

Theophrastus is the person who first describes parasitic plants as flowering plants. The nature of parasitic plants till doubtful for a lengthy period. Parasitic plants belong to eudicotyledons with about 280 genera and 4,500 species under 20 families. The hemiparasites have their own photosynthetic capability. Hemiparasites may be root parasites or shoot parasites. The interactions play a basic role in ecosystems. Parasites are organisms that obtain sustenance from another organism and complete at least a part of life cycle on their host (Hawksworth & Wiens 1996). There are two major types of parasites plant species; hemiparasites contain green leaves which perform photosynthesis, but dependent on host plants for water and minerals uptake and beside this, the holoparasites have no and/or low chlorophyll content and lack of own photosynthetic mechanism. Mistletoes is an well-known group of parasite belong to angiosperms.

There is another classification of parasitic plants i.e. facultative or obligate. The latter must required a host, while other may stable for a long period-time and they even produce some seeds, but productivity is better when water and nutrients are supplied from one or more hosts. It is usually found that hemiparasitic root parasites are mostly facultative parasites.

Competition from other species within plant community will sooner or later eliminate a potential facultative parasite. Therefore, the terms facultative and obligate should be avoided until facultative parasites have been occurred in nature.

The majority of mistletoes belong to families Viscaceae and Loranthaceae under the order Santalales (Kuijt 1969; Barlow 1987). In the past, Viscaceae have often been placed inside Loranthaceae, but because of differences in floral structure, embryology and chromosomal traits, two families are separated which is mostly acceptable (Calder 1983). Molecular phylogenetic studies further support this separation by resolving both families as

independent monophyletic groups (Nickrent & Duff 1996; Nickrent 2002). According to Barlow (1983), Viscaceae and Loranthaceae shows great similarity within their morphology and it is an example for convergent evolution. Mistletoe types include root-parasitic, terrestrial shrubs (e.g. *Nuytsia floribunda*), common epiphytic stem parasites (e.g. *Viscum album*). But, In APG II system (2003) does not familiar regarding this family and treating it as a synonym of Santalaceae. In southern region of Bengal, three hemiparasitic plants are very common rather than other and they belong to order Santalales. These are *Loranthus parasiticus*, *Viscum album* and *Macrosolen cochinchinensis*. The former two belong to family Loranthaceae and the later one is under family Santalaceae.

*Loranthus* is a kind of hemi-parasitic which on the cracked branches of trees. It is generally designated as showy mistletoe family. In earlier systematic category the mistletoe species have bisexual flowers, though unisexual flowers are also found in this group. Though the systematic status of *Loranthus* is still a matter to be concerned because some showy hemiparasites in this sub-continent may be the true parts of this *Loranthus*.

*Macrosolen cochinchinensis* is a stem hemiparasite under the family Loranthaceae. This bushy shrub flourished well in natural forest vegetation on the aerial branches of old aged plant and penetrate the haustorium into the cracked bark. Though the detail study and analysis of the plant are not reported in Indian literature and till neglected

*Viscum album*, the mistletoe belongs under the Santalaceae family, which is commonly called as European mistletoe or common mistletoe (Old English *mistle*) or as simple as mistletoe. It is very much common in continent of Europe and mainly restricted to western as well as southern part of this continent. This type of hemiparasite are generally grow on different types of trees. The plants have its own signature in European mythology and

customs. Now a days, The species of *Viscum* particularly *V. album* are used in Christmas decoration for its natural beauty as well as symbology.

The present work is based on details description of morphology, micro-morphological as well as gross anatomical feature of the stem and leaf, to evaluate their systematic significance of these three hemiparasitic taxa. In this work also provides the use full information of ecology, effect of pollution in their distribution pattern, silver-nano particles synthesis properties, phyto-chemical screening and anti-microbial properties for medicinal purpose or electronics, textile, cosmetics biomedical etc. But the survey result which is coordinate by related to this plants are found in the pocket of forest of South part of Bengal and also very difficult to distinguish with other plants as they are intermingled or mimic in nature. The camouflage nature which is very unique makes it more difficult to recognize and locate within the forest. They grow and intermingled with the stem of host plant and similar to the branches of the same tree.