REVIEW OF LITERATURE
Linnaeus (1753) while grouping the plants with tetradsymamous condition of stamens under the class "Tetradynamia" divided it into two orders namely Siliculosas and Siliquassea. Bentham and Hooker (1862-67), on the basis of the mode of dehiscence of fruits and relative position of the radicle and cotyledons, divided this assemblage into five series; each of these having many tribes. Hayek (1911) on the basis of form and distribution of nectaries divided Brassicaceae into 9 tribes. Schulz (1936), taking into account all the
characters used by earlier workers, classified the taxa of this family into 19 tribes. Janchen (1942), while rejecting Schulz's (1936) treatment of this family, modified Hayek's (1911) classification and divided Brassicaceae into 15 tribes.


Most of the workers mentioned earlier have reported only the chromosome counts. Various species of the genus Brassica, due to their considerable economic importance and comparatively larger chromosomes, have, however, been worked out extensively (Morinaga, 1934; Catcheside, 1934, 1937; J, 1935; Alam, 1936; Haga, 1938; Sikka, 1940; Yarnell, 1956; Wills, 1966; Harberd, 1972; Prakash, 1974; Hussein and Abobakr, 1976; Sikka and Sharma, 1979).
As mentioned on page 5, 21 species of eleven genera namely *Chorispora*, *Matthiola*, *Tetraecme* (tribe Matthiolaee), *Cheiranthus*, *Erysimum*, *Goldbachia*, *Hesperis* (tribe Hesperideeae), *Alliarie*, *Arabidopsis*, *Desouriania* and *Sisymbrium* (tribe Sisymbrieae) have been studied in the present investigation. Even in these genera most of the studies conducted earlier were limited to determining of chromosome numbers only (Winge, 1917; Jaretzky, 1932; Manton, 1932; Basz-Major, 1934; Steinitz-Sears, 1962, 1963; Gadella and Kliphuis, 1966; Podlech and Dieterle, 1969; Dvořáč, Dádáková and Grull, 1975; Naqshi and Javeid, 1976; Jonsell, 1976; Aryavand, 1978, 1983; Gehil, Ashruf and Raina, 1981; Gehil, Raina and Ashruf, 1981; Löve and Love, 1982a, 1982b; Kirschner, Stepanek and Stepankova, 1982; Van Loon and Kieft, 1980; A1 - Shehbaz, 1982, 1983; Cartier, 1983).

Out of the eleven genera studied in the present investigation, the diploid chromosome numbers range from 6(2x) in *Arabidopsis thaliana* to 162(18x) in *Erysimum inconspicuum* (Fedorov, 1969). Detailed cytological studies have been made only in *Matthiola* (Allen, 1924; Manton, 1929; Philips and Huskins, 1931; Randon, 1969) *Cheiranthus* (Koul and Wakhu, 1974), *Erysimum* (Jankun, 1965; Favarger, 1980, 1981; Mulligan, 1966a), *Hesperis* (Bhattacharyya, 1974; Dvořák and Dadáková, 1976;

Due to a low chromosome number and small life cycle, Arabidopsis thaliana, has also attracted the attention of physiologists (Kranz, 1975; Doddema and Hofstra, 1975; Braakema and Feenstra, 1975) and mutageneticists (Relichova, 1975; Brock, Callen and Shaw, 1976).

In family Brassicaceae, B-Chromosomes have been reported in 20 species (Jones, 1975). Out of the 11 genera, presently studied, they have been reported in Matthiola incana (Lesley and Frost, 1928; Frost, 1931) and Sisymbrium officinale (Baez-Major, 1934).

Khoshoo (1955, 1957a, 1957b, 1958a, 1958b, 1959a, 1959b, 1959c, 1959d, 1959e, 1960, 1964 and 1965) has studied in detail the biosystematics of Sisymbrium irio, which exists in nature in diploid, triploid, tetraploid, hexaploid and octaploid forms (Khoshoo, 1964). This species is highly polymorphic due to independant/combined effect/s of different environments, which these races inhabit, and the genetic diversity (Khoshoo, 1958a, 1964). The genetic diversity is due to polyploidy, gene mutations and structural alterations in its chromosomes (Khoshoo, 1964),
According to Khosshoo (1965), amongst the different chromosomal races of *S. irio*, tetraploid is the best adjustor and octaploid the poor one (Khosshoo, 1965). The tetraploid race of *S. irio* inhabits wet, dry and moist grazed surfaces and have been accordingly termed as *caulis*, *subcaulis* and *acaulis* (Khosshoo, 1957a, 1957b).