

Studied on the parasitic plants of Pondicherry Engineering College Campus, Puducherry

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SUMMARY

Parasitic plants namely, *Dendrophthoe falcata* (L.f.) Ettingsh of Loaranthaceae and *Cassytha filiformis* L. of Lauraceae infesting the plants of Pondicherry Engineering College Campus at Pillaichavady were studied. They were growing on various hosts causing extensive damage to gardens and forest plants. *Dendrophthoe* was found growing on 26 species of angiosperms of which 22 were trees and 4 were shrubs, *Cassytha*, a leafless parasite was found growing on 20 species of which seven were trees, four shrubs, five climbers and four herbs. The parasite, *Dendrophthoe* was growing luxuriantly on exotic plants such as *Cassia siamea*, *Acacia auriculiformis*, *A. holosericea* and *Samanea saman* whereas the *Cassytha* was found on indigenous plants such as *Azadirachta indica*, *Cissus vitiginea*, *Benkara malabarica* and *Syzygium cumini*. Both are non host specific, but show preferential growth on certain hosts was evident from their morphological manifestation. The growth of *Dendrophthoe* on *Moringa oleifera* is reported for the first time and is a new host recorded in this study.

Key words : Parasite, Host, *Dendrophthoe*, *Cassytha*, exotic, Indigenous.

Many flowering plants, besides a large number of cryptograms, are known to exist as parasites and cause considerable damage to the garden and forest plants (Mathur, 1949). 277 genera and 4100 species of flowering plants are reported to be parasitic on different host plants, out of which only 25 genera can cause negative impact (Nickrent and Musselman, 2004). They grow on other plants to secure maximum amount of sunlight, food, water and air for themselves. The “struggle for existence” and “the survival of the fittest” makes the parasitic flowering plants imperative for such weaklings to seek the help of others. Parasitic plants such as *Cuscuta*, *Cassytha*, *Balanophora*, *Orobanche*, *Christionia*, and *Rafflesia* are total parasites, whereas *Dendrophthoe*, *Viscum*, *Santalum*, *Pedicularis*, *Myzodendron*, *Rhinathus*, *Thesium*, *Melampyrum*, *Tozzia*, *Euphrasia*, *Barisia* etc. are partial parasites (Mathur, 1949). *Dendrophthoe* belongs to Loranthaceae and is called as mistletoe whereas *Cassytha* belongs to Cassythaceae and is called as dodder. Both mistletoes and dodders cause serious problems for the host plants and are stem parasites (Mathur, 1949). Dodder is weedy, cover woody plants and damages certain economically important crop plants. Mistletoes can become so abundant on a tree, that most of the foliage is of parasite not the host in some cases. Parasite never kills the host, so they live unhappily together

(Nickrent, 2002). Brand (1938) reported that *L. longiflorus* var. *falcata* (*Dendrophthoe falcata*) is the main species attacking at least 110 tree species including *Tectona*, *Acacia*, *Albizia* and *Melia* species in Chennai.

Anuradha (2005) has reported the infestation of *Dendrophthoe* on 44 arborescent species in the forest of Shakthi – Auroville of Tamil Nadu. *Cassytha* is a highly climbing, parasitic vine of laurel family. The host-range of *Cassytha* is broad and is abundant in Southern Florida and in Australia (Nickrent and Musselman, 2004). Although the host parasite relationship exists in plants, we will understand very little about how and why different plants are selected, why some plants are favoured, and some are avoided entirely (Nickrent and Musselman, 2004).

Double, triple and hyper-parasitism are also common where *Loranthus* serves as a host for some other species while it is itself a parasitic on another plant. Ezekiel (1935) reported the occurrence of double parasitism of *Loranthus* and *Viscum* on *Eugenia* plants. Rao (1938) has also reported the case of triple parasitism from Bangalore where *Shorea talusa* is severely infested by *Dendrophthoe* (*Loranthus*) and in turn it is infected by *Viscum ramosissimum*.

Cassytha was found also growing on *Dendrophthoe falcata*, an evergreen parasitic shrubs, itself growing on a wide range of hosts (Ghosh *et al.*, 2002). *Cassytha* makes haustorial nodes on almost all vegetative and reproductive parts of *Dendrophthoe viz.*, branches, lamina, petioles, flowering peduncles and young fruits. Both parasites belong to two different genera and families of Lauraceae and Loranthaceae, respectively. This

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