which throw light on taxonomic problems:-

(c) Pairing behaviour - Homologous pairing always made between closely related species or genera. Unrelated chromosomes of odd species can not form homologous pairing and normal meiosis blocks. Hence pairing behaviour is also a detail of phylogenetic study.

(ii) Crossing over :- Crossing over always takes place between homologous chromosomes. It keeps an important role for taxonomy.

(iii) Chiasmata formation :- x to formation of chiasmata is the resemblance between

ROLE OF CYTOLOGY IN TAXONOMY.

Cytological study in relation to taxonomic parameter is termed cytota-
xonomy. Hence cytota-
xonomy can be defined
that cytological traits which are used
for taxonomic evaluation
is known as cytota-
xonomy. 'Taxonomy' term comes from
Greek but at present it has been proved
by the evaluation of different
taxonomic characters like morphology, anatomy,
physiology, paleontology, embryology
and other. In more above corners
Cytology keeps its own importance
regarding taxonomic study.

Taxonomy comprises (i) Description,
(ii) Definition of taxa; (iii) classification
and (iv) variability. In which Cytology
used as an excellent part of
classification. It is integral part of
genetic system which has great importance
in genetically oriented taxonomic
work (Lewis, 1957).

Cytota-
xonomy has been widely
used in taxonomy since seventeenth
century. Several workers like Brundage
(1968), Moore (1968), Solbrig (1968), Sharma

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(1956, 64), Roy (1957), ...
(1962), Keshav (1960) and others have
been working on this subject.
Mitosis and meiosis study in
Cytology help in taxonomy independently.

1- Mitotic study: Some taxonomic point to view
mitotic study purposes in the following
lines -

(A) Chromosomal numbers: Chromosome number varies
from one to several hundreds in different
plants. It keeps a valuable position in
taxonomic evaluation.

(B) Chromosome size - Chromosome length
varies from 5 to 30 μ l (Went, 1941).
Hence length of chromosome is also some-
times correlated in family and some
genera. It keeps an important place
for plant classification.

(C) Position of centromere - On the basis
of centromere chromosomes are of four
types i.e. Metacentric, submetacentric,
Acrocentric and telocentric. The position
of centromere in the certain species &
genera are fixed, hence it is important
point for taxonomy; Darlington (1940),
etc. were in this regard
studies &