# FIELD IDENTIFICATION GUIDE TO 12 SPECIES OF BANGLADESH LORANTHACEAE

M. K. Alam

The paper includes a field key of 12 species of Bangladesh Loranthaceae based on their leaves and indumentum characters. Brief taxonomic notes on vegetative characters of the species, their flowering time and distribution in Bangladesh have been presented.

## INTRODUCTION

The members of Loranthaceae, generally known as mistletoes, are semiparasitic shrubs (rarely erect terristrial as *Nuytsia* in Australia) growing on the host with the help of modified roots. They cause more economic loss than members of any other parasitic family of angiosperms. They mostly attack dicotyledons and gymnosperms which include forest trees, horticultural plants and plants of aesthetic value. The effects of parasites on the hosts are manifold. The hosts are subjected to reduction of vigour, growth rates, poor fruit and seed production, formation of burrs on truck or branches, reduction in foliage, drying of top, predisposition to insect and other disease attacks ultimately causing premature death. In tropical and sub-tropical forests, mistletoe infection sometimes creates havoc and damages large number of forest trees. In Bangladesh many of the important forest trees like Teak (*Tectona grandis* Linn.), Gamar (*Gmelina arborea* Roxb.) Sal (*Shorea robusta* Gaertn. f. ) etc. and several fruit trees like Mango (*Mangifera indica* Linn.) Jack fruit (*Artocarpus heterophyllus* Lamk.) are attacked and damaged by mistletoes. The family, Loranthaceae, is distinguished by its usually parasitic habit, leathery leaves, cup-shaped receptacle, inferior one celled ovary, lacking in a clearly defined loculus and well defined ovules.

In Bangladesh the family is represented by 15 species under seven genera. Of them, the most common species are *Dendrophthoe falcata* (Linn. f.) Etting, *Macrosolen cochinchinensis* (Lour.) Van Teigh. *Scurrula parasitica* Linn., *S. gracilifolia* (Roxb. ex Schult.) Dans. and *Viscum monoicum* Roxb. ex DC which are widely distributed in all the districts of Bangladesh. *S. pulverulenta* (Wall. ex Roxb.) G. Don is distributed in northern districts, mainly Dinajpur, *Taxillus*

*thelocarpa* (Hook. f.) Alam in Chittagong and *T. umbellifer* (Sculto) Dans. in Sylhet. Species of *Helixanthera* are distributed in the forests of Sylhet and Chittagong. *D. falcata* and *V. monoicum* are two common species found in Sunderbans forest.

Loranthaceae are usually classified by their flowers. But in the field, the flowers are not always available and, therefore, foresters, biologists, pathologists and the people working with mistletoes may not find flowers during their visits. So they need some guide to identify mistletos without flowers. The present paper is an attempt to distinguish 12 species of Bangladesh Loranthaceae by their vegetative characters mainly on the characters of leaves and their indumentums. Following the vegetative key, brief taxonomic notes on vegetative characters of the species with local names ; where available, and their distribution in Bangladesh have been given. Synonyms have been given in parenthesis after the name. Flowering period has been mentioned so that one can collect the flowering materials, if needed, for critical study. The leaves of some species viz. *Dendrophthoe falcata, Scurrula gracilifolia, S. parasitica* show variation. Variation is also marked in the colour and degree of presence of indumentums in the species of *Scurrula*. So some might face some difficulties in working out some species in the key. Brief descrip tions will be helpful in cross checking the species included in the key. Any suggestion for improving the key will be appreciated.

## VEGETATIVE KEY TO 12 SPECIES OF LORANTHACEAE IN BANGLADESH

| | | |
|---|---|---|
| 1. | Leafless. Mostly trichotomously branched pendulous shrub | *Viscum articulatum* |
| 1. | Leafy | 2 |
| 2. | Parallel nerved ; main veins from the base | 3 |
| 2. | Penninerved | 4 |
| 3. | Leaves ovate or falcate ; acute or acuminate | *Viscum monoicum* |
| 3. | Leaves obovate to elliptic-oblong and linear oblong ; obtuse | *Viscum orientale* |
| 4. | Leaves glabrous | 5 |
| 4. | Leaves and young shoots pubescent ; tomentose on both upper and lower surfaces | 9 |
| 5. | Leaves all alternate (sometimes sub-opposite). Elliptic-lanceolate to obovate, obtuse, coriaceous ; secondary veins indistinct ; a gradual crest on the branch below the petiole base | *Dendrophthoe pentandra* |
| 5. | Leaves opposite and alternate in the same plant | 6 |

| | | |
|---|---|---|
| 6. | Leaves sessile (sometimes subsessile) ; tip rounded ; branches thickly lenticelled | *Dendrophthoe falcata* |
| 6. | Leaves petioled ; tip obtuse to obtuse acuminate or subacute ; branches thinly lenticelled | 7 |
| 7. | Stem and branches greyish brown ; leaves elliptic or elliptic ovate ; tip mostly acuminate | *Macrosolen cochinchinensis* |
| 7. | Stem and branches blackish-grey ; leaves ovate-lanceolate, ovate-elliptic to elliptic oblong | 8 |
| 8. | Leaves sub-acute at both ends ; elliptic to oblong-elliptic ; stem and old branches granular lenticelled | *Taxillus umbellifer* |
| 8. | Leaves obtuse towards the base ; tip acute ; ovate-lanceolate to ovate elliptic ; stem and older branches fissured lenticelled | *Helixanthera parasitica* |
| 9. | Branchlets and leaves beneath clothed with fine thickly cinnamon or twany, stellate tomentum ; leaves glabrous and opaque above | *Taxillus thelocarpa* |
| 9. | Branchlets and young leaves on both the surfaces covered with white, mealy grey or rusty tomentum | 10 |
| 10. | Young shoots and leaves covered with scurfy white, mealy tomentum ; leaves broadly ovate or ob-ovate. Leaf margins sometimes irregularly eaten by insects ; branches pendant | *Scurrula pulverulenta* |
| 10. | Young shoots and leaves covered with scurfy greyish-brown or rusty tomentum ; leaves elliptic, elliptic-oblong to ovate-oblong | 11 |
| 11. | Leaves and young twigs rusty tomentose | *Scurrula parasitica* |
| 11. | Leaves and young twigs dark brown, grey or greyish-brown —tomentose | *Scurrula gracilifolia* |

## BRIEF TAXONOMIC NOTES WITH DISTRIBUTION AND FLOWERING PERIOD

1. **Dendrophthoe falcata (Linn. f.) Etting.** (*Loranthus longiflorus* Linn. f.)

**Vernacular Names :** Bhanda, Phoroulla (Chittagong)

Parasitic shrub. Stem often more than 1 m long ; form a burr at the point of attachment with the host tree. Bark grey, thickly lenticeolate. Leaves 5–15 x 4–10 cm ; opposite or alternate, very variable in shape, ovate-oblong or elliptic, tip obtuse or rounded ; emergent leaves reddish, sub-sessile to petiolate, petiole 1-5 mm long

**Flowering time :** October to January
**Occurance :** Occur throughout Bangladesh

2. **D. pentandra (Linn.) Miq.** (*L. pentandra* Linn.)

A parasite of considerable size. Branches shiny grey, lenticellate, adventitious roots running along the host of sending out haustoria at intervals. Leaves 5–15 x 3.8 cm, elliptic-lanceolate, ob-ovate, thick, veins obscure ; tip obtuse or rounded, base cuneate or narrowed into a petiole of 7-10 mm. long ; below the petiole base there is a gradual crest like ridge on the branch

**Flowering time :** December to May

**Occurance :** Occurs in the districts of Sylhet and Chittagong

3. **Helixanthera parasitica** (*L. pentapetatalous* Roxb.)

Large much branched parasitic shrub, quite glabrous. Adventitious roots running along the host. Leaves 5–12 x 2–5 cm ovate-lanceolate to ovate-elliptic, acute, entire, coriaceous, base rounded petiole 1–2 cm

**Flowering time :** February to May

**Occurance :** Occurs in the forests of Chittagong, Chittagong Hill Tracts and Sylhet

4. **Macrosolen cochinchinensis (Lour.) Van Teigh.** (*L. ampulaceus* Roxb. *L. globosus* Roxb.)

**Vernacular Names :** Chota bhanda, Pargacha, Rema (Sylhet)

Much branched, quite glabrous. Branches lenticellate, nodes swollen, base of the plant on the host swollen, the adventitious roots running along the host. Leaves 4–12 x 1.2-4.0 cm, elliptic, elliptic-lanceolate, ovate, shining above, tip obtusely acuminate, base acute or cuneate ; petiole 3–10 cm long

**Flowering time :** January to April
A common parasite of Bangladesh.

5. **Scurrula gracilifolia (Roxb. ex Scult.) Dans.** (*L. scurrula* var. *graciliforus* Kurz.)

A large bushy wood parasite. Stem often form a burr at the point of attachment of the host plant. Branches lenticellate, all young parts densely covered with dark brown, grey or greyish brown tomentums, on maturity the upper surface of the leaves become almost glabrous. Leaves 3–8 x 1.5–4.5 cm, elliptic to ovate, tip acute to obtuse, base rounded, rarely sub-cordate ; petiole 3–10 mm long

**Flowering time** : November to February

**Occurance** : Common parasite of the forests of Chittagong, Chittagong Hill Tracts and Sylhet. Also occurs in other parts of the country.

6. **S. parasitica Linn.** (*L. scurrula* Linn.)

A large bushy parasitic shrub with runner like adventitious roots. Branches lenticellate, older branches usually brown, young twigs rusty tomentose. Leaves 3–8 x 1.5–5 cm, opposite, sometimes sub-opposite, elliptic-oblong, ovate-oblong to obovate, base acute-obtuse to rounded, apex obtuse rounded, principal veins often purplish when young, scurfy or tomentose ; petioled or subsessile ; petiole upto 5 mm long

**Flowering time** : January to April

**Occurance** : Occurs in most of the districts of Bangladesh

7. **S. pulverulenta (Wall. ex Roxb.) G. Don.** (*L. pulverulentus* Wall. ex. Roxb.).

Stout, woody parasites, dark grey. Branches lenticellate, pendent, young shoots white floccose. Leaves 5–15 x 1.5–70 cm, opposite, broadly ovate to ovate-oblong, acute or obtuse, base rounded or acute ; sometimes margins irregularly eaten by insects, both sides covered with whitish grey tomentume.

**Flowering time** : October to December

**Occurance** : Occuras in the northern districts of the country.

8. **Taxillus thelocarpa** (Hook. f–) Alam (*L. thelocarpus* Hook. f.)

Woody parasite, runner like adventitious roots, Branches stout, terete, sparsely lenticellate ; bark grey, branchlets clothed with twany, scurfy tomentum ; leaves 3–7 x 2–3 cm, ovate or ovate-oblong, obtuse, base rounded, glabrous and opaque above, clothed with very fine thick rusty brown or twany, scurfy tomentum beneath.

**Flowering time** : September to October

**Occurance** : Recorded from the forest of Chittagong only

9. **T. umbellifer (Schult.) Dans.** (*L. umbellifer* Scult.)

A stout woody parasite, adventitious roots running along the host. Branches grey, lenticellate, younger parts pubescent. Leaves opposite or alternate ; 3.5—12.0 x 26.0 cm elliptic to elliptic lanceolate ; petiole 10 mm long. Veins distinct, 5–6 on either half of the mid-rib

**Flowering time** : November to January

**Occurance** : Recorded from Sylhet forest only

10. **Viscum articulatum Burm.**

A leafless, pendulous, mostly tricho-mously branched, green, parasitic shrub, yellow black when dry ; internodes longitudinally grooved, 1–6 cm long, 2–10 mm broad, thickend at nodes

**Flowering time** : January and February

**Occurance** : Occurs in the forests of Sylhet, Chittagong and Chittagong Hill Tracts

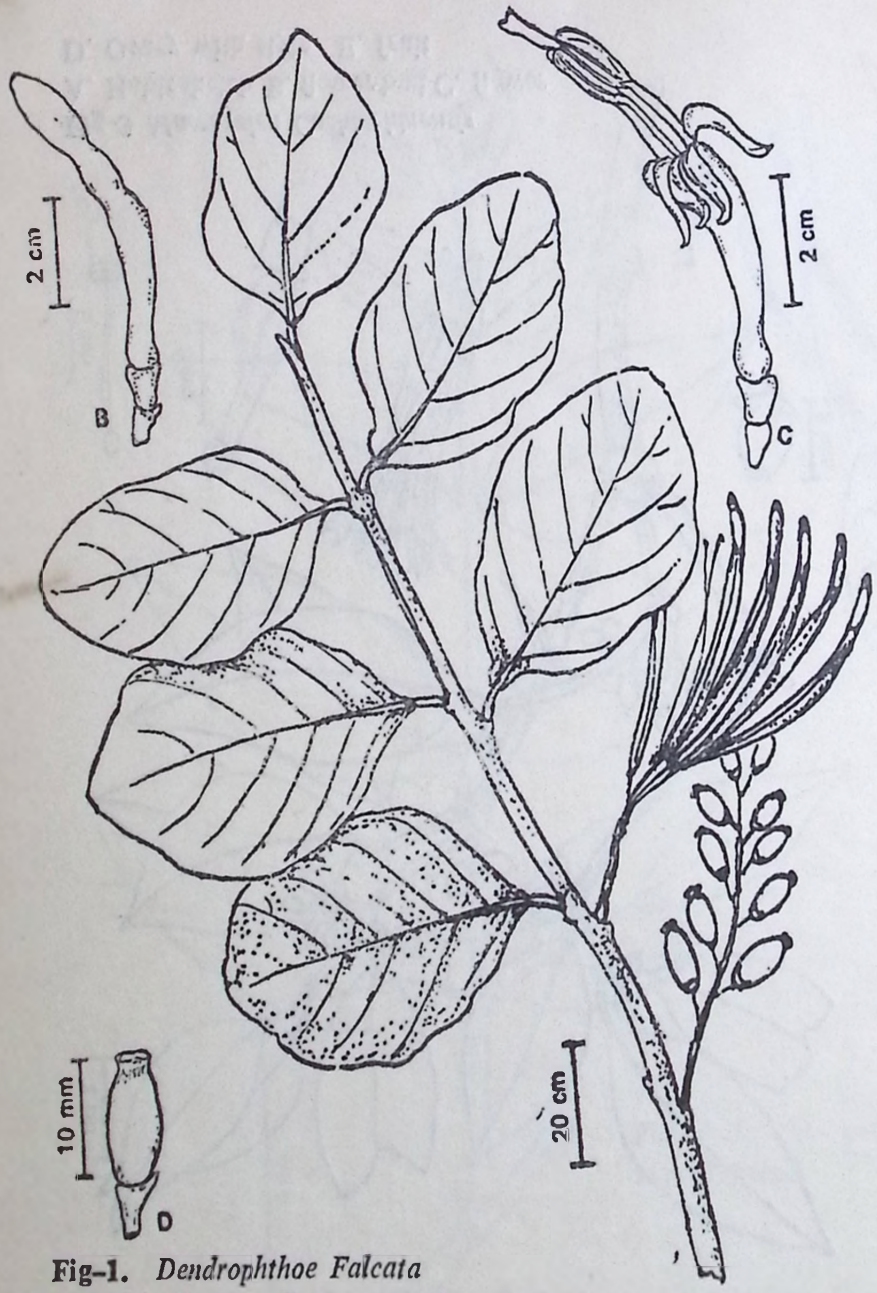



**Fig-1.** *Dendrophthoe Falcata*
A. Habit sketch B. flower bud C. flower
D. fruit

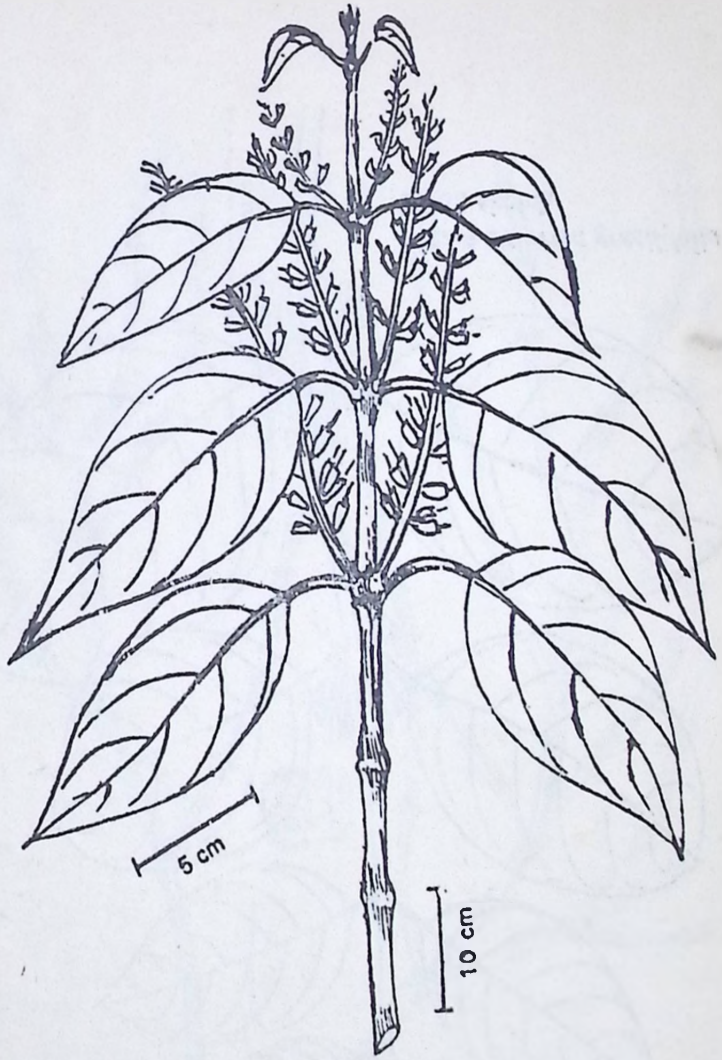
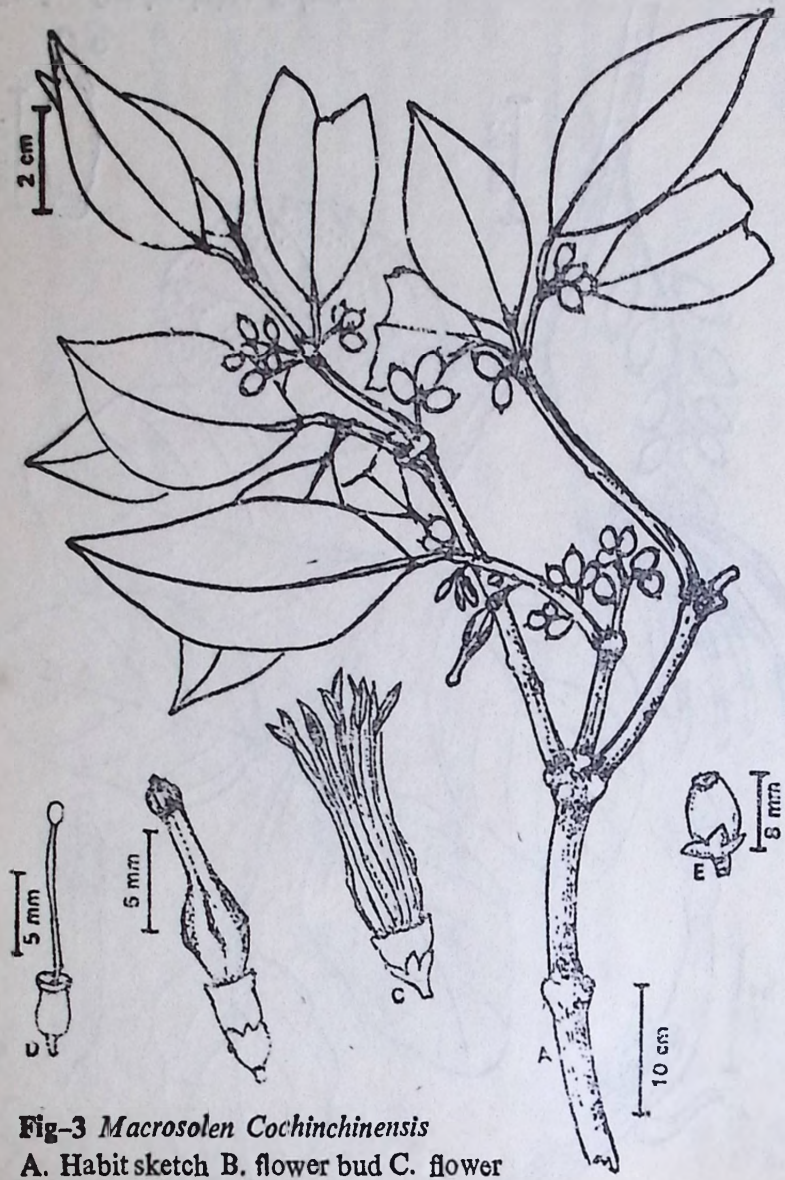



**Fig-2** *Helixanthera parasitica* Habit sketch




**Fig–3** *Macrosolen Cochinchinensis*
A. Habit sketch B. flower bud C. flower
D. Ovary with style E. fruit

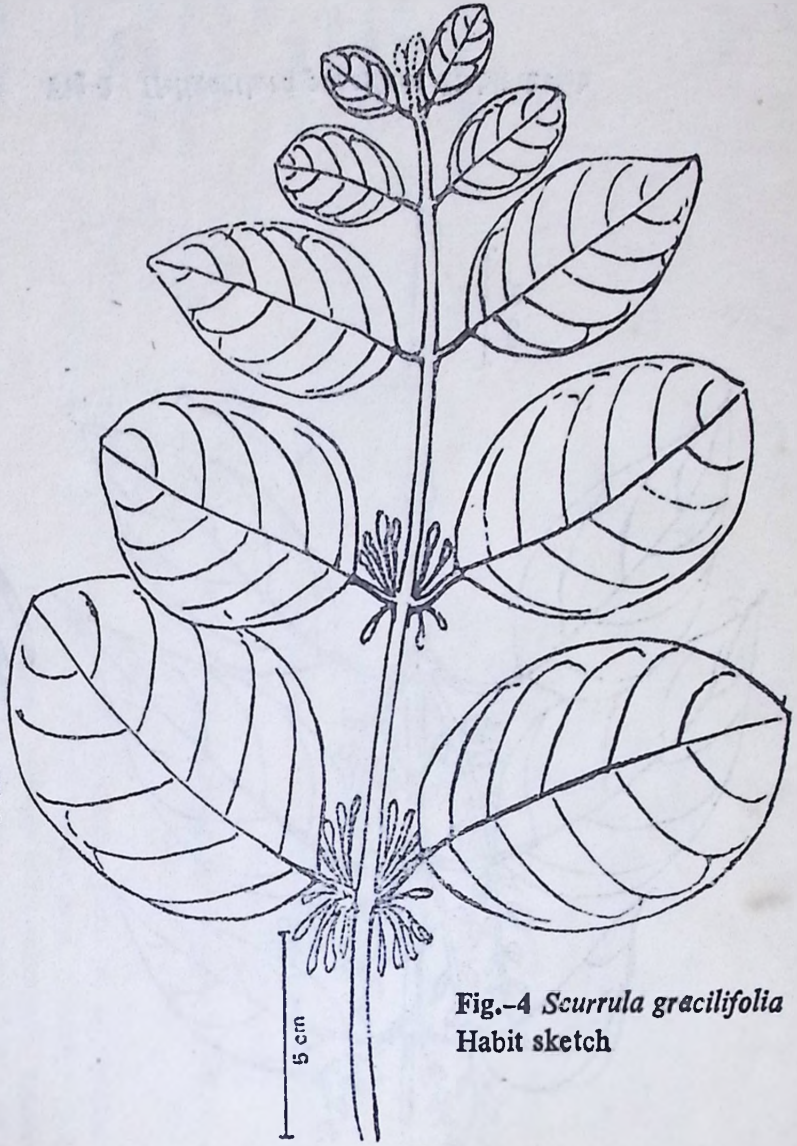



**Fig.–4** *Scurrula gracilifolia*
Habit sketch

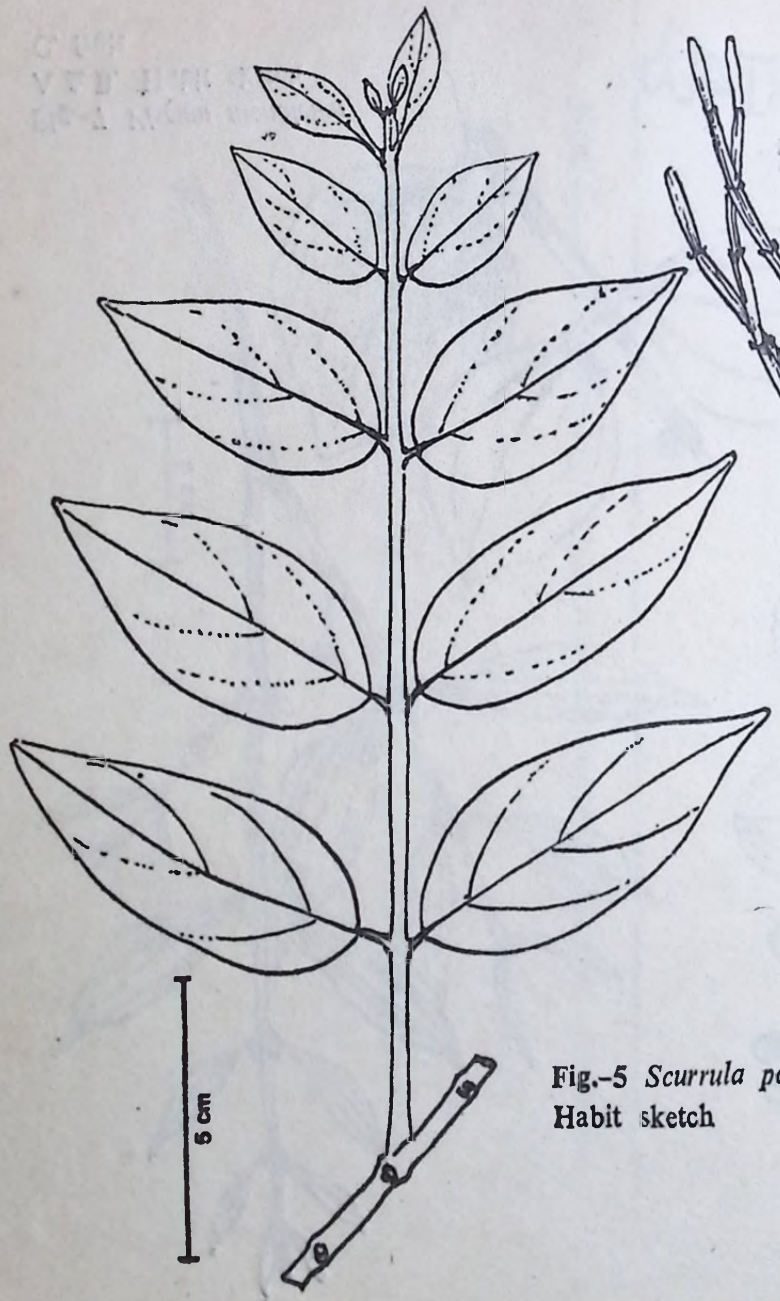



Fig.-5 *Scurrula parasitica*
Habit sketch

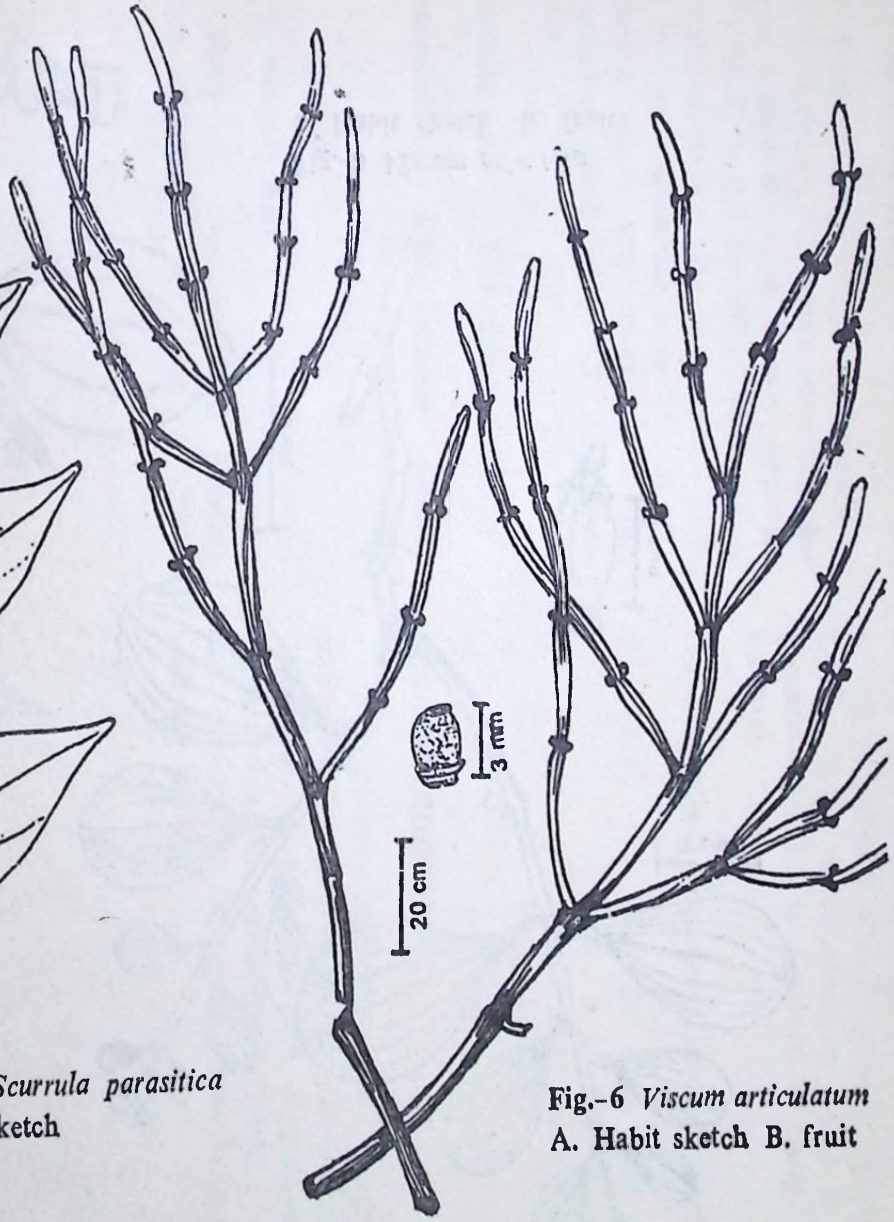



Fig.-6 *Viscum articulatum*
A. Habit sketch B. fruit


**Fig.–7** *Viscum monoicum*
A & B. Habit sketch
C. fruit

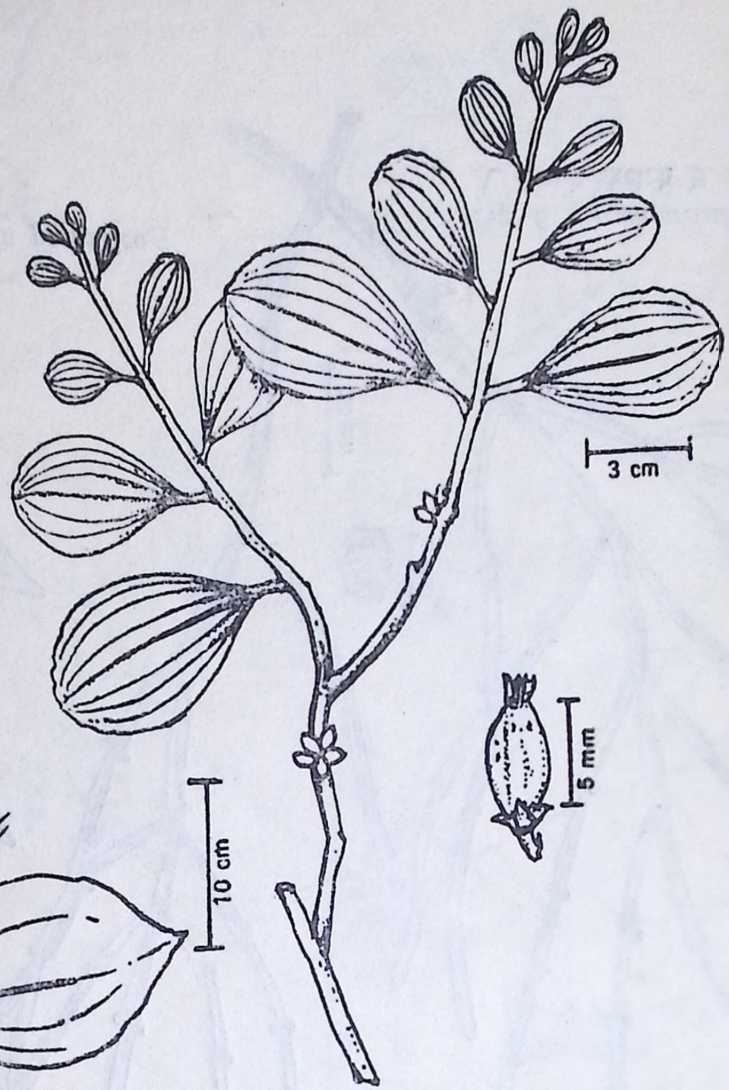



**Fig.–8** *Viscum orientale*
1. Habit sketch B. fruit

11. **V. monoicum Roxb. ex DC.**

Stems 40 cm or longer, much branched, branches decussate in lower parts, dichotomous toward the apex. Leaves opposite, 2.5–10.0 X 0.6–3.5 cm, elliptic to lanceolate usually somewhat falcate, apex acute or somewhat acuminate, attenuated at base tapering into a very short petiole like structure; usually with 5-7 longitudinal veins

**Flowering time** : November to February

**Occurance** : A common parasite occuring all over the country

12. **V. orientale Wild.**

Evergreen much branched parasitic shrub. Stems 45 cm long or more, terete with swollen node, internodes usually smooth, sometimes slightly striped. Leaves 2–6 X 1–3 cm, ovate-oblong or somewhat obovate with 3–5 longitudinal veins from the base

**Flowering time** : December to February

**Occurance** : Recorded from Banderbans and Chittagong only; may occur in other places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*M. K. Alam, Senior Research Officer, Forest Research Institute, Chittagong, Bangladesh*