PART-3

BIO-ECOLOGY & CONTROL
Phytophagous mites have become of primary importance as pests of crops in many areas of the world. The introduction and wide spread use of synthetic insecticides and fungicides and increasing employment of cultural practices have favoured their increase. The extensive use of these chemicals have eliminated their beneficial natural enemy fauna resulting upsurgence of the mite population to the economic injury level.

In the Agroecosystem of Kashmir, much of the temperate fruit is cultivated and wide spectrum of technical grades of oil emulsions and fungicides are being used for the past few decades to control the San Jose Scale and Apple Scab. These have caused drastic changes in the faunal relationship which normally existed in the unsprayed orchards prior to the introduction of these chemicals in the orchard pest control programme.

A variety of predacious mites and other insect predators have been encountered in these orchards. Among which the family Phytoseiidae have been found most dominating and commonest predators in these orchards, but the knowledge of their bionomics occurrence and effectiveness as biotic agents
in the Kashmir orchard environment has not been investigated earlier.

Although a large number of species of mites have been found to be involved in these orchards and crops; but the knowledge of their biology, ecology and interactions are scanty. No information even of general nature on the life-cycle, habits and distribution of economically important species of these mites exist. Therefore, it was deemed feasible to make taxonomical determination of these mites, study their basic biology and ecology under Kashmir orchard monoculture.

As the development of optimal pest control strategy for a particular crop plant requires an insight into the action, joint-action and interactions of the different mortality factors, provide a useful guide lines to the planning of pest management strategies.

According to Chant (1966) the management programmes of pest mites should not aim to eliminate the pest mite, but rather to allow it to fluctuate within tolerable limits of abundance so as to maintain the beneficial regulating components of the ecosystem. Since the control of population is the function of ecosystem, the knowledge of the components of the ecosystem are essential
for understanding of population density.

The components of the ecosystem in Kashmir are quite variable and contain clues for the pest population increase and decrease. A multiple of ecological factors are operating in the pest mite or on the predatory species in the Kashmir orchards. The determination of population dynamics or densities of a species is the result of interaction of all these factors. No orchards exist which will have within its environment all the ecological factors operating. Therefore, the variety of environmental conditions in commercially orchards were considered in general. The laboratory studies have been undertaken to serve a restricted but useful function to analyse some aspects of the problem under controlled conditions.

Therefore, the investigations have been carried to determine both under field and laboratory conditions the influence of climate (Temperature - humidity) weather and photoperiod on the activity and development of common and wide-spread mites of economic field crops and orchards, determined during the course of the present survey.

These preliminary investigations are aimed to form a useful part of a general programme to determine the physical and biological requirements of these mites in future; with the ultimate objective of assessing the role of environmental complex and predators and predatory mites in limiting these plant mite developments and survival under Kashmir Agroecosystem.