



## RARE AND NEW FLOWERING PLANTS OF CUDDALORE DISTRICT, TAMIL NADU, INDIA

**D. Subramanian**

Department of Botany (Retd.), Annamalai University, Annamalai Nagar – 608 002, Tamil Nadu

### Abstract

The present paper deals with rare and interesting flowering plants from Adari forest, Karmangudi forest and Kapper Hills of Tamil Nadu. They are present in the plain areas near sea-shore of Bay of Bengal. So far, these places have not been floristically studied. Important plants observed are *Balanitis roxburghii* Planchan; *Rhus mysorensis* G. Don; *Santalum album* Linn; *Memecylon umbellatum* Burm f. *Scutia myrtina* (Burm. F.) Kurz, *Bauhinia racemosa* Lam. *Dichrostachys cinerea* (L.) White & Arn; *Canthium coromandelicum* (Burm. F.) Alston; *Richardia scabra* L. *Dolichondron falcata* (Wallich. ex Dc.) Seemann; *Sarcostemma intermedium*. Deene, *Eulophia epidendreae* (J. Koenia) Schltr. *Curculigo orchioides* Gaertner; *Floscopa scandens* Lour; *Catunaregum torulosa* (Dennst) Tirv; *C. dumetorium* (Retz.) Tirv. *Cleome tenella* Linn; *Capparis sepiaria* Linn. and *Doddonea angustifolia* L. Besides, new species and varieties have been also described.

**Key words** : Flowering plants, sea-shore, rare species, flower and fruits characters.

### Introduction

Some of the rare species, which are not available in the plain areas of Cuddalore district are collected and described in this paper with illustrations, from Kapper Hills, Karmangudi forest and Adari forest of this District.

### Materials and Methods

Plants were collected from intermittent field trips for the past 5 years and their parts were examined under compound microscope. All the illustrations have been made by the author.

3 to 4 sets of herbarium specimens have been prepared in each plant. A set of Holotypes has been deposited at Botanical Survey of India (B.S.I.) Southern circle at Coimbatore (CBE), Tamil Nadu (T.N.) Isotypes are kept at author's home laboratory at 277, Mariappa Nagar, Annamalai Nagar – 608 002 (Tamil Nadu), India.

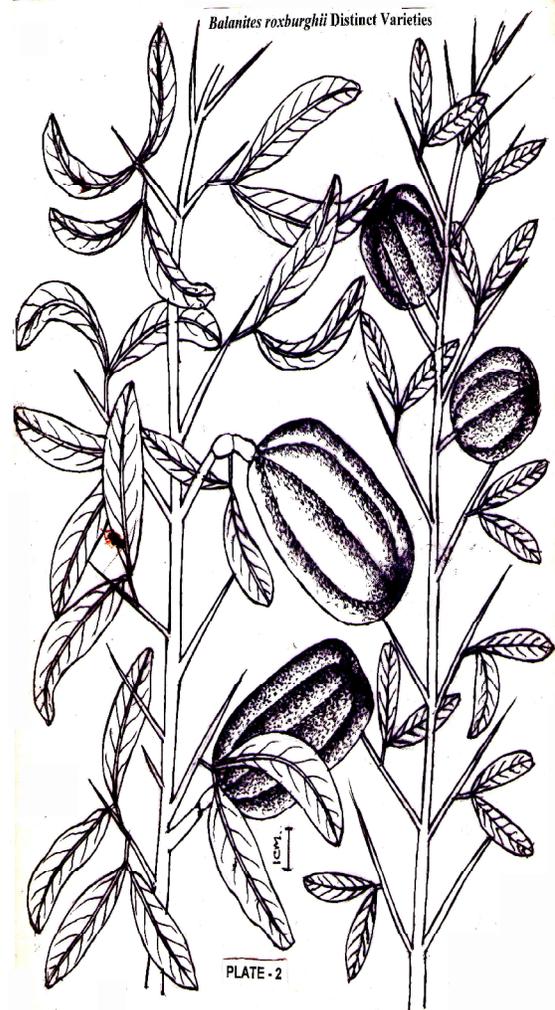
### Observations and Discussion

Karmangudi forest is mostly filled with trees like, *Acacia arabica*, *Feronia elephantum* and *Capparis* species.

*Balanitis roxburghii* is commonly occurring. But people in the neighbouring villages do not know its uses. Gamble (1957) has written in his book "The Flora of the Presidency of Madras" that the fruits of this plant were used by earlier people to prepare pickles and for country medicines. Likewise, the fruits of *Capparis* species were used for edible purposes. Mathew (1988) had written in his book "Flora of the Tamil Nadu Carnatic, Vol. II" that he had seen only one plant of *Balanitis roxburghii* in a Government park. But from Karmangudi forest to Adari forest, there are hundreds of plants. There are 3 varieties differing in fruit characters (plates 1 & 2). Here, in Karmangudi forest, there are a large number of *Capparis sepiaria* L., *C. divaricata* Lam; *C. grandis* Lf; *Flacourtia indica* (Burm. f.) Merr; *Glycosmis pentaphylla* (Retz.) D.C. and *Toddalia asiatica* (L.) Lam.

In Kapper hills, *Memecylon umbellatum* are commonly available. In a neighbouring village Mudhunai, two more types of this plant were noted in a temple sanctuary of Lord Sri Sembanar Swamy. These two plants are differing in many characters and they will be identified shortly.

The next plant of interest is *Doddonea angustifolia* L.P. (*D. Viscosa* Jacq). This species and *Canthium*



Plates 1 & 2 : 3 Varieties of *Balanites roxburghiana*.

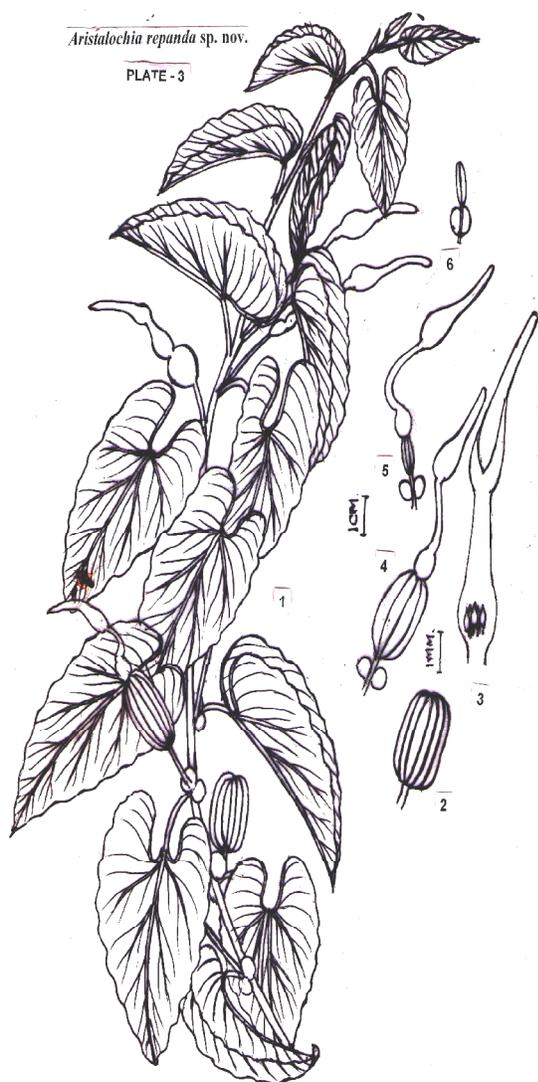
*coromandelicum* (Burm f.) Alston, *Benkara malabaricum* (Lam.) Tirv., *Bixa orellana* L., *Randia* species, *Catunaregam dumetorum* and *C. torulosa* are usually present from 4000 to 5000 feet altitudes of Eastern and Western Ghats of Tamil Nadu, India. Now, the occurrence of these species in 200 to 300 feet altitude of Kapper Hill is very interesting. This shows that once upon a time Kapper Hills should have been a large mountain with thick forest with 3000 to 4000 feet altitudes. Now in course of time due to human disturbances and cyclones this area has been converted into almost a plain area. But, a few members present in the past alone are available like *Doddonea angustifolia*.

The next plant of interest is a wild plant *Aristolochia* in and around Kapper Hills. This plant is a climber on other support and it is 5 to 6 feet spreading with branches. In seedling stage, it resembles *A. bracteolata* Lam. (*A. bracteata* Retz.), which is a small herb with a few branches crawling on the ground to 1 to 1½ feet length

and this species has whitish green cordate leaves with linear margin. But the present species has cordate ovate leaves, green colour with wavy margin. The flower and fruits characters also differ in these two species. The present species is also differing from *A. tagala*, *cham.*, *A. indica* L. and *A. grandiflora* S.W. Therefore, the plant is named here in as *Aristolochia repanda* sp. nov. (plate 3).

Holotype No. 25 dated 26.5.2015, deposited at B.S.I., CBE., T.N. and Isotype at author's home laboratory.

There are 7 species of *Cleome* reported from South India. Apart from these, the author has collected a peculiar species of *Cleome*. It is a spreading herb on roadsides to a length of 1 to 2 feet. The aerial branches arise from a thick root stalk. Leaves alternate, trifoliate, the central lobe larger and longer than the side ones, hairy, 0.15 to 2.0 cm length; 0.12 to 0.18 cm breadth. Flowers axillary, small, dull yellow, cylindrical, 0.2 to 0.3cm long ovary with 4 to 5 ovules and fruit cylindrical, 0.5 to 0.6cm long.



**Plate 3 :** *Aristalochia repanda*.

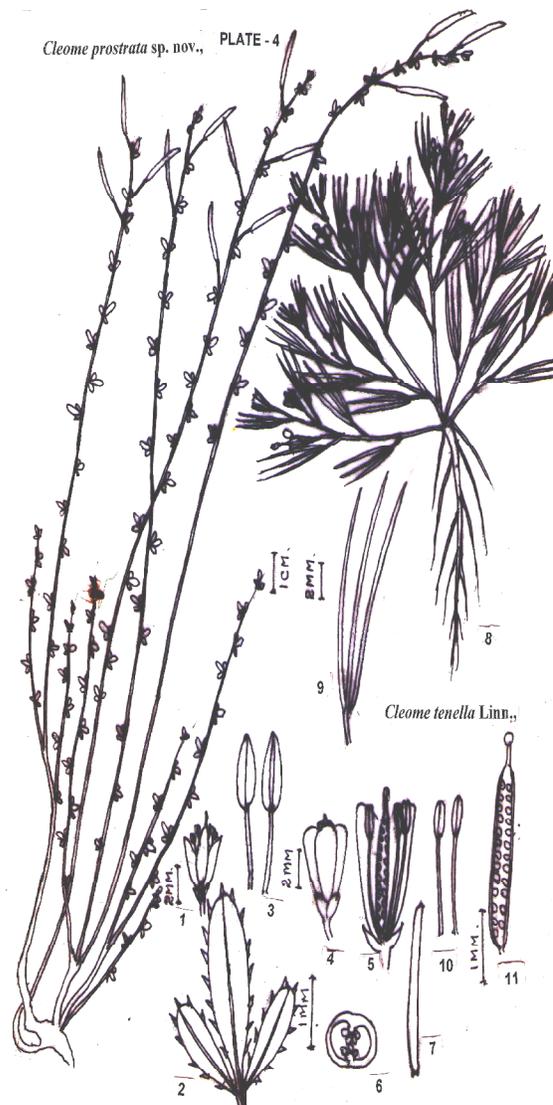
1 = A twig, 2 = Fruit; 3 = L.S. Flower, 4 & 5 = Flowers; 6 = Stamen.

This species resembles to some extent to *Cleome tenella*. *L* in small yellow flowers and cylindrical fruits but the latter species is erect with needle like leaflets. Therefore, the author has given the name *Cleome prostrata* sp. nov. (plate 4).

Holotype No. 26 dated 26.5.2015 deposited at B.S.I., CBE., T.N. and Isotype at author's home laboratory.

The following key serves to distinguish *Cleome prostrata* from related species.

1. **Plants erect :** Plant leaves trifoliolate filiform glabrous or needle like, flowers yellow, capsule cylindrical, narrow & long \_\_\_\_\_ *Cleome tenella*



**Plate 4 :** *Cleome prostrata*.

Fig. 1 = A flower; 2 = A leaf enlarged; 3 = Stamens; 4 = Flower after fertilization; 5 = L.S. flower; 6 = T.S. Ovary, 7 = A fruit enlarged.

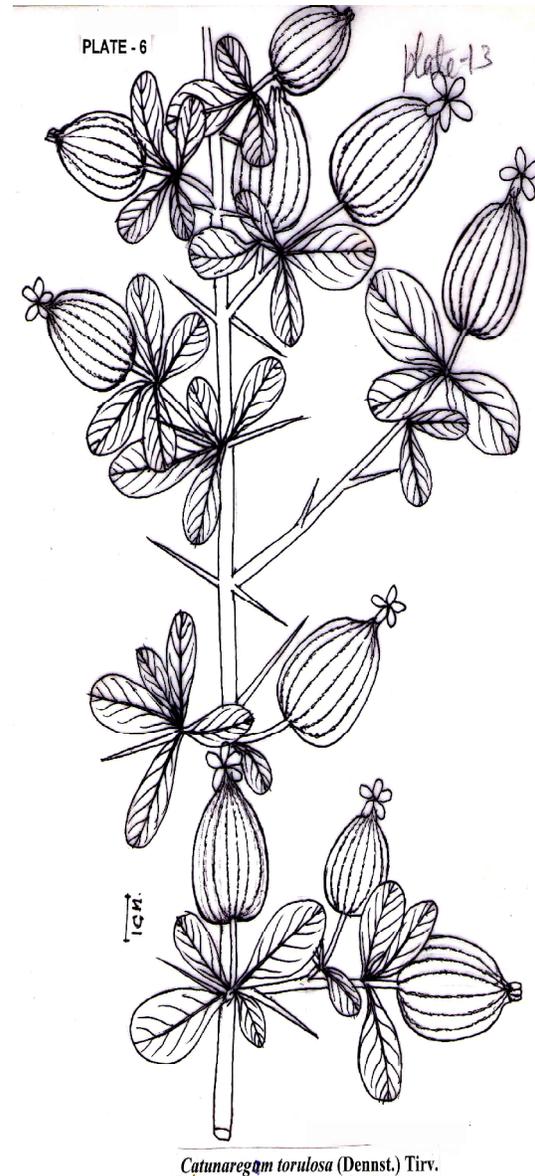
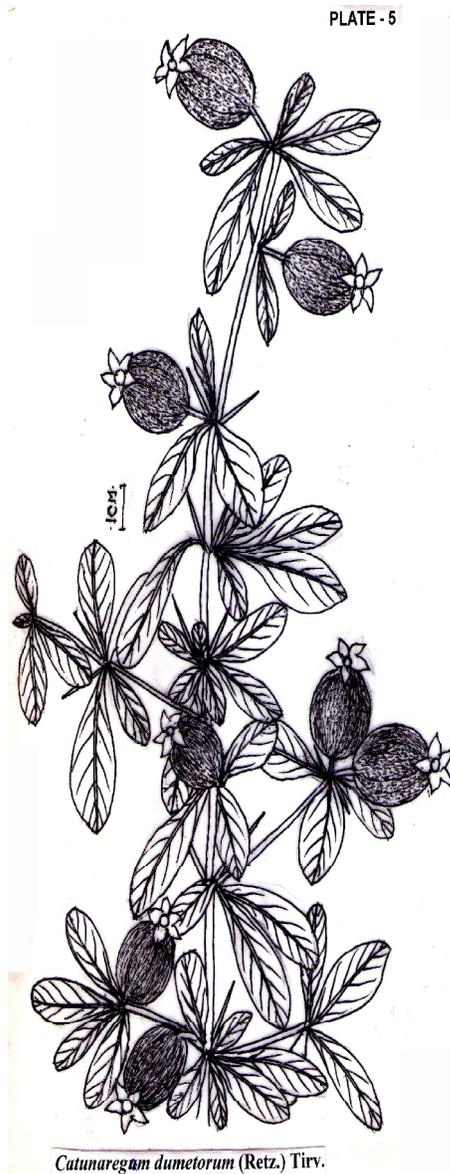
Fig. 8 to 11 : *Cleome tenella*.

8=A plant; 9=A leaf enlarged; 10 = Stamens; 11 = T.S. Ovary.

2. **Plants sub-erect :** Leaves trifoliolate leaves large, central leaflet 2 to 2.5 mm long and 1.5 to 2.0 mm broad, slightly hairy, flowers pink, capsule cylindrical but laterally compressed. \_\_\_\_\_ *Cleome aspera*.

3. Plants spreading on the Leaves, small, almost glabrous, trifoliolate, the central leaflet 1 to 1.5 mm long and 0.8 to 1 mm broad flowers yellow, capsule narrow cylindrical \_\_\_\_\_ *Cleome prostrata*.

There are 7 species of *Randia* coming under Rubiaceae, as enumerated by Gamble (1957) in his "Flora of the Presidency of Madras". Afterwards, some of the species of *Randia*, were transferred to the genera like

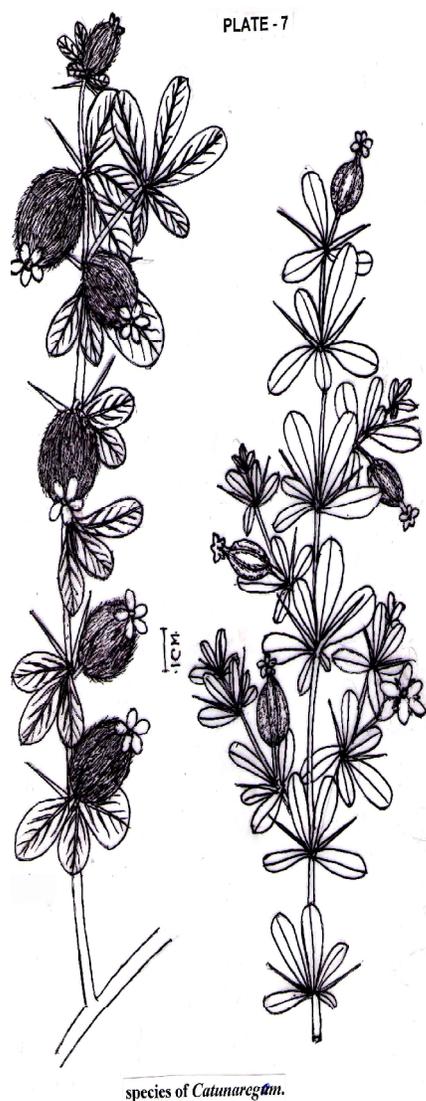


Plates 5 to 8 : Species and varieties of *Catunaregam*.

*Canthium*, *Bengara* and *Catunaregam*. Two species of the last genus have been collected from Kapper Hills, namely *Catunaregam dumetorum* and *C. torulosa*. Along with these two species 4 more types of plants resembling the above 2 species have been collected and studied. These differ from them in leaf, flower and fruit characters, 2 types resemble more to *C. dumetorum* and therefore, they are named at present as *C. dumetorum* var. *ovalifolia* var. nov. and *C. dumetorum* var. *glabra* var. nov. and the other two types as *C. torulosa* var. *rotundifolia* var. nov. and *C. torulosa* var. *oblongifolia* var. nov. (plates 5 to 8).

The Adari forest is larger and present near Kalrayan Hills of Eastern Ghats. *Curculigo orchioides* Gaertner

are present, in large numbers not only in this forest and also in the neighbouring cultivated lands as weeds. So far, the only orchid *Eulophia epidendreaea*, J. Koenig has been found very rarely during the rainy seasons in the plains. But in Adari forest this plant is found in colonies of 20 to 30 members, permanently established. Another orchid, *Habenaria* has been commonly seen during rainy seasons under shade of trees. This plant has underground oval-cylindrical rhizome. Above soil level, only large 3 thick green leaves are produced radically. Leaves oval, 2 to 3 inches long and 1½ to 2 inches broad; about 1 to 1½ feet aerial shoot with scaly leaves and terminal cluster of flowers and flower buds in racemose pattern is produced. Flowers white, the lip trilobed, central lobe larger, spur

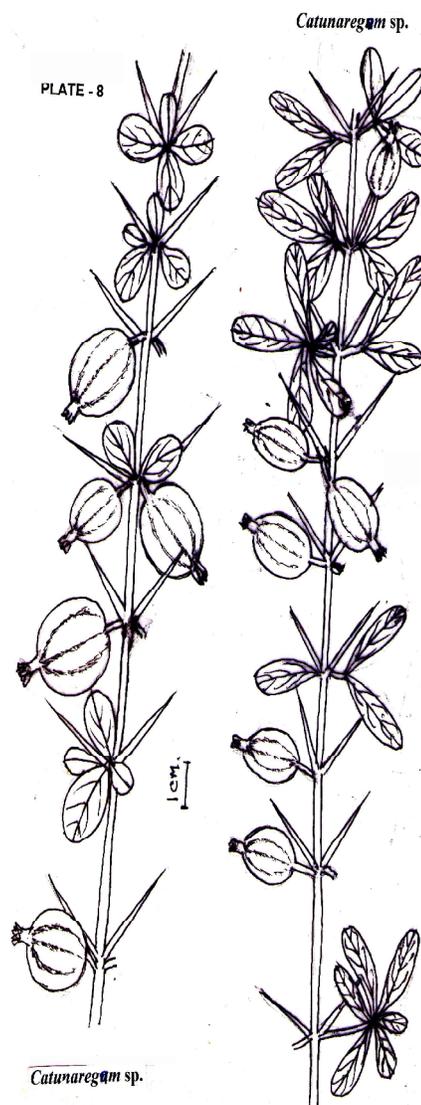


Species and varieties of *Catunaregam*.  
**Plate 7 :** *Catunaregam dumetorum* var. *ovalifolia*.  
*Catunaregam dumetorum* var. *glabra*.

longer than the lobes and slightly curved inwards. The gynandrium is different when compared to all other species of this genus.

Gamble (1957) has enumerated 28 species of *Habenaria* in his book. Of these, *H. platyphylla* Spreng and *H. plantaginea* Lindle are present from sea local to Hill stations and resemble to some extent to the present plant, but different in large number of characters. Therefore, the author has treated this plant as a new species and named *Habinaria triphylla* sp. nov. *H. coromandeliana* Willd from Babubudan Hills resembles to some extent this species (plate 9).

Holotype No. 27 dated 26.5.2015 deposited at B.S.I., CBE., T.N. and Isotype at author's home laboratory.



Species and varieties of *Catunaregam*.  
**Plate 8 :** *Catunaregam torulosa* var. *rotundifolia*  
*Catunaregam torulosa* var. *oblongifolia*

Mathew (1988) has given the diagrams of plant and plants parts of *Habenaria rariflora* A. Rich as occurring in carnatic region of Tamil Nadu. The author has collected this plant in Ariyur cholakkadu of Kollimalai Hills at an elevation of 5000 feet a few years back. The species of *Habenaria* have not been found in the plains of Tamilnadu so far. Therefore the author named it as *Habenaria triphylla* sp. nov.

The following key serves of distinguish the present plant and related species.

1. Leaves 2, radical.
2. Leaves, fleshy broadly ovate to orbicular, base cordate 1 – 4.5 inch long, spike 2 to 12 inch long, many flowered, spur as long as the beaked ovary

*H. Cerassifolia*

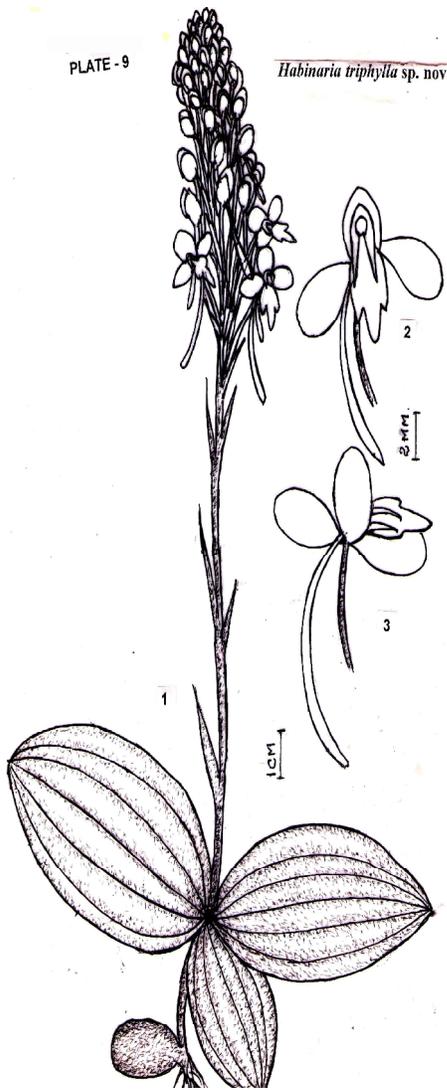


Plate 9 : *Habenaria triphylla*.

Fig. 1 = Plant; 2 = Flower face view; 3 = Flower, side view.

3. leaves, Leaves addressed to the ground, orbicular rounded or acute, base cordate, spike 1.5 to 4 inch long, few flowered, spur as long as ovary \_\_\_\_\_ *H. diphylla*.

4. Leaves oral 2 to 3 inches long and 1½ to 2 inches broad aerial shoot 1½ to 2 feet long, flowers many spur longer and curved inwards \_\_\_\_\_ *H. triphyll*.

The other important plants observed are *Rhus mysorens* G. Don (plate 11) *Santalum album* Linn., *Scutia myrtina* (Burm. f.) Kurz., *Bauhinia racemosa* Lam; *Dichrostachys cinerea* (L.) White & Arn., *Dolichondron falcata* (Wallich ex. DC) Seemann; *Sarcostemma intermedium* Deen, *Floscopa scandens* Lour and *Parkinsonia acueata* L.

Gamble (1957) has recorded 80 species of *Crotalaria*



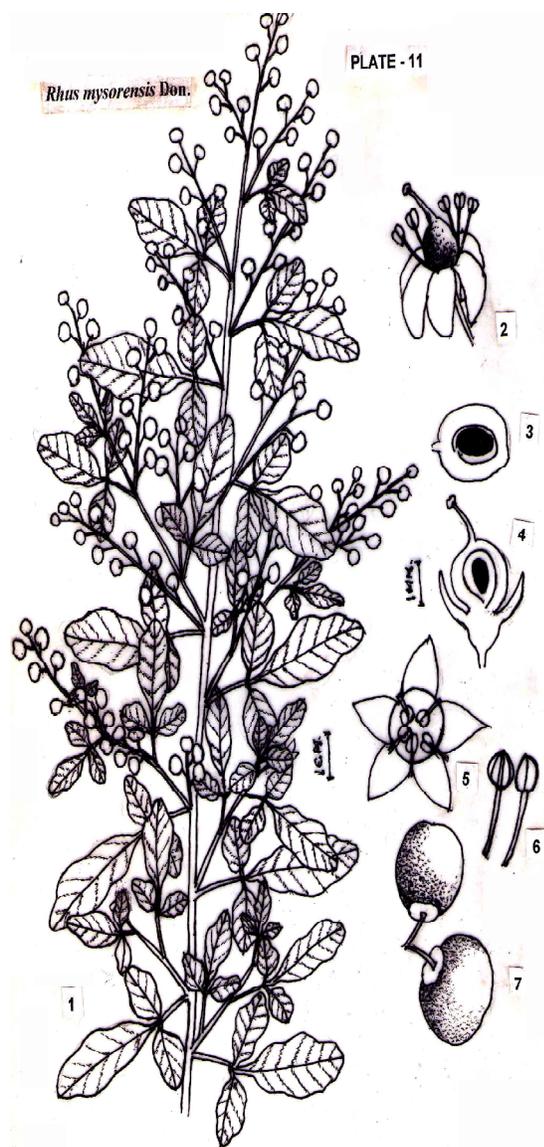
Plate 10 :

Figs. 1 to 3 = *Crotalaria biflora* with a flower and fruit; Figs 4 to 6 = *Crotalaria adariensis* with a flower and fruit.

in South India. In Adari forest a small plant of this genus has been noted. It has wiry stem with branches crawling to 2 to 4 inches on all sides on the soil. It has minute trifoliate leaves, hairy, the central lobe larger; fruits small, spherical like those *C. evolulooides* Wt. and *C. biflora* L. It is the smallest species of all under *Crotalaria*, so far the author is aware of and distinct in most of the characters from the 80 species already recorded in South India. Therefore, the author has given the name to this plant as *Crotalaria adariensis* sp. nov. (plate 10).

Holotype No. 28 dated 26.5.2015 deposited at B.S.I., CBE., T.N. and Isotype at author's home laboratory.

*Crotalaria pusilla* Heyne ex. Roth *C. umbellata* Wight ex. Wight & Arn, and *C. willdenowiana* DC are the smallest species of *Crotalaria* *C. pusilla* and *C.*



**Plate 11** : *Rhus mysorens*.

Fig. 1 = A twig; 2 = Flower; 3 = L.S. ovary; 4 = A flower less petals = L.S; 5 = Flower, face view; 6 = Stamens; 7 = Fruits.

*unbellata* have simple leaves and *C. willdenowiana* has trifoliate leaves like *C. adariensis* sp. nov.

The following key serves to distinguish *C. adariensis* sp. nov. from related species.

1. Leaves simple  
Spreading herb, small, entire plant hairy, fruit globose with apical beak \_\_\_\_\_ *C. biflora*.
2. Leaves trifoliate \_\_\_\_\_ 3
- 3a. Plants erect, small leaflet obovate with apical notch, all equal, fruit globose with apical beak \_\_\_\_\_ *C. willdenowiana*.
- 3b. Plants spreading on the ground, small, leaflets ovate unequal fruit globule with apical beak \_\_\_\_\_ *C. adariensis*.

### Acknowledgements

The author is thankful to the District Forest Officers at Virudhachalam for their kind permission to take small samples of plants from Karmangudi and Adari forests. The author is also thankful to Mr. Selvam of my village, Ko. Athanur and Mr. Santhosh Kumar of Chidambaram for having helped me in the collections of plants.

### References

- Gamble, J. S. (1957). *Flora of the Presidency of Madras*. Vol. III, B.S.I. Publication, Calcutta.
- Mathew, K.M. (1988). *Flora of the Tamil Nadu – Carnatic*. Vol. II. Rabinat Herbarium, Tiruchy, Tamilnadu.
- Subramanian, D. (2010). Diversity of Flowering Plants at Kapper Hills of Tamil Nadu. *National Level Seminar on Appl. of Medicinal Plants and their Diversity at Botany Dept. Govt. Arts College, Dharmapuri* Abs No. 1.
- Subramanian, D. (2010). Biodiversity of Flowering Plants of Adari Forest of Tamil Nadu. *National Seminar on Recent Trends in Plant Science Research*. Department of Botany, Annamalai University, Article 2.52, pp. 43-44.