REVIEW OF LITERATURE
The generic name *Astragalus* was used by Linnaeus (1753) for a group of 31 plant species, similar in having a nonprostrate plant body and erect flower stalk. Bentham and Hooker (1862–1867) on the basis of leaf, flower and fruit characters included *Astragalus* under the tribe Galegeae belonging to the suborder Papilionaceae, of the order Leguminosae. Later, Hutchinson (1964) on the basis of stipule, leaf, flower and fruit characters placed *Astragalus* under the tribe Astragaleae of the family Fabaceae. Due to the large size of this genus (over 1600
species) and morphological complexity, some taxonomists (Jones, 1923 and Rydberg, 1929) have divided this assemblage into several genera. The recent trend, however, is to divide Astragalus into a number of groups with many sections, each of the latter comprising of one to many, presumably, closely related species (Goncharov, Borisova, Gorshkova, Popov and Vasil'chenko, 1946 and Barneby, 1964).

Of over 1600 species of Astragalus, about 1200 have been recorded from the Old world and only 470 have been reported from the New world (Hooker, 1879; Goncharov, Borisova, Gorshkova, Popov and Vasil'chenko, 1946; Barneby, 1964, 1974, 1976, 1977, 1979, 1980a, 1980b, 1981, 1982; Ledingham and Pepper, 1973 and Ali, 1977). More than 150 species of this genus have been reported from the Indian sub-continent (Hooker, 1879 and Ali, 1977); 50 of these from Kashmir Himalaya (Ali, 1977 and Dhar and Kachroo, 1983).


Astragalus is a multibasic genus with x = 8 and 11 - 15 (Spellenberg, 1976). While polyploidy, in the New world species of Astragalus is very rare (7.54%), 23.13% of the Old world species, whose chromosome numbers are on record, are polyploid. A. roemerii with 2n = 160 (20x) has the highest number of chromosomes in this genus (Ledingham and Rever, 1963).

Besides the presence of normal complement of A chromosomes, in 5 species of this genus two B chromosomes each have been reported. These include 4 diploid species namely A. campyloorrhynchus, A. commixtus, A. macropetkus and A. rytolobus having 2n = 16 + 2B, and one tetraploid species (A. gymnopodus) with 2n = 32 + 2B (Podlech and Dieterle, 1969).

A perusal of literature reveals that although somatic chromosomes of over 150 species of Astragalus have, so far, been studied (Head, 1957; Ledingham and Rever, 1963; Ledingham and Fähseit, 1964; Kožuharov and Kuzmanov, 1965; Podlech and Dieterle, 1969; Ledingham and Pepper, 1973; Spellenberg, 1976 and Dvořák, Dadákova and Grüll, 1977),
the karyotypic details with respect to chromosome morphology have been reported only in *A. physokalyx* (Kožuharov and Kuzmanov, 1965), *A. austriacus* and *A. excapus* (Dvořák, Dadáková and Grüll, 1977).

As in the case of somatic chromosomes, little information is available regarding the meiotic behaviour of chromosomes in various species of *Astragalus*. Ledingham (1957), Bijok, Adamkiewicz and Goral (1972) and Spellenberg (1976) have studied meiosis in over 100 species of *Astragalus*. However, none of the earlier workers has given any information about the pairing behaviour of chromosomes, chiasma frequency and recombination index for any of these species. The only information one can get from the earlier publications is that in all the diploid species the chromosomes pair to form bivalents only.

Although 17.02% species of this genus are polyploid, information about the meiotic details is available only for the tetraploid *A. striatus* (Ledingham, 1957).

Till today, no interspecific crosses seem to have been attempted in this genus.