

Title	Taxonomic Study on Some Species of <i>Clerodendrum</i> & <i>Vitex</i> in Thabeikkyin Township
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Abstract	Taxonomic studies on some species of <i>Clerodendrum</i> and <i>Vitex</i> from Thabeikkyin Township, Mandalay Region. The flowering plants were collected, preserved, identified and classified. In this research, 8 species belong to 2 genera of the Lamiaceae. Among them, 6 species belong to genus <i>Clerodendrum</i> and 2 species belong to genus <i>Vitex</i> . The widely distributed species in this area are <i>Clerodendrum bracteatum</i> Wall. ex Walp., <i>Clerodendrum japonicum</i> (Thunb.) Sweet, <i>Clerodendrum serratum</i> (L.) Moon., <i>Clerodendrum siphonanthus</i> R. Br., <i>Clerodendrum villosum</i> Blume and <i>Clerodendrum wallichii</i> Merr. The species of <i>Vitex glabrata</i> R. Br. and <i>Vitex limonifolia</i> Wall. ex. C.B. Clarke are rarely distributed in the study area. The description of the collected species were presented with relevant photographs. The scientific names, Myanmar names and flowering period had been mentioned. An artificial key to the species were also constructed.
Keywords	<i>Clerodendrum</i> & <i>Vitex</i> , Thabeikkyin Township, taxonomy
Citation	
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# Taxonomic Study on Some Species of *Clerodendrum* & *Vitex* in Thabeikkyin Township

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## Abstract

Taxonomic studies on some species of *Clerodendrum* and *Vitex* from Thabeikkyin Township, Mandalay Region. The flowering plants were collected, preserved, identified and classified. In this research, 8 species belong to 2 genera of the Lamiaceae. Among them, 6 species belong to genus *Clerodendrum* and 2 species belong to genus *Vitex*. The widely distributed species in this area are *Clerodendrum bracteatum* Wall. ex Walp., *Clerodendrum japonicum*(Thunb.) Sweet, *Clerodendrum serratum*(L.)Moon., *Clerodendrum siphonanthus* R. Br., *Clerodendrum villosum* Blume and *Clerodendrum wallichii* Merr. The species of *Vitex glabrata* R. Br. and *Vitex limonifolia* Wall. ex. C.B. Clarke are rarely distributed in the study area. The description of the collected species were presented with relevant photographs. The scientific names, Myanmar names and flowering period had been mentioned. An artificial key to the species were also constructed.

Key words: *Clerodendrum* & *Vitex*, Thabeikkyin Township, taxonomy

## Introduction

The present study deals with the taxonomic study on the some species of *Clerodendrum* and *Vitex* growing in Thabeikkyin Township, Mandalay Region. This township lies between N-latitude 22°42'-23°41' and E-longitude 95°53'-96°24'. The elevation of Thabeikkyin is between 152-1828 m above sea level and an area of 2566.86 sq. km.

The main objective of the present study are to record their morphological characters of studies species that can fulfill the need of information and to contribute the better knowledge of genus *Clerodendrum* and *Vitex*.

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Although many taxonomic researchers who have been searching to identify and classify the plants in Mandalay Region. The plant collection and identification of Thabeikkyin Township is still left to be studied. Therefore the present work focus on this area and the flowering plants (Angiospermae) were selected and studied.

Moreover, the present study is intended to inventory the flowering plants which grown in Thabeikkyin Township and to get a valuable taxonomic information of Angiosperms distribution in Thabeikkyin Township to be partially accomplished the Flora of Mandalay Region.

### **Materials and Methods**

In this study, specimens were collected from Thabeikkyin Township, Mandalay Region. Data collections were made from 2007 to 2010. All the collected species were recorded by photographs while flowering. Fields notes were made of habitat types and precise location by using G P S. Plant collection and preservation techniques were used to make herbarium specimens. Identification and describing of the species were studied by fresh specimens.

Identification of families, genera, and species were carried out by referring to Hooker(1885), Backer & Brink(1965), Hutchinson (1967), (Dassanayake 1983) and Qi-ming & De-lin(2009).The index for nomenclature data was referred to the website of international plant name index and on line database of tropicos containing taxonomic information on plants. Myanmar names were referred to Hundley & Chit Ko Ko (1987).

All the resulting species were arranged alphabetically. An artificial key have been also constructed based on the description of individual species occurred in the study area.

## Results

### List of Collected Species

Eight species belong to two genera were found. The resulted species were arranged alphabetically as shown in Table 1.

**Table 1. List of Collected Species from Thabeikkyin Township**

Group	Order	Family	No	Scientific name
Eudicots	Lamiales	Lamiaceae	1	<i>Clerodendrum bracteatum</i> Wall. ex Walp.
			2	<i>Clerodendrum japonicum</i> (Thunb.) Sweet
			3	<i>Clerodendrum serratum</i> (L.) Moon.
			4	<i>Clerodendrum siphonanthus</i> R.Br.
			5	<i>Clerodendrum villosum</i> Blume
			6	<i>Clerodendrum wallichii</i> Merr.
			7	<i>Vitex glabrata</i> R.Br.
			8	<i>Vitex limonifolia</i> Wall.exC.B.Clarke

### An Artificial Key to the Species

1. Leaves compound ----- 2
1. Leaves simple----- 3
  2. Petiole broadly winged; inflorescenes terminal; flowers violet -----  
----- **8. *Vitex limonifolia***
  2. Petiole wingless; inflorescenes axillary; flowers pale yellow-----  
----- **7. *Vitex glabrata***
3. Leaf-blades linear lanceolate or oblong-lanceolate; corolla hypocrateriform-----4
3. Leaf-blades deltoid to ovate or broadly obcordate or elliptic obovate or broadly ovate; corolla tubular or funnel shaped-----5
  4. Stems and branches hollow; corolla tube more than 7 cm long; filaments purple-----**4. *Clerodendrum siphonanthus***
  4. Stems and branches solid; corolla tube less than 2 cm long; filaments lightly tinged pink or blue-----**6. *Clerodendrum wallichii***
5. Calyx accrescent ----- 6
5. Calyx not accrescent-----7
  6. Corolla white with reddish-violet in the throat; style less than 3 cm long; fruit ovoid ----- **5. *Clerodendrum villosum***
  6. Corolla white without reddish-violet in the throat; style more than 4 cm long; fruit globoid -----**1. *Clerodendrum bracteatum***

7. Leaves pubescent; calyx red; corolla red-----  
-----**2. *Clerodendrum japonicum***  
7. Leaves glabrous; calyx pale green; corolla violet or purplish-violet  
-----**3. *Clerodendrum serratum***

**1. *Clerodendrum bracteatum*** Wall., ex Walp., Repert. Bot. Syst.  
4:106.1845.(Figure 1A)

Myanmar name : Pet kha

English name : Unknown

Flowering period : November to February

Perennial, shrub; stems and branches quadrangular when young, tinged with dark purple near the apex, fulvous-villous. Leaves simple, opposite and decussate, exstipulate; petioles 8.5-18.0 cm long, shallowly canaliculate above, brownish-purple, densely woolly; blades deltoid to ovate, 12.0-28.0 cm by 7.5-20.0 cm, cordate to cuneate at the base, irregularly dentate along the margins, acute at the apex, tomentose above, densely woolly beneath. Inflorescences terminal, corymbose cymes; peduncles slightly flattened, quadrangular, 2.5-4.0 cm long, brownish purple, tomentose. Flowers bisexual, zygomorphic, hypogynous, pentamerous, white, 2.0-2.5 cm in diameter, fragrant; bracts numerous, ovate, 1.5-3.0 cm by 0.3-0.5 cm, cuspidate at the apex, tomentose. Calyx campanulate, deeply 5-lobed, tube about 5.0 mm long, dark purple; lobes lanceolate. Corolla funnel-form, 5-lobed; tube slender, 3.0-4.0 cm long, widened upward; lobes ovate-oblong. Stamens 4, free, didynamous, exserted; filaments filiform, 4.0-5.0 cm long, glabrous; anthers dithecous, elliptic-oblong, about 3.0 mm long, pinkish to violet. Ovary superior, ovoid, about 5.0 mm long, glabrous, tetralocular, with one ovule in each locule on the axile placentae; style filiform, 7.0-8.0 cm long, glabrous; stigma bifid. Drupes globoid, 5.0-7.0 mm in diameter, purplish-blue when ripe, enclosed by enlarged reddish, accrescent calyx. Seeds oblong, about 6.0 mm long.

**Specimen examined** :Thabeikkyin Township, War phyutaung village, N 22°52'14.7" and E 96°05'40", Khaing Khaing Lin, 8.2.2010, Coll. no. (309).

**2. *Clerodendrum japonicum***(Thunb.) Sweet , Hort. Brit. ed. 1. 822. 1827.  
*Volkameria japonica* Thunb., Fl. Jap. 255. 1784. (Figure 1B)

Myanmar name : Pet kha

English name : Unknown

Flowering Period : September to November

Perennial, erect shrubs; stems and branches quadrangular with a longitudinal groove, tumid at the node, pubescent. Leaves simple, opposite and decussate, exstipulate; petiole 5.0-8.0 cm long, cylindrical, densely hairy; blades broadly cordate, 6.5-12.0 cm, rounded or shallowly cordate at the base, dentate-serrate along the margin, acutely acuminate at the apex, pubescent. Inflorescences terminal paniculate cymes with many flowered; peduncles quadrangular, 8.5-14.0 cm long, reddish-green, faintly pubescent. Flowers bisexual, zygomorphic, hypogynous, pentamerous, bright red, about 1.5 cm in diameter; bracts ovate, 1.0-2.5 cm by 0.5-1.5 cm, reddish-green, pubescent. Calyx campanulate, 5-lobed, bright red; tube about 2.0 mm long, pubescent without, glabrous within; lobes lanceolate, about 1.0 cm by 0.5 cm. Corolla tubular, 5-lobed, red; tube slightly widened toward the throat; lobes oblong, unequal, glabrous. Stamens 4, free, didynamous, exserted; filaments filiform, about 3.5 cm long; anthers elliptic-oblong, ditheous. Ovary superior, ovoid, 2.0 mm long, tetralocular, with one ovule in each locule on the axile placentae; style filiform, dark red, 4.0-5.0 cm long; stigma bifid. Drupes globose, about 1.0 cm in diameter, bluish-black.

**Specimen examined** : Thabeikkyin Township, Kyaukphyar village, N 22° 49' 55.0" and E 96° 05' 22.3", Khaing Khaing Lin, 13.9.08, Coll. no. (177).

**3. *Clerodendrum serratum* (L.) Moon. Cat. 1: 46. 1824. (Figure 1C)**

*Volkameria serrata* L., Mant. 1: 90. 1767.

Myanmar name : Yinbya net

English name : Unknown

Flowering period : July to December

Perennial erect shrub, up to 4.0 m high; stems and branches stout, quadrangular with a longitudinal groove, glabrous or puberulent, purple. Leaves simple, opposite and decussate or whorled, exstipulate; petioles 0.5-1.2 cm long, puberulent; blades elliptic-obovate, 5.5-22.5 cm by 2.5-8.0 cm, subcuneate at the base, serrate along the margins, acute or acuminate at the apex, dark green above and pale green beneath, glabrous on both surfaces; mid-rib more distinct on the lower surface and lateral veins more conspicuous beneath. Inflorescences terminal, long and paniculate dichasial cymes, subpyramidal, densely congested, many-flowered, composed of many opposite crowded cymules; peduncles stout, 1.0-7.0 cm long, densely puberulous, bluish when young. Flowers bisexual, zygomorphic, pentamerous, hypogynous, violet or purple, about 1.5 cm in diameter: bracts

elliptic, about 2.5 cm by 1.5 cm, foliaceous; bracteoles single, lanceolate. Calyx campanulate, very shortly 5-lobed; lobes minute, triangular teeth, bluish when young, pale green in age, glabrous within, puberulent without; tube about 6.0 mm long. Corolla funnel-shaped, deeply 5-lobed, violet or purplish-blue; tube cylindric, swollen, 0.5-1.2 cm long, oblique at the apex, hairy within at the base of the stamen; limb 2-lipped, unequally 5-lobed, about 3.0 cm wide, the upper lobes usually erect, flat or hooded, elliptic, spreading, obtuse at the apex, about 10 mm long, usually dark blue with white streaks basally, lateral lobes usually pale blue or purplish-blue, lower lobe deflexed, concave, about 2.5 cm long, longer than the tube, usually dark purple or dark violet to lilac. Stamens 4, free, didynamous, exserted; filaments filiform, 2.0-3.0 cm long, curved, whitish-blue, densely hairy at the base; anthers ditheous, elliptic, about 3.0 mm long, white. Ovary superior, ovoid, about 2.5 mm long, glabrous, tetralocular, with one ovule in each locule on the axile placentae; style filiform, about 4.0 cm long, purplish-blue, glabrous; stigma bifid, minute. Drupes ovoid, about 8.0 mm long, dark purple. Seeds ellipsoid.

**Specimen examined :** Thabeikkyin Township, Late kya village, N 22° 47' 21.2" and E 96° 02' 56.4", Khaing Khaing Lin, 22.7.2007, Coll. no. (7)

**4. *Clerodendrum siphonanthus* R.Br., in Ait.f., Hort. Kew. ed. 2, 4: 65. 1812.**

(Figure 1D)

Myanmar name : Ngayan padu  
 English name : Clerodendrum  
 Flowering period : July to January

Perennial, suffrutescent shrub, about 4.0 m high; stems and branches hollow, quadrangular with longitudinal furrows, glabrescent. Leaves simple, opposite or whorled, exstipulate; petioles 4.0-6.0 mm long, glabrous; blades linear-lanceolate or oblong to lanceolate, 2.0-22.8 cm by 0.6-4.8 cm, attenuate at the base, entire or dentate along the margin, acute or acuminate at the apex, glabrous on both surfaces. Inflorescences axillary or terminal dichasial cymes, with 3- to 7-flowers; peduncles 1.6-8.0 cm long, purplish, glabrescent. Flowers bisexual, zygomorphic, pentamerous, hypogynous, white, about 1.7 cm in diameter; bracts foliaceous, caducous, about 1.2 cm long, glabrous. Calyx broadly campanulate, deeply 5-lobed; tube 3.0-7.0 mm long; lobes ovate, 5.0-7.0 mm by 3.0-5.0 mm, subcoriaceous, fleshy, with an acute purplish apex, gradually red or brownish-red to purple after

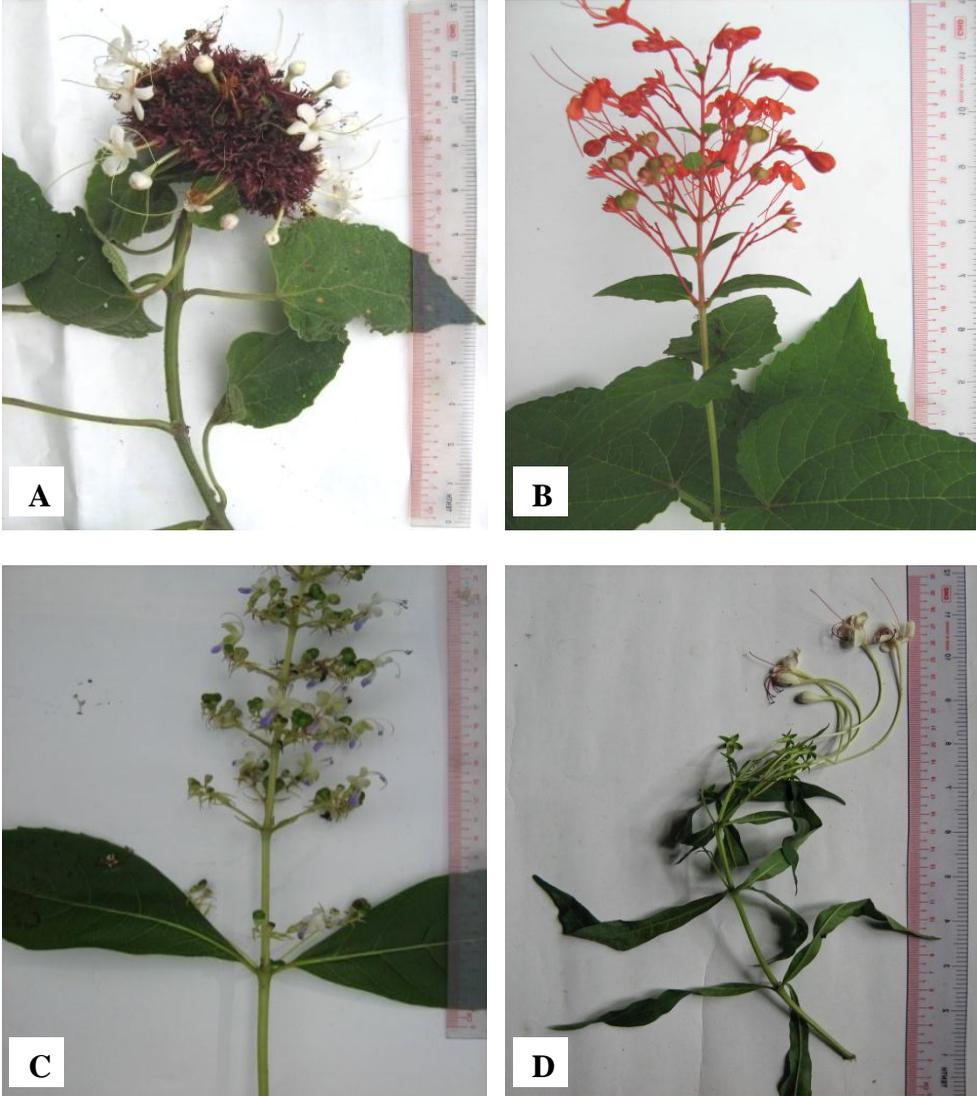


Figure 1. A.*Clerodendrum bracteatum* Wall. ex Walp.  
B.*Clerodendrum japonicum* (Thunb.) Sweet  
C.*Clerodendrum serratum*(L.) Moon.  
D.*Clerodendrum siphonanthus* R.Br.

anthesis, glabrous. Corolla hypocrateriform, unequally 5-lobed, white; tube very long, slender, 7.0-9.5 cm long; lobes ovate-oblong, 1.0-1.5 cm long obtuse at the apex; reflexed, glabrous. Stamens 4, free, didynamous, exerted; filaments filiform, about 3.0 cm long, purple, glabrous; anthers ditheous, oblong, about 2.0 mm long, purple. Ovary oblongoid, 2.0 mm long, glabrous, tetralocular, one ovule in each locule on the axile placentae; style slender, about 7.0 cm long, purple, glabrous; stigma shortly bifid, purplish. Drupes ovoid, about 1.8 cm in diameter, 4-lobed, fleshy, reddish-black, glabrous, subtended by brownish-red accrescent calyx. Seeds oblongoid.

**Specimen examined** :Thabeikkyin Township, Kyaukphyu village, N 22° 46' 20.5" and E 96° 01' 40.7", Khaing Khaing Lin, 4.11.2007, Coll. no. (107).

**5. *Clerodendrum villosum*** Blume, Bijd. 811.1826. (Figure 2A)

Myanmar name : Phetkha

English name : Unknown

Flowering period : February to May

Perennial shrubs, stem and branches quadrangular, green or tinged with reddish violet near the apex, villose. Leaves simple, opposite and decussate; exstipulate, petioles terete, 3.5-11.5 cm long, canaliculate above, densely tomentose; blades broadly ovate, 6.5-18.5 cm by 4.0-15.0 cm, coriaceous, shallowly cordate at the base, serrate along the margin, acuminate at the apex, pubescent on both surfaces. Inflorescences terminal or axillary, paniculate cymes, peduncles subterete, 2.0-7.0 cm long, reddish-violet, pubescent. Flowers white, tinged with reddish violet; 1.5-2.0 cm in diameter, bisexual, zygomorphic, hypogynous, pentamerous; bracts lanceolate, 0.5-1.0 cm long. Calyx campanulate, deeply 5-lobed, pale green, persistent; tube 2.0-3.0 mm long, tomentose; lobes ovate-oblong, 0.5-1.0 cm long, tomentose. Corolla tubular, 5-lobed, white, reddish violet in the throat; tube cylindrical, 1.0-1.5 cm long, pubescent without; lobes ovate-oblong, 1.0 cm by 0.5 mm, glabrous. Stamens 4, free, didynamous, exerted, adnate to the mouth of corolla-tube; filaments filiform, 2.5-3.0 cm long, white, glabrous; anthers elliptic-oblong, ditheous, basifixed, violet. Ovary superior, ovoid, about 1.0 mm long, tetralocular, with one ovule in each locule on the axile placentae; style filiform, about 2.5 cm long, white, glabrous, stigma bifid, greenish white. Drupes ovoid, 1.0-1.5 cm in diameter, subtended by the accrescent calyx. black when ripe. Seeds ovoid.

**Specimen examined :** Thabeikkyin Township, Pauk ta pin village, N 23° 07'26" and E 96°03'48.6", Khaing Khaing Lin, 28.4.2010, Coll. no. (401).

**6. *Clerodendrum wallichii* Merr., J. Arnold Arbor. 23: 220. 1952. (Figure 2B)**

Myanmar name : Pan swelwe

English name : Nodding tube-flowers

Flowering period : October to December

Perennial, shrubs; stems and branches solid, quadrangular, greyish brown, glabrescent. Leaves simple, opposite and decussate; exstipulate; petioles slender, 1.0-3.0 cm long, glabrescent; blades oblong-lanceolate, 3.5-18.0 cm by 2.0-6.0 cm, subcuneate at the base, undulate along the margin, acuminate at the apex, glabrous on both surfaces. Inflorescences terminal paniculate dichasial cymes, nodding. Flowers white, about 2.0 cm in diameter, bisexual, zygomorphic, pentamerous; bracts 0.8-1.2 cm by 0.3-0.4 cm, foliaceous. Calyx campanulate, teeth-5; dark red or dark purple or brownish, ventricose; tube about 5.0 mm long, glabrous; lobes triangular, about 2.0 mm long. Corolla hypocrateriform, 5-lobed, creamy-white, glabrous; tube about 1.6 cm long; lobes obovate, 1.0-1.2 cm by 0.5 mm, reflexed. Stamens 4, free, didynamous, exserted; filaments filiform, 2.0-3.5 cm long, lightly tinged with pink or blue, glabrous; anthers dithecous, oblong. Ovary superior, globoid, about 2.0 mm long, tetralocular, with one ovule in each locule on the axile placentae; style filiform, about 3.0 cm long; stigma bifid. Drupes globoid, about 1.0 cm in diameter, subtended by the accrescent calyx.

**Specimen examined :** Thabeikkyin Township, Ma gyigyone village, N 23°25' 54" and E 96°04'37", Khaing Khaing Lin, 8.11.2010, Coll. no. (418).

**7. *Vitex glabrata* R.Br., Prodr. 512. 1810. (Figure 2C)**

Myanmar name : Tauk sha

English name : Unknown

Flowering period : April to June

Perennial trees; stems and branches terete, glabrescent; bark grey with longitudinal furrows. Leaf palmately pentafoliolate compound, rarely trifoliolate compound; opposite and decussate; exstipulate; petioles terete, 4.0-5.0 cm long, with pulvinus, pubescent; petiolules terete, 1.0-2.0 cm long, densely pubescent; leaflets elliptic lanceolate, 3.5-6.5 cm by 2.0-3.0 cm, cuneate at the base, entire along the margin, acute at the apex.

Inflorescences axillary divaricate cymes. Flowers bisexual, zygomorphic, hypogynous, pentamerous, pale yellow, about 1.5 cm in diameter, odorous; bract linear, 1.0-2.0 mm long, sparsely hairy. Calyx campanulate, persistent; tube about 2.0 mm long; teeth triangular, about 2.0 mm long. Corolla bilabiate, pale yellow with violet; tube 5.0-6.0 mm long, widened at the apex, pubescent without and villous within, upper lip 2-lobed, about 2.0 mm long; lower lip 3-lobed, about 3.0 mm long. Stamens 4, exserted, didynamous; attached at the tip of corolla tube; filaments filiform, 7.0-8.0 mm long, white with violet at the tip, pubescent at the base; anthers ditheous, oblong, basifixed, about 1.0 mm long. Ovary superior, ovoid, 1.0-2.0 mm long, tetralocular, one ovule in each locule on the axileplacentae; style filiform, 1.0-1.2 cm long, yellow; stigma bifid. Drupes obovoid, 1.0-1.3 cm long, dark brown. Seed ovoid.

**Specimen examined** : Thabeikkyin Township, War yone gyone village, N 23°10'00" and E 96°03'52", Khaing Khaing Lin, 28.4.2010, Coll. no. (408).

**8. *Vitex limonifolia* Wall. ex C.B. Clarke, Fl.Brit. India. 4:584. 1885.**  
(Figure 2D)

Myanmar name : Kyun khauk nwe

English name : Unknown

Flowering period : August to October

Perennial, deciduous trees; young branches quadrangular, often slightly compressed near the inflorescences, densely tomentose. Leaves trifoliolate-compound, opposite and decussate, exstipulate; petioles broadly winged, 3.0-10.0 cm by 1.0-2.5 cm, yellowish-grey hairy; leaflets broadly elliptics or elliptic-oblong, 8.0-15.0 cm by 3.0-14.5 cm, cuneate at the base, entire along the margin, acuminate at the apex, coriaceous, pubescent above, densely minute fulvous-pubescent, yellowish gland-dotted beneath. Inflorescences terminal panicles of fascicled cymes with many flowers; peduncles 10.0-18.0 cm long, yellowish-brown hairy. Flowers bisexual, zygomorphic, pentamerous, hypogynous, violet, about 6.0 mm in diameter; bracts about 8.0 mm by 5.0 mm, usually imbricating the flowers, accrescent, persistent, densely tomentose; bracteoles 2, unequal, persistent. Calyx tubular-campanulate, shortly 5-lobed; tubes about 2.0 mm long; teeth about 1.0 mm long. Corolla bilabiate, violet, 5-lobed; tube about 5.0 mm long, glabrous; upper lip shortly 2-lobed; lower lip 3-lobes, the median lobes longest, dark violet coloured, villous. Stamens 4, free, didynamous,

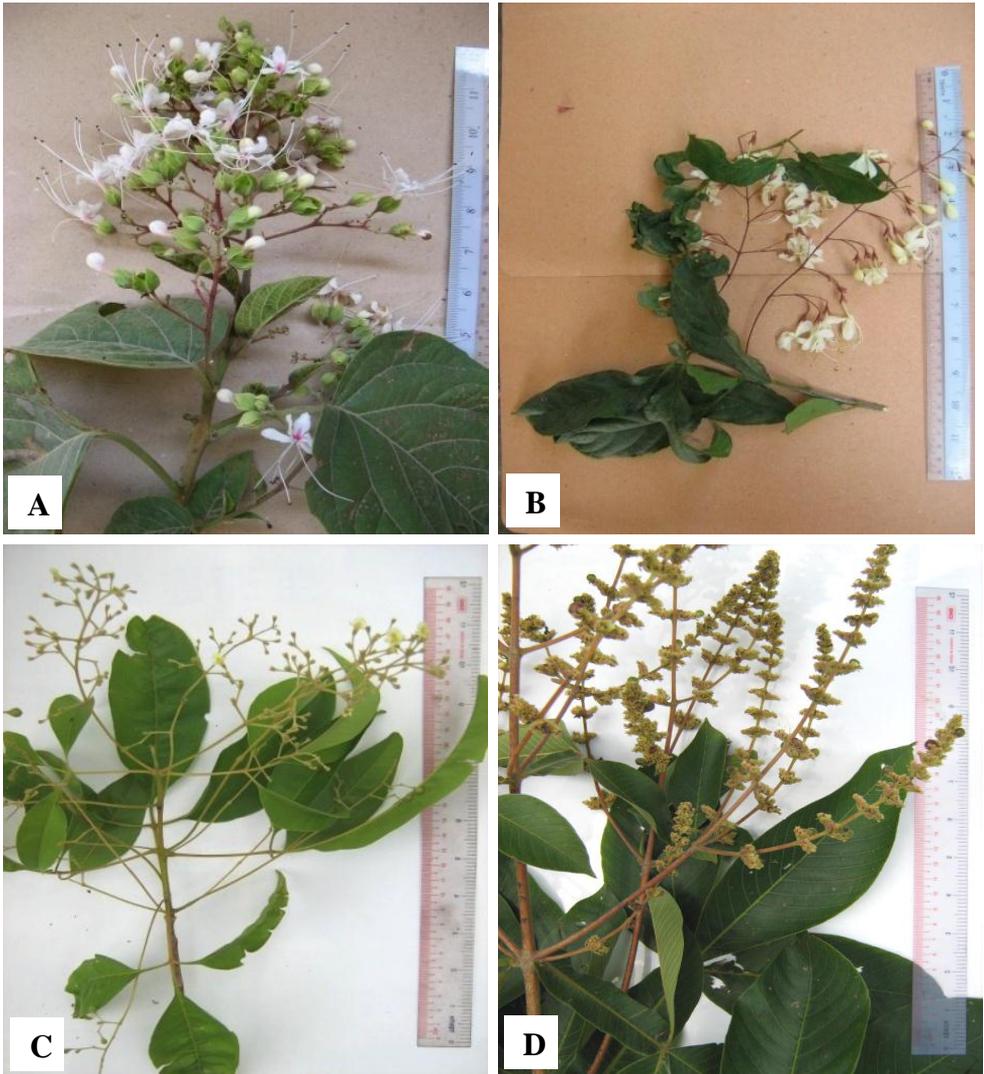


Figure 2. A. *Clerodendrum villosum* Blume  
B. *Clerodendrum wallichii* Merr.  
C. *Vitex glabrata* R.Br.  
D. *Vitex limonifolia* Wall.ex C.B. Clarke

subexserted, adnate to the middle of corolla-tube; filaments filiform, slightly villous at the base, white; anthers dithecos, oblong. Ovary superior, ovoid, bilocular with 2 ovules in each locule on the axile placentae, villous at the apex; style filiform, slightly curved, purple, glabrous; stigma bi-fid. Drupes globoid, 5.0-7.0 mm in diameter, purple or black, subtended by persistent bracts and calyx, smooth. Seed obovate.

**Specimen examined :**Thabeikkyin Township, Kyaukphyu village, N 22°46'20.5" and E 96° 01'40.7", Khaing Khaing Lin, 13.9.08, Coll. no. (160).

### Discussion and Conclusion

The present study deals with taxonomic study on the genus *Clerodendrum* and *Vitex* growing in Thabeikkyin Township of Mandalay Region. In this research, 8 species of family Lamiaceae had been identified and described.

Kress *et al.*, (2003) recorded that genus *Clerodendrum* consists of 27 species in the checklist of Myanmar. In this study, 6 species belong to genus *Clerodendrum*. It can be easily distinguished from other genus by its simple leaves, long exserted stamens, bilocular ovaries and bifid styles with stigmatiferous branches.

The genus *Vitex* consists of 19 species in the checklist of Myanmar (Kress *et al.*, 2003). In this research, 2 species belong to genus *Vitex*. It can be easily distinguished from other genus by its palmately 3 to 7 foliolate compound leaves, exerted stamens, bilocular ovaries and bifid styles with acute branches.

The habit of *Clerodendrum bracteatum* Wall. ex Walp. was perennial shrubs, quadrangular stem with fulvous-villous. These characters are in agreement with those described by Hooker (1885). *Clerodendrum japonicum* (Thunb.) Sweet was perennial shrubs, quadrangular stem with pubescent. These characters are in agreement with those described by Backer & Brink (1965). *Clerodendrum serratum*(L.)Moon. was perennial shrubs, quadrangular stem with glabrous or puberulent. These characters are in agreement with those described by Hooker (1885), Backer & Brink (1965) and Dassanayake (1983).*Clerodendrum siphonanthus* R.Br. was perennial, suffrutescent shrubs quadrangular stem with glabrescent. These characters are in agreement with those described by Hooker (1885). *Clerodendrum villosum* Blume was perennial shrubs, quadrangular stem with villose. These characters are in agreement with those described by

Hooker (1885) and Backer & Brink (1965). *Clerodendrum wallichii* Merr. was perennial shrubs, quadrangular stem with glabrescent. These characters are in agreement with those described by Backer & Brink (1965) and Dassanayake (1983). *Vitex glabrata* R.Br. was perennial trees, terete stem glabrescent. These characters are in agreement with those described by Hooker (1885) and Backer & Brink (1965). *Vitex limonifolia* Wall. ex C.B. Clarke was perennial trees, quadrangular young stem with densely tomentose. These characters are in agreement with those mentioned by Hooker (1885).

The type of leaves was simple and the shape of leafblades was deltoid to ovate with irregular dentate along the margin in *Clerodendrum bracteatum* Wall. ex Walp. These characters are in agreement with those described by Hooker (1885). The leaves of *Clerodendrum japonicum* (Thunb.) Sweet. was simple, broadly obcordate with dentate-serrate along the margin. These characters are in agreement with those described by Backer & Brink (1965). The leaves of *Clerodendrum serratum* (L.) Moon. was simple, elliptic-obovate with serrate along the margin. These characters are in agreement with those described by Hooker (1885), Backer & Brink (1965) and Dassanayake (1983). The leaves of *Clerodendrum siphonanthus* R.Br. was simple, linear-lanceolate or oblong to lanceolate with entire or dentate along the margin. These characters are in agreement with those described by Hooker (1885). The leaves of *Clerodendrum villosum* Blume was simple, broadly ovate with serrate along the margin. These characters are in agreement with those described by Hooker (1885) and Backer & Brink (1965). The leaves of *Clerodendrum wallichii* Merr. was simple, oblong-lanceolate, with undulate along the margin. These characters are in agreement with those described by Backer & Brink (1965) and Dassanayake (1983). The leaves of *Vitex glabrata* R.Br. was compounds; leaflets elliptic-lanceolate with entire along the margin. These characters are in agreement with those mentioned by Hooker (1885) and Backer & Brink (1965). The leaves of *Vitex limonifolia* Wall. ex C.B. Clarke was compound; broadly winged petiole; leaflets broadly elliptic or elliptic-oblong. These characters are in agreement with those mentioned by Hooker (1885).

The flowers of *Clerodendrum bracteatum* Wall. ex Walp. was white, funnel-shaped corolla and tetralocular ovary. These characters are in agreement with those described by Hooker (1885). The flowers of *Clerodendrum japonicum* (Thunb.) Sweet was bright red, tubular corolla and tetralocular ovary. These characters are in agreement with those described by Backer & Brink (1965). The flowers of

*Clerodendrum serratum* (L.) Moon. was violet or purple, funnel-shaped corolla and tetralocular ovary. These characters are in agreement with those described by Hooker (1885), Backer & Brink (1965) and Dassanayake (1983). The flowers of *Clerodendrum siphonanthus* R.Br. was white, hypocrateriform corolla and tetralocular ovary. These characters are in agreement with those described by Hooker (1885). The flower *Clerodendrum villosum* Blume was white, tubular corolla and tetralocular ovary. These characters are in agreement with those described by Hooker (1885) and Backer & Brink (1965). The flowers of *Clerodendrum wallichii* Merr. was white, hypocrateriform corolla and tetralocular ovary. These characters are in agreement with those described by Backer & Brink (1965) and Dassanayake (1983). The flowers of *Vitex glabrata* R.Br. was pale yellow, bilabiate corolla and bilocular ovary. These characters are in agreement with those described by Hooker (1885) and Backer & Brink (1965). The flower of *Vitex limonifolia* Wall. ex. C.B. Clarke was violet, bilabiate corolla and bilocular ovary. These characters are in agreement with those mentioned by Hooker (1885). Fruits of eight species were drupaceous and seeds without endosperm. These characters are in agreement with those described by Hooker (1885), Backer & Brink (1965) and Dassanayake (1983).

In the present paper, the species *Vitex glabrata* R.Br. and *Vitex limonifolia* Wall. ex C.B. Clarke are trees, but of the remaining species are shrubs. The leaves of *Vitex glabrata* R.Br. and *Vitex limonifolia* Wall. ex C.B. Clarke are compound but the other species are simple. The petioles of *Vitex limonifolia* Wall. ex C.B. Clarke had broadly winged but the other species of petioles are wingless.

The present study will contribute towards a deep, better understanding and knowledge on morphological characters of genus *Clerodendrum* and *Vitex*. This study area is very interesting for its richness of natural plant resources and various diversity of plants. Therefore, it is hoped that the present study of natural plant resources from Thabeikkyin Township can stand up valuable taxonomic information for the further investigation of researchers who are looking for the diversity of species and this research work will partially fulfill to complete the Mandalay Region.

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