

# TAXONOMIC STUDY ON FIFTEEN SPECIES OF TREES FOUND IN TAMU DISTRICT OF SAGAING REGION

Tin Myo Khaing<sup>1</sup>, Nwè Nwè Yi<sup>2</sup>

## Abstract

The present research deals with diagnostic characters on fifteen species of trees found in Tamu District of Sagaing Region. This area lies between 23° 20' and 24° 40' North latitude, 94° 00' and 94° 40' East longitude. All the specimens were collected from Tamu District in Sagaing Region from 2017 to 2019. The fifteen species were collected, classified, identified and preserved. In this paper, 15 species belonging to 11 genera of 10 families were presented. The economically valuable timber species are *Pterocarpus macrocarpus* Kurz, *Lagerstroma speciosa* (L.) Pers., *Shorea obtusa* Wall, *S. siamensis* Miq., *Tectona grandis* L.f and *T. hamiltoniana* Wall.. The individual species of taxonomic information were presented with relevant photographs. An artificial key to the species was constructed.

**Keywords:** Taxonomy, Trees, Tamu District

## Introduction

The forest of Myanmar is one of its greatest natural resources because they cover large areas and many of the trees and other plants in them have been used for timber, fire wood, and many other products. The forests are also useful because many of them are important in the conservation of water, soil and animals life resources (Davis 1960).

In fifteen species of valuable timber trees, *Pterocarpus macrocarpus* Kurz, *Lagerstroemia speciosa* (L.) Pers., *Shorea obtusa* Wall., *Tectona grandis* L.f are very popular species in the world. Therefore, a research on the timber trees was selected and studied.

The Sagaing Region is the largest one in Myanmar. Tamu District is located in North West part of Sagaing Region in Myanmar. It lies between 23° 20' and 24° 40' North latitude and 94° 00' and 94° 40' East longitude. The total area of Tamu District is 677.2 sq km and the elevation is about 180m.

The aim and objectives of this research are to identify and classify the natural timber tree species of Tamu District, to record the list of collected plants from Tamu district; to describe the taxonomical characteristics of Angiosperms from study area.

## Materials and Methods

Plant collection were made June 2018 to December 2019. A Taxonomic identification of the collected specimens were determined by referring to available literature such as Hooker (1875-1897), Backer & Brick (1963-1968), Dassanayake (1980-2001), and Qi-ming & De-lin (2007-2009). All of nomenclatural studies were recognized by referring to the website of International plant Names Index (IPNI) and Online Botanical Database of Tropical plants (TROPICOS). Myanmar names and their distribution of the studied species were referred to Hundley and Chit Ko Ko (1987) and Kress *et al.* 2003. The studied species were systematically arranged into families according to (APG IV) system of Byng *et al.* (2016). The arrangement of genera and species under the families were placed alphabetically.

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## Results

### List of collected species from Tamu District

Diagnostic characters on fifteen species of trees from Tamu District in Sagaing Region.

**Table 1 List of the collected species from Tamu District in Sagaing Region**

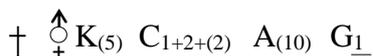
Group	Order	Family	Scientific name	Myanmar name
Rosides	Fabales	Fabaceae	<i>Millettia leucantha</i> Kurz	Thinwin aphyu
			<i>Millettia peguensis</i> Ali.	Thin win
	Fagales	Fagaceae	<i>Pterocarpus macrocarpus</i> Kurz	Thit padauk
			<i>Castanopsis indica</i> A.DC.	Thit e
	Myrtales	Combretaceae	<i>Terminalia chebula</i> Retz.	Phan kha
		Lythraceae	<i>Lagerstroemia speciosa</i> (L.) Pers.	Pyinma
			<i>Lagerstroemia villosa</i> Wall. ex Kurz.	Zaung bale
			Myrtaceae	<i>Syzygium grande</i> (Wight) Walp.
	Sapindales	Anacardiaceae	<i>Buchanania latifolia</i> Roxb.	Lunbo : Thisi bo
		Meliaceae	<i>Chukrasia tabularis</i> A. Juss.	Taw Yin ma
	Malvales	Dipterocarpaceae	<i>Shorea obtusa</i> Wall.	Thit ya
			<i>Shorea siamensis</i> Miq.	Ingyin
Asterids	Lamiales	Bignoniaceae	<i>Fernandoa adenophylla</i> (Wall.ex G. Don) Steenis	Phet than
		Lamiaceae	<i>Tectona grandis</i> L.f	Kyun
			<i>Tectona hamiltoniana</i> Wall.	Dahat

#### 1. *Millettia leucantha* Kurz, J. Asiat. Soc. Bengal, Pt. 2, Nat.Hist.42 (2): 68.1873.

(Figure 1 A-F)

Flowering period : March to April

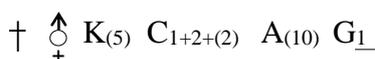
Perennial trees, scandent, up to 9.0 m high. Leaves unipinnately compound, imparipinnate, alternate; stipules linear. Inflorescences axillary or terminal pseudo-raceme, many-flowered. Flowers bisexual, zygomorphic, hypogynous, white. Calyx campanulate, 5-tooth. Corolla papilionaceous; standard broadly orbicular; wings ovate; keel oblong. Stamens 10, monadelphous; anthers ditheous, basifixed. Carpel 1; ovary superior, oblong, unilocular with 3-4 ovules in the locule on the marginal placentae; stigmas simple. Fruit simple, Pods, flat, woody, obtuse at the apex, beaked, brown tomentose.



#### 2. *Millettia peguensis* Ali., Kew Bull. 21: 489. 1968. (Figure 1 G-L)

Flowering period : March to May

Perennial small trees, up to 10.0 m high. Leaves unipinnately compound, imparipinnate, alternate; stipules caducous. Inflorescences axillary and terminal racemes, many flowered. Flowers bisexual, zygomorphic, hypogynous, purple. Calyx campanulate, 5-lobed. Corolla papilionaceous; standard obovate; wings oblong; keel obtuse. Stamens 10, monadelphous; anthers ditheous, basifixed. Carpel 1; ovary superior, unilocular with many ovules in the locule on the marginal placentae; stigma capitate. Fruits simple, pods, many-seeded, flat, woody, green, glabrous.



**3. *Pterocarpus macrocarpus* Kurz, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 43 (2): 187. 1874. (Figure 1 M-R)**

Flowering period : April to May

Perennial, large trees, up to 30.0 m high. Leaves unipinnately compound, imparipinnate, alternate; stipules lanceolate, caducous. Inflorescences terminal and axillary paniculate racemes, many-flowered. Flowers bisexual, zygomorphic, hypogynous, bright yellow. Calyx campanulate, 5-lobed. Corolla papilionaceous; standard obovate; wings fulcate; keel oblong. Stamens 10, diadelphous; anthers ditheous, dorsifixed. Carpel 1; ovary superior, oblong, unilocular with few ovules in the locule on the marginal placenta; stigmas simple. Fruits samaroid, orbicular.

$$\dagger \begin{array}{c} \uparrow \\ \ominus \\ \dagger \end{array} K_{(5)} C_{1+2+(2)} \underline{A}_{1+(9)} G_1$$

**4. *Castanopsis indica* A. DC., J. Bot. 1: 182. 1863. (Figure 2 A-F)**

Flowering period : April to August

Perennial, evergreen trees, monoecious, up to about 20.0 m high. Leaves simple, alternate, glabrous on both surfaces. Inflorescences terminal paniculate spike. Flowers unisexual, actinomorphic, epigynous. Male flowers in spike, densely clustered; stamens 5, free; anthers ditheous, basifixed. Female flowers solitary spike. Carpels 3, fused; ovary inferior, trilocular with two pendulous ovules on the apical placenta; stigmas punctate. Fruits capsule, dehiscent, ovoid, yellowish green, covered with dense stout spines.

$$\oplus \begin{array}{c} \uparrow \\ \ominus \\ \dagger \end{array} P_{5-6} A_5 G_0^- \quad \oplus \begin{array}{c} \uparrow \\ \ominus \\ \dagger \end{array} P_{5-6} A_0 G_{(3)}^-$$

**5. *Terminalia chebula* Retz., Obs. 5 : 31. 1788. (Figure 2 G-L)**

Flowering period : March to August

Perennial trees, up to 12.0 m high. Leaves simple, opposite, exstipulate. Inflorescences terminal and axillary paniculate spike, many-flowered. Flowers bisexual, actinomorphic, epigynous. Calyx campanulate, 5-lobed. Corolla 5-lobed. Stamens 10, free; anthers ditheous, basifixed. Carpel 1; ovary inferior, unilocular with one ovule in the locule on the pendulous placenta; stigma simple. Fruits simple, drupaceous, indehiscent, ellipsoid to subglobose, green, glabrous.

$$\oplus \begin{array}{c} \uparrow \\ \ominus \\ \dagger \end{array} K_{(5)} C_5 A_{10} G_1^-$$

**6. *Lagerstroemia speciosa* (L.) Pers., Syn. Pl. 2.72. 1806. (Figure 2 M-R)**

Flowering period : March to June

Perennial trees, up to 10.0 m high. Leaves simple, opposite and decussate, exstipulate. Inflorescences terminal, paniculate cymes, many-flowered. Flowers bisexual, actinomorphic, hypogynous, purple. Calyx campanulate, 6-lobed. Petals 6, free, orbicular. Stamens numerous, free; anthers ditheous, dorsifixed. Carpels 6, fused; ovary superior, hexalocular, with numerous ovules in each locule on the axile placenta; stigma capitate. Fruits loculicidal capsule, subglobose, woody, greenish brown, glabrous, splitting by 6-valves.

$$\oplus \begin{array}{c} \uparrow \\ \ominus \\ \dagger \end{array} K_{(6)} C_6 A_\infty G_{(6)}$$

**7. *Lagerstroemia villosa* Wall. ex Kurz, J. Asiat. Soc. Bengal. Pt. 2, Nat. Hist. 42: 234.1873. (Figure 3 A-F)**

Flowering period : March to May

Perennial, small tree, up to 8.0 m high. Leaves simple, opposite and decussate, exstipulate. Inflorescences axillary, dichotomous cymes, many-flowered. Flowers bisexual, actinomorphic, cyclic, hypogynous, white. Calyx campanulate, 6-lobed. Petals 6, free. Stamens numerous, free; anthers

ditheous, dorsifixed. Carpels 6, fused; ovary superior, hexalocular, three ovules in each locule on the axile placenta; stigma capitate. Fruits loculicidal capsule, oblongoid, brown, glabrous.

$$\oplus \overset{\uparrow}{\underset{\downarrow}{\circ}} K_{(6)} C_6 A_{\infty} \underline{G_{(6)}}$$

**8. *Syzygium grande* (Wight) Walp., Repert. Bot. Syst. 2:180.1843. (Figure 3 G-L)**

Flowering period : March to May

Perennial, large tree, up to 20.0 m high. Leaves simple, opposite, exstipulate. Inflorescences terminal or axillary branched paniculate, cymose, many-flowered. Flowers bisexual, actinomorphic, epigynous, cream-yellow. Calyx funnel-shaped, 4-5 lobed. Petals 5, free. Stamens numerous, spreading; anthers ditheous, basifixed,. Carpels 2 to 3, fused; ovary inferior, ovoid, many ovules in each locule on the axile placenta; stigma simple. Fruits baccate, subgloboid, violet, with prominent crown of persistent calyx segments.

$$\oplus \overset{\uparrow}{\underset{\downarrow}{\circ}} K_{(4-5)} C_5 A_{\infty} \overline{G_{(2-3)}}$$

**9. *Buchanania latifolia* Roxb., Fl. Ind. 2: 285. 1832. (Figure 3 M-R)**

Flowering period : February to April

Perennial trees. Leaves simple, alternate, exstipulate. Inflorescences terminal or axillary paniculate racemes with crowded flowers rusty-velvety. Flowers bisexual, actinomorphic, hypogynous. Calyx campanulate, 5-lobed. Petals 5, free, linear. Stamens 10, in two series, inserted at the base of the disc; anthers ditheous, dorsifixed. Carpels 5, free; ovary superior, unilocular with one ovule on the basal placenta; stigmas truncate. Fruits drupaceous, small, compressed.

$$\oplus \overset{\uparrow}{\underset{\downarrow}{\circ}} K_{(5)} C_5 A_{5+5} \underline{G_5}$$

**10. *Chukrasia tabularis* A. Juss. in Mirb. & Cass, Apud Guillemain, Bull. Sci. Nat. Geol. 23. 241. 1830. (Figure 4 A-F)**

Flowering period : July to September

Perennial, tree, up to 15.0 m high. Leaves unipinnately compound, paripinnate, alternate, exstipulate. Inflorescences terminal and axillary, many-flowered. Flowers bisexual, actinomorphic, hypogynous. Calyx capsular, 5-lobed. Petals 5, free, narrowly. Stamens 10, adnate at the base; anthers ditheous, basifixed. Carpels 2-3, united; ovary superior, numerous ovules in each locule on the axile placenta; stigmas capitate. Fruits capsular, septicidal, ellipsoid, dark brown.

$$\oplus \overset{\uparrow}{\underset{\downarrow}{\circ}} K_{(5)} C_5 A_{(10)} \underline{G_{(2-3)}}$$

**11. *Shorea obtusa* Wall., Cat. n. 966. 1829. (Figure 4 G-L)**

Flowering period : March to June

Perennial, deciduous tree, up to 10.5 m high. Leaves simple, alternate; stipules linear. Inflorescences axillary, short raceme, many-flowered. Flowers bisexual, actinomorphic, hypogynous, creamy. Calyx cup-shaped, 5-lobed, connate at the base,. Petals 5, free, linear-lanceolate. Stamens numerous, free; anthers ditheous, basifixed. Carpels 3, fused; ovary superior, ovoid, trilocular, one ovule in each locule on pendulous placenta; stigma simple. Fruits drupaceous, samara, 5-winged; 3 larger and 2 shorter.

$$\oplus \overset{\uparrow}{\underset{\downarrow}{\circ}} K_{(5)} C_5 A_{\infty} \underline{G_{(3)}}$$

**12. *Shorea siamensis* Miq., Ann. Mus. Bot. Lugd - Bat. 1 :214.1864. (Figure 4 M-R)**

Flowering period: March to May

Perennial deciduous tree, up to 16.0 m high. Leaves simple, alternate; stipules lanceolate. Inflorescence terminal and axillary paniculate raceme, many-flowered. Flowers bisexual, actinomorphic, hypogynous, yellow. Calyx cup-shaped, 5-lobed. Petals 5, free, ovate. Stamens 15,

free; anthers ditheous, basifixed. Carpels 3, fused: ovary superior, trilocular with one ovule in each locule on the axile placenta; stigmas trifid. Fruits nutlets, ovoid, 5-winged, unequal, 3 larger and 2 smaller.

$$\oplus \begin{array}{c} \uparrow \\ \bigcirc \\ \downarrow \end{array} K_{(5)} C_5 A_{15} \underline{G_{(3)}}$$

**13. *Fernandoa adenophylla* (Wall. ex G. Don) Steenis, *Blumea* 23: 135. 1976.**

(Figure 5 A-F)

Flowering period : April to June

Perennial trees, up to 10.0 m high. Leaves unipinnately compound, imparipinnate, opposite and decussate, exstipulate. Inflorescences terminal dichasial cymes. Flowers bisexual, zygomorphic, hypogynous, yellowish-white. Calyx campanulate, 5-lobed. Corolla broadly funnel-shaped, 5-lobed. Stamens 4, free; anthers ditheous, basifixed. Carpels 2, fused; ovary superior, oblongoid, bilocular with many ovules in each locule on the axile placenta; stigmas bifid. Fruits capsular, cylindrical, pendulous, brownish hairy.

$$+ \begin{array}{c} \uparrow \\ \bigcirc \\ \downarrow \end{array} K_{(5)} C_{(5)} A_4 \underline{G_{(2)}}$$

**14. *Tectona grandis* L.f., *Suppl.* 151.1782. (Figure 5 G-L)**

Flowering period : July to September

Perennial, large woody tree, up to 20.0 m high. Leaves simple, opposite and decussate, exstipulate. Inflorescences uppermost leaf axils and terminal, large panicles, many-flowered dichasial cymes. Flowers bisexual, actinomorphic, hypogynous, white. Calyx campanulate, 5-7 lobed; Corolla funnel-shaped, 6-7 lobed. Stamens 6, free; anthers ditheous, basifixed. Carpels 2, fused; ovary superior, tetralocular with one ovule in each locule on the axile placenta; stigmas bifid. Fruits drupaceous, subglobose or tetragonally flattened, densely tomentose.

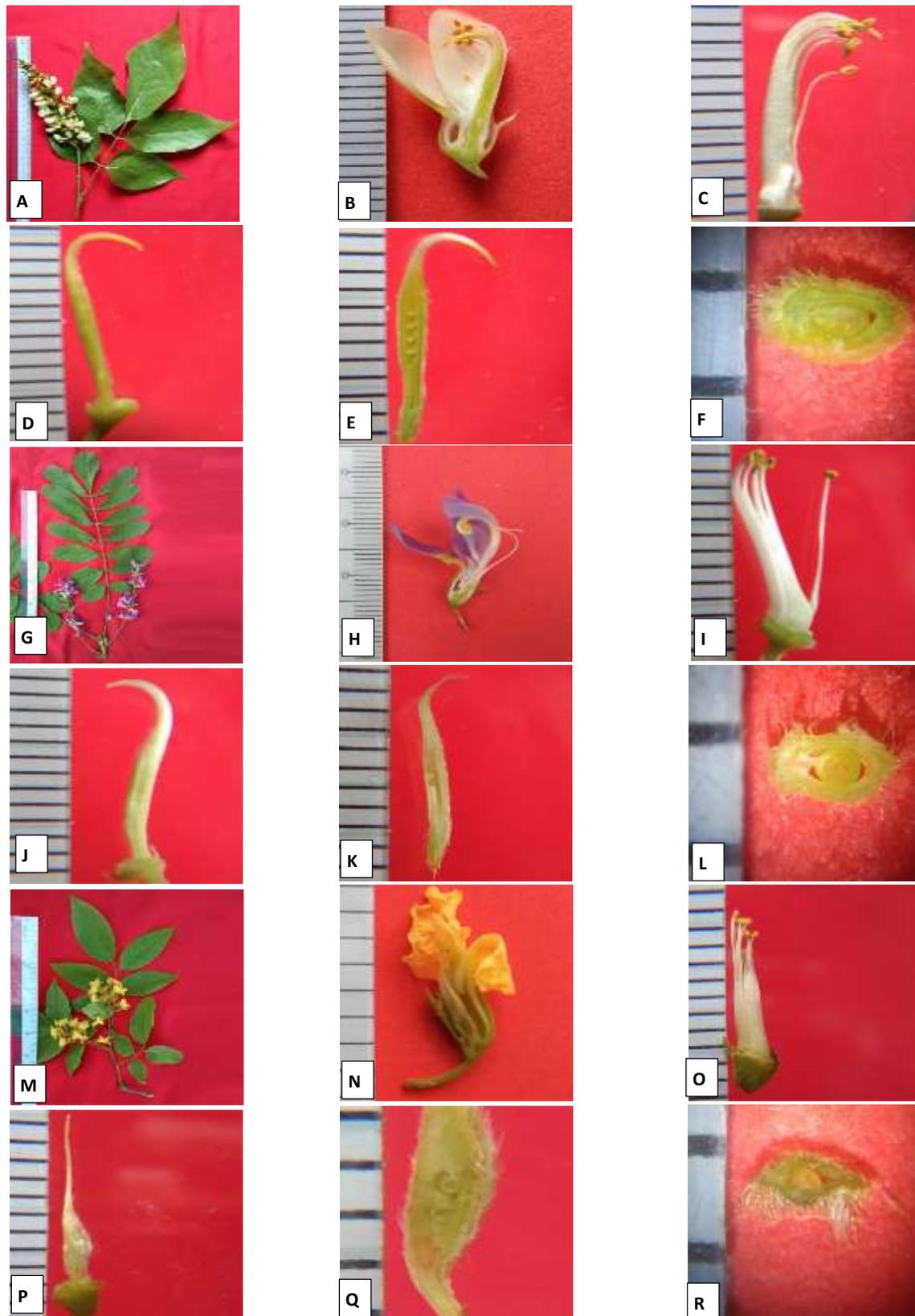
$$\oplus \begin{array}{c} \uparrow \\ \bigcirc \\ \downarrow \end{array} K_{(5-7)} C_{(6-7)} A_6 \underline{G_{(2)}}$$

**15. *Tectona hamiltoniana* Wall., *Pl. As. Rar.* 3 : 68. t -294. 1832 (Figure 5 M-R)**

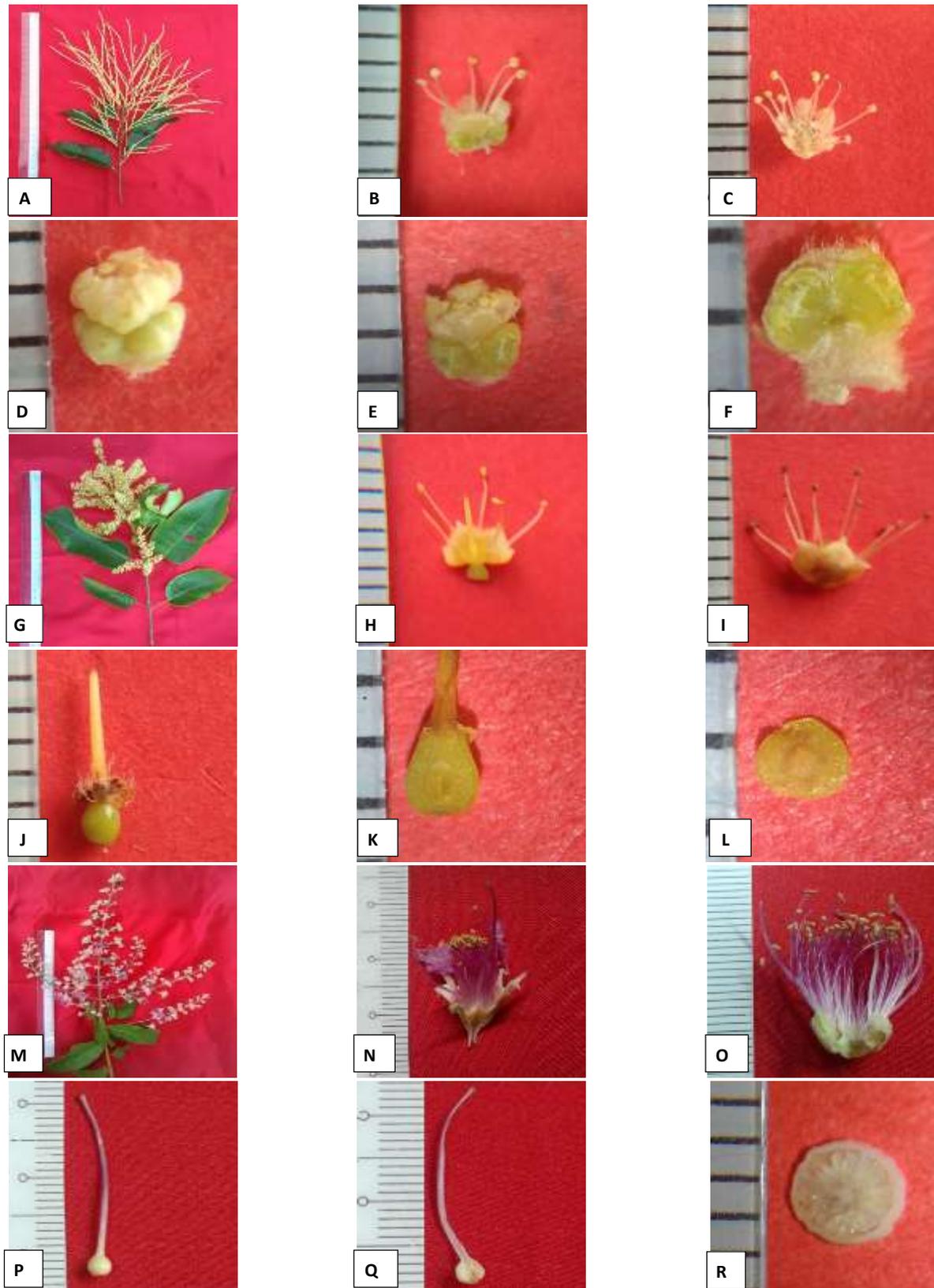
Flowering period : April to July

Perennial, small trees, up to 6.0 m high. Leaves simple, opposite and decussate, exstipulate. Inflorescences terminal paniculate, dichasial cyme, many-flowered. Flowers bisexual, actinomorphic, hypogynous, pale blue. Calyx campanulate, 5-to7-lobed. Corolla funnel-shaped, 5-6 lobed. Stamens 5-6, free; anthers ditheous, basifixed. Carpels 2, fused; ovary superior, tetralocular with one ovule in each locule on the axile placenta; stigmas bifid, unequal. Fruits drupaceous, rounded, enveloped by fruiting-calyx.

$$\oplus \begin{array}{c} \uparrow \\ \bigcirc \\ \downarrow \end{array} K_{(5-7)} C_{(5-6)} A_{5-6} \underline{G_{(2)}}$$



**Figure 1** *Millettia leucantha* Kurz, **A.** Inflorescence, **B.** L.S of flower, **C.** Stamens, **D.** Pistil, **E.** L.S of ovary, **F.** T.S of ovary; *Millettia peguensis* Ali., **G.** Inflorescence, **H.** L.S of flower, **I.** Stamens, **J.** Pistil, **K.** L.S of ovary, **L.** T.S of ovary; *Pterocarpus macrocarpus* Kurz, **M.** Inflorescence, **N.** L.S of flower, **O.** Stamens, **P.** Pistil, **Q.** L.S of ovary, **R.** T.S of ovary



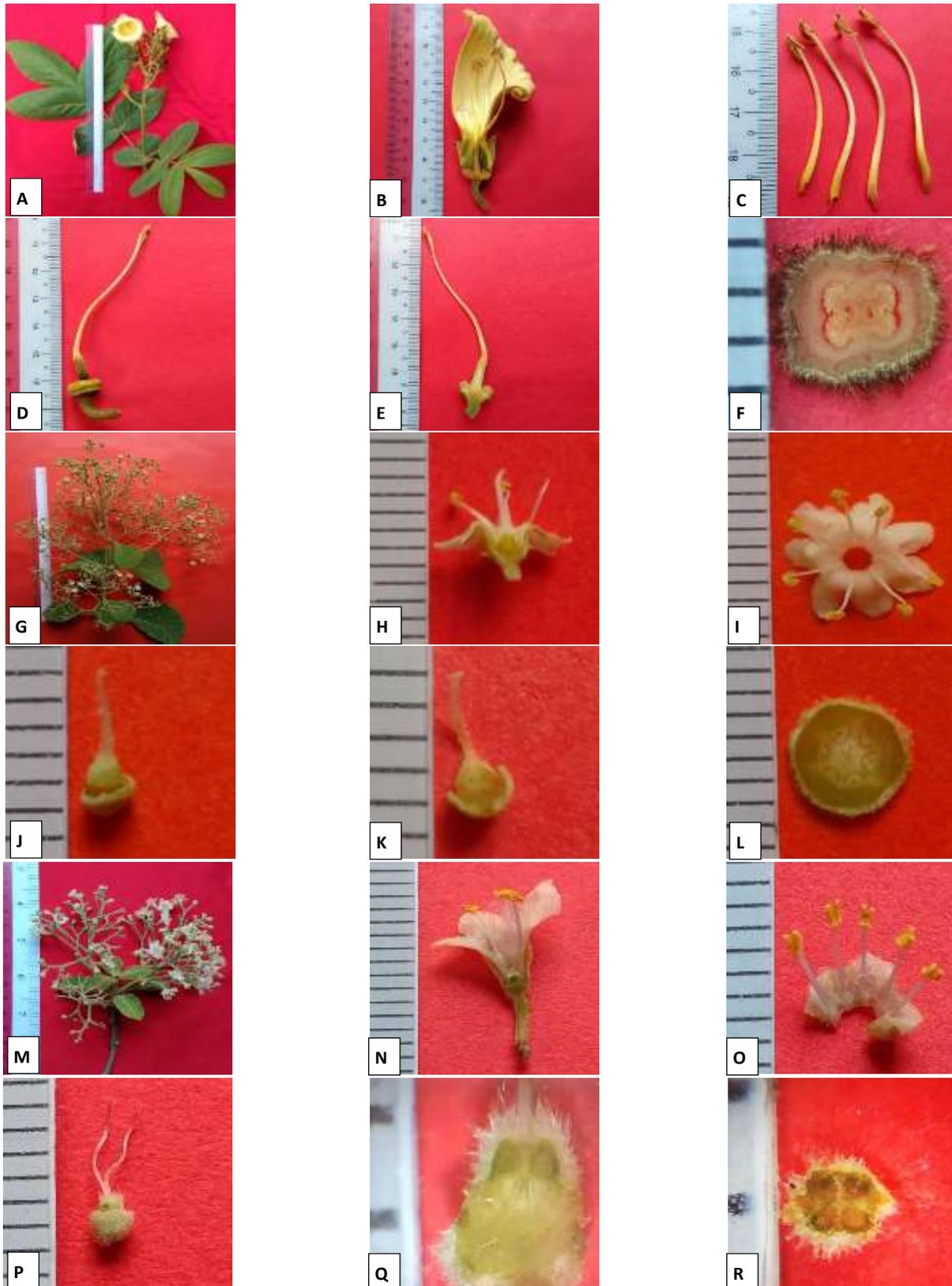
**Figure 2** *Castanopsis indica* A.DC., A. Inflorescence, B. L.S of flower, C. Stamens, D. Pistil, E. L.S of ovary, F. T.S of ovary; *Terminalia chebula* Retz., G. Inflorescence, H. L.S of flower, I. Stamens, J. Pistil, K. L.S of ovary, L. T.S of ovary; *Lagerstroemia speciosa* (L.), M. Inflorescence, N. L.S of flower, O. Stamens, P. Pistil, Q. L.S of ovary, R. T.S of ovary



**Figure 3** *Chukrasia tabularis* A. Juss., **A.** Inflorescence, **B.** L.S of flower, **C.** Stamens, **D.** Pistil, **E.** L.S of ovary, **F.** T.S of ovary; *Shorea obtusa* Wall., **G.** Inflorescence, **H.** L.S of flower, **I.** Stamens, **J.** Pistil, **K.** L.S of ovary, **L.** T.S of ovary; *Shorea siamensis* Miq., **M.** Inflorescence, **N.** L.S of flower, **O.** Stamens, **P.** Pistil, **Q.** L.S of ovary, **R.** T.S of ovary



**Figure 4** *Fernandoa adenophylla* (Wall.ex G. Don) Steenis, **A.** Inflorescence, **B.** L.S of flower, **C.** Stamens, **D.**Pistil, **E.** L.S of ovary, **F.** T.S of ovary; *Tectona grandis* L.f, **G.** Inflorescence, **H.** L.S of flower, **I.** Stamens, **J.** Pistil, **K.** L.S of ovary, **L.** T.S of ovary; *Tectona hamiltoniana* Wall., **M.** Inflorescence, **N.** L.S of flower, **O.** Stamens, **P.** Pistil, **Q.** L.S of ovary, **R.** T.S of ovary



**Figure 5** *Fernandoa adenophylla* (Wall.ex G. Don) Steenis, **A.** Inflorescence, **B.** L.S of flower, **C.** Stamens, **D.** Pistil, **E.** L.S of ovary, **F.** T.S of ovary; *Tectona grandis* L.f., **G.** Inflorescence, **H.** L.S of flower, **I.** Stamens, **J.** Pistil, **K.** L.S of ovary, **L.** T.S of ovary; *Tectona hamiltoniana* Wall., **M.** Inflorescence, **N.** L.S of flower, **O.** Stamens, **P.** Pistil, **Q.** L.S of ovary, **R.** T.S of ovary

**An Artificial key to the studied species**

1. Leaves compound ----- 2
1. Leaves simple ----- 6
  2. Flower actinomorphic; calyx capsular -----  
10. *Chukrasia tabularis*
  2. Flower zygomorphic; calyx campanulate ----- 3
3. Stamens 4, free ----- 13. *Fernandoa adenophylla*
3. Stamens 10, united ----- 4
  4. Flower purple; stigma capitate ----- 2. *Millettia peguensis*
  4. Flower bright yellow or white; stigma simple ----- 5
5. Stipules linear, persistent; leaf blades oblong-lanceolate -----  
----- 1. *Millettia leucantha*
5. Stipules lanceolate, caduceus; leaf blade ovate -----  
----- 3. *Pterocarpus macrocarpus*
6. Plant monoecious, flower unisexual ----- 4. *Castanopsis indica*
6. Plant diecious, flower bisexual ----- 7
7. Carpel 6; ----- 8
7. Carpel 1-2 to 3 or 5 ----- 9
  8. Inflorescences axillary, dichotomous cymes; flowers white -----  
7. *Lagerstroemia villosa*
  8. Inflorescences terminal, paniculate cymes; flower purple -----  
6. *Lagerstroemia speciosa*
9. Stamens 5 to 7; ----- 10
9. Stamens 10 or numerous, ----- 11
  10. 6.0 m high; leafblades 15.5-18.5 cm by 8.0-12.0 cm -----  
15. *Tectona hamiltoniana*
  10. 20 m high; leaf blades 20-45 cm by 15-30 cm -----  
14. *Tectona grandis*
11. Placentation axile ----- 12
11. Placentation basal or pendulous ----- 13
  12. Stipules present; flower hypogynous ----- 12. *Shorea siamensis*
  12. Stipules absent; flower epigynous ----- 8. *Syzygium grande*
13. Anther dorsifixed; stigma truncate ----- 9. *Buchanania latifolia*
13. Anther basifixed; stigma simple ----- 14
  14. Flower colour creamy; ovary superior ----- 11. *Shorea obtuse*
  14. Flower colour greenish white; ovary inferior -----  
5. *Terminalia chebula*

## Discussion and Conclusion

The present research deals with the taxonomic study on fifteen species of trees in Tamu District of Sagaing Region. The types of vegetation found in the study area are Indaing Forest and mixed deciduous Forest (Nyi Nyi Kyaw 2015). Tamu District area in Myanmar is one of the valuable interesting area for floristic studies.

All together 15 species belonging to 11 genera of 10 families were recorded. The member of 15 species were dominant distributed in the study area. In the 15 species, simple leaves are 9 species as well as compound leaves are 6 species. The actinomorphic flowers are found in 11 species and zygomorphic flowers are in 4 species. 12 species of superior ovaries and 3 species of inferior ovaries were studied.

The fruit types are variable in the studied species. The capsules are found in *Lagerstroemia speciosa* (L.), *L. villosa* Kurz., *Chukrasia tabularis* A. Juss. *Fernandoa adenophylla* (Wall.ex G. Don). The deupaceous are *Castanopsis indica* A.DC., *Terminalia chebula* Retz., *Buchanania latifolia* Roxb., *Shorea obtusa* Wall., *Tactona grandis* L.f, *T. hamiltoniana* Wall. and pod in the species of genus *Mellettia*. The baccate is found in *Syzygium grande* (Wight) Walp. and *Shorea siamensis* Miq. is nutlets. *Pterocarpus macrocarpus* Kurz is samaroid fruit.

In the study area, *Mellettia leucantha* Kurz, *Pterocarpus macrocarpus* Kurz, *Terminalia chebula* Retz., *Lagerstroemia speciosa* (L.), *L. villosa* Kurz., *Shorea obtusa* Wall., *S. siamensis* Miq., *Tectona grandis* L.f and *T. hamiltoniana* Wall. were commonly found.

Among the 15 studies species, *Pterocarpus macrocarpus* Kurz, *Lagerstroemia speciosa* (L.), *Shorea obtusa* Wall., *Tactona grandis* L.f and *T. hamiltoniana* Wall. are economically important timber plants. *Terminalia chebula* Retz. is valuable medicinal plant of Myanmar.

In the research studied, many valuable timbers species not only can be recorded but also various forest products can be found. It is hope that the valuable timber trees are distributed as wild type in Tamu District and the natural plant resources will also be useful for further studies.

Therefore, the valuable economically timber species should be conserved as the programme of natural vegetation of Tamu District, Sagaing Region.

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