

Taxonomic Study on Some Species of Angiosperms Found in Myingyan Degree College Campus, Myingyan Township

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Abstract

The present paper deals with taxonomic study on some species growing in Myingyan Degree College Campus, Myingyan Township. Some species of flowering plants were collected from June to August 2019. Among them, (8) species belonging to (8) genera from (7) families were recorded, identified and classified. The morphological characters of these species were also described with Scientific names, Myanmar names, English names, family.

Keywords: Taxonomic, Myingyan Degree College, Identified

1. Introduction

Taxonomic study is the learning of the kinds of plants on the earth and their names distribution and habitat characteristics. All these products of taxonomic research add to the resources of an area, to studies on land potentials, to evaluations of resources of raw materials possibly studied to main needs in a multiplicity of activities.

The flowering plants, known scientifically as the class Angiospermae, are the dominant group at vascular plants an earth today. Not only are the flowering plants the largest and most successful plant group today but they are of fundamental importance to the life and survival of man [3].

Myanmar is exceptionally rich in plant biodiversity, but during the last-half century very few new plant collections have been made in the area [8]. About 7,000 species are included in the book of trees, shrubs, herbs and principal climbers etc [7]. Recently, the revised checklist of Myanmar [8] contains 273 families, 2371 genera, and over 4,800 species.

The present study deals with the number of growing in Myingyan Degree College. This area lies between North latitudes 21°25'22.3" and East longitudes 95°22'27.2".

The aims of this investigation to identify and classify the some flowering plants from Myingyan Degree College Campus to describe the morphological characters of Angiosperms from study area, to contribute the valuable taxonomic information for further scientific research and to provide partially fulfillment in flora of Myingyan Township.

2. Materials and Methods

Plants were collected from Myingyan Degree College Campus during June to August 2019. All the collected specimens were recorded by color photograph during flowering period. These specimens were kept immediately into plastic bags to identify and classify systematically. All collected specimens are identified by the literature: Flora of British India [6], Flora of Java [1], Flora of Ceylon [4]. All the resulting specimens were systematically arranged into families according to the classification system of APG IV system [2]. Genera and species were also arranged by alphabetically. The artificial key to all the studied species had also been constructed.

Finally, the specimens were mounted together with a label and field data on a herbarium sheet. The herbarium specimens had been systematically arranged and they were kept in the Herbarium at Botany Department, Myingyan Degree College.

3. Results

In this research, 8 species belonging to 8 genera of 7 families under class Eudicot (Dicotyledone) shown in Table (1). The taxonomic characterization of all identified species in Myingyan Degree College, Myingyan Township were recorded.

Table 1. List of collected species

Group	Order	Family	No.	Scientific name
Eudicots	Ranunculales	Papaveraceae	1.	<i>Argemone mexicana</i> L.
	Fabales	Fabaceae	2.	<i>Cassia javanica</i> L.
			3.	<i>Clitoria ternatea</i> L.
	Sapindales	Meliaceae	4.	<i>Melia azedarach</i> L.
	Malvales	Malvaceae	5.	<i>Pavonia odorata</i> Willd.
	Brassicales	Cleomaceae	6.	<i>Cleome viscosa</i> L.
	Gentianales	Apocynaceae	7.	<i>Vallisneria spiralis</i> L. (Roth) Kuntze.
	Lamiales	Acanthaceae	8.	<i>Ruellia tuberosa</i> L.

Argemone mexicana L., Sp. Pl. 508. 1753. (Figure 1. A)

Myanmar name : Kha ya; Kone kha ya
English name : Mexican poppy, Prickly poppy
Family name : Papaveraceae

Annual, erect herb, prickly, stems and branches terete, glabrous, latex yellow, foetid, bitter. Leaves simple, alternate; exstipulate; petiole sessile; blades oblong-ovate to elliptic-oblong, 10.0-15.0 cm by 2.5-5.0 cm, subamplexical at the base, spinulose-dentate at the margin, acute at the apex, irregular pinnatifid with white prickles on the nerves of both surfaces. Inflorescences terminal solitary cymes. Flowers bisexual, actinomorphic, hexamerous, hypogynous, bright yellow, 3.0-4.0 cm in diameter; pedicellate; bracteate; ebracteolate. Sepals 3, free, oblong, concave, spinous without, glabrous within. Petals 6, in 2 whorls, free, obovate, glabrous. Stamens numerous, free inserted; filaments filiform; anthers ditheous, basifixed, longitudinal dehiscing. Carpels 4-6, fused; ovary superior, ovoid, unilocular with numerous ovules on the parietal placentae; style subsessile; stigma 5-lobed. Fruits capsular oblongoid, dehiscing apically by 3 to 7 valves, many-seeded. Seeds subspherical, blackish, endospermic.

Cassia javanica L., Sp. Pl. 379. 1753. (Figure 1. B)

Myanmar name : Ngu sat
English name : Pink and white,
Shower tree
Family name : Fabaceae

Perennial, deciduous trees; stems and branches terete, densely pubescent when young. Leaves unipinnate-compound, paripinnate, alternate; stipulate; petiolate; leaflets 10- to 18-paired, oblong, 2.0-3.5 cm by 1.0-1.3 cm, obtuse at the base, entire along the margin, mucronate at the apex, pubescent on both surfaces. Inflorescences axillary or terminal raceme, many-flowered. Flowers bisexual, zygomorphic, pentamerous, hypogynous, pink, fragrant, showy, pedicellate; bracteate, persistent; ebracteolate. Sepals 5, free, ovate, unequal, pubescent. Petals 5, free, ovate-oblong, tomentose. Stamens 10, 7 fertile, free, inserted; filament unequal in length; anthers ditheous, basifixed, dehiscing by apical pores; staminodra 3. Carpel 1; ovary superior, linear, curved, unilocular with many ovules on the marginal placentae; style terminal, curved; stigma simple. Pod terete, indehiscent, brownish-black, many-seeded. Seeds ovate, embedded in brown pulp, non-endospermic.

Clitoria ternatea L. Sp. Pl. ed. 1:753. 1753. (Figure 1. C)

Myanmar name : Aung me nyo
English name : Butterfly pea; Blue pea
Family name : Fabaceae

Annual, twining herbs; stems and branches terete, pubescent. Leaves unipinnately compound, imparipinnate, alternate; stipulate; petiolate; leaflets 5 or 7, ovate-oblong, 2.5-3.5 cm by 2.0-2.5 cm, obtuse at the base, entire along the margin, obtuse at the apex, pubescent on both surfaces. Inflorescences axillary and solitary cymes. Flowers bisexual, zygomorphic, pentamerous, hypogynous, bright blue, about 1.8-2.0 cm in diameter; pedicellate; bracteate; bracteolate. Calyx tubular-campanulate, 5-lobed, sparsely pubescent. Corolla papilionaceous; standard obovate 2.0-3.0 cm long, bright blue with a yellow pitch; wings oblong,

about 1.0 cm long; keels ovate-oblong, 3.5-4.5 mm long. Stamens 10, diadelphous; filaments filiform; anthers ditheous, uniform, dorsifixed, dehiscing by longitudinal slit. Carpel 1; ovary superior, linear, unilocular with few ovules on the marginal placentae; style terminal; stigma globose. Pods linear, flat, dehiscent, glabrous, 7-10 seeded. Seeds suborbicular, compressed, brown, non-endospermic.

Melia azedarach L. Sp. Pl. ed. 1: 384. 1753. (Figure 1. D)

Myanmar name : Pantama;
Thin baw pantama
English name : Bead trees
Family name : Meliaceae

Perennial, trees; stems and branches terete, glabrous. Leaves bipinnately compound, imparipinnate, alternate, exstipulate; petiolate, pulvinous; leaflets 3 to 7-paired; blade ovate or oblong-lanceolate to elliptic, 3.0-5.0 cm by 1.0-2.5 cm, acute to oblique at the base, serrate along the margin, acute to acuminate at the apex, glabrous on both surfaces. Inflorescences axillary paniculate cyme, many-flowered. Flowers bisexual, actinomorphic, pentamerous, hypogynous, lilac or bluish, about 1.0 cm in diameter; pedicellate; bracteate; ebracteolate. Calyx 5-lobed, campanulate; tomentose. Petals 5, free, oblong-ovate, pubescent. Stamens 10, monadelphous, exerted; staminal tube 1.0-2.0 mm long, alternate with the staminode; anthers ditheous, basifixed, dehiscing by longitudinal slit. Carpels 5, fused; ovary superior, ovoid, pentalocular with one ovule in each locule on the axile placentae; style terminal; stigma capitate. Fruits drupaceous, rounded, glabrous. Seeds rounded, black, smooth, endospermic.

Pavonia odorata Willd., Sp. Pl. 837. 1800. (Figure 2. A)

Myanmar name : Ba lar
English name : Unknown
Family name : Malvaceae

Annual, erect herbs; stems and branches terete, glandular hairy. Leaves simple, alternate; stipulate; petiolate; blades ovate, suborbicular 3.0-4.0 cm by 2.0-2.5 cm, shallowly 3-lobed, subcordate, dentate along the margin, acute at the apex, stellate hairy on both surfaces. Inflorescences axillary and solitary cyme. Flowers bisexual, actinomorphic, pentamerous, hypogynous, pinkish-white, 1.0-1.5 cm in diameter, morning bloomer; pedicellate; epicalyx segments 10-14, linear-filiform, hairy. Calyx campanulate, 5-lobed, glabrous. Corolla rotate, 5-lobed, glabrous. Stamens numerous, monadelphous, exerted; filament linear; anthers monotheous, dorsifixed, dehiscing by longitudinal slit. Carpels 5, fused; ovary superior, globose, pentalocular with one ovule in each locule on the axile placentae; style filiform; stigmatic branches 10, capitate. Fruits schizocarpic, globose, mericarps 5, 5-seeded, pubescent. Seeds reniform, dark-brown, endospermic.

Cleome viscosa L., Sp. Pl. 672. 1753. (Figure 2. B)

Myanmar name : Hin gala aying

English name : Tick weed; Dog Mustard
 Family name : Cleomaceae

Annual, erect foetid herbs; stems and branches terete, pubescent, vascid, foetid. Leaves palmately compound, alternate, exstipulate; petiolate, glandular pubescent; leaflets 3 to 5, oblong-ovate, 2.0-4.0 cm by 1.0-1.3 cm, cuneate at the base, entire along the margin, acute at the apex, glandular pubescent on both surfaces. Inflorescence terminal corymbose raceme; pedunculate. Flowers bisexual, actinomorphic, tetramerous, hypogynous, yellow, about 1.0 cm in diameter; pedicellate, glandular pubescent; ebracteate; ebracteolate. Sepals 4, free, oblong, glandular pubescent. Petals 4, free, obtuse to oblong, glabrous. Stamens 12-15, free, inserted; filament filiform; anthers dithecos, basifixed, dehiscing by longitudinal slit. Carpels 2, fused; ovary superior, linear, unilocular with many ovules on the parietal placentae; style short; stigma capitate. Fruits capsular, linear-cylindric, glandular pubescent, prominent, parallel-veined, many-seeded. Seeds circular, orange-red, non-endospermic.

Vallaris solanacea (Roth.) Kuntze, Rev. Gen. 147. 1891. (Figure 2. C)

Peltanthera solanacea Roth. Nov. Pl. Sp. 132. 1821.

Myanmar name : Gan boke; Khin boke;
 Nabu nwe

English name : Scarlet gourd
 Family name : Apocynaceae

Perennial, shrub wood, twining, milk-juicy. Leaves simple, opposite and decussate; exstipulate; petiolate; blade elliptic or oblong-lanceolate, 4.0-8.0 cm by 2.0-4.0 cm, cuneate at the base, entire along the margin, acuminate at the apex. Inflorescence axillary, 3-7 flowered cyme. Flowers bisexual, actinomorphic, pentamerous, hypogynous white, about 1.5 cm in diameter, fragrant; pedicellate; ebracteate; ebracteolate. Calyx 5-partite, segments ovate-oblong, pubescent. Corolla campanulate, 5-lobed, glabrous. Stamens 5, free, inserted, adnate to the top of corolla-tube; filament clavate, short; anthers dithecos, sagittate, disk annular, fleshy. Carpels 2, free; ovary superior, bilocular, with many ovules in each locule; common style basally filiform, apically clavate; stigma thick with a collar, apiculate. Fruits follicular, oblong-ellipsoid, straight, pericarps thick, fibrous, many-seeded. Seeds ovate, 2-seriate, beaked, non-endospermic.

Ruellia tuberosa L., Sp. Pl. 635. 1753. (Figure 2. D)

Myanmar name : Byauk
 English name : Unknown
 Family name : Acanthaceae

Perennial, erect herbs; stems and branches subquadrangular, tumid at the node, roots tuberous, fasciculated, pubescent. Leaves simple, opposite and decussate, exstipulate; petiolate, blades oblong-obovate, 4.0-6.0 cm by 3.0-4.0 cm, obtuse at the base, entire along the margin, rounded at the apex, glabrous on both surfaces. Inflorescences axillary dichotomous cymes. Flowers bisexual, zygomorphic, pentamerous, hypogynous, pale blue, 3.0-3.5 cm in diameter;

pedicellate; bracteate; bracteolate. Calyx campanulate, 5-lobed, glabrous, persistent. Corolla campanulate, 5-lobed, glabrous. Stamens 4, free, didynamous, epipetalous; filament linear; anthers dithecos, dorsifixed, dehiscing by longitudinal slit. Carpels 2, fused; ovary superior, oblongoid, bilocular with many ovules in each locule on the axile placentae; style terminal, filiform; stigma bifid. Fruits capsular, fusiform, glabrous, 10-12 seeded. Seeds orbicular glabrous, non-endospermic.

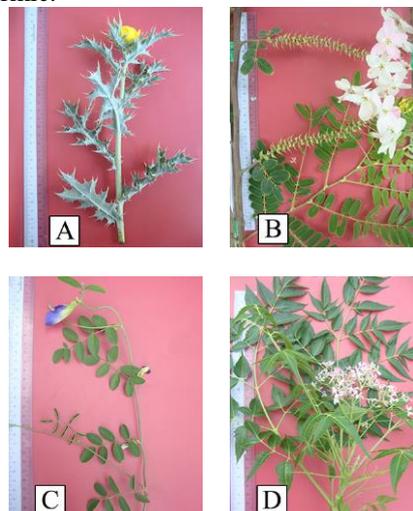


Figure 1. A. *Argemone mexicana* L.
 B. *Cassia javanica* L.
 C. *Clitoria ternatea* L.
 D. *Melia azedarach* L.

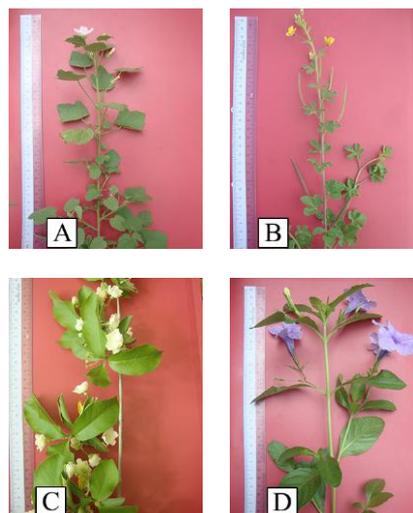


Figure 2. A. *Pavonia odorata* Willd.
 B. *Cleome viscosa* L.
 C. *Vallaris solanacea* (Roth) Kuntze.
 D. *Ruellia tuberosa* L.

An Artificial Key to the Species

1. Leaves simple.....2
1. Leaves compound.....5
 2. Fruits capsular.....3
 2. Fruits schizocarpic and follicle.....4
3. Plants with prickle; flower actinomorphic.....1. *Argemone mexicana*
3. Plants without prickle; flower zygomorphic.....

- orphic.....8. *Ruellia tuberosa*
 4. Plants milky juicy present; stamens 5, free; anthers dithecal.....
7. *Vallisneria spiralis*
 4. Plants milky juicy absent; stamens numerous, monadelphous; anthers monotheical.....5. *Pavonia odorata*
 5. Plants with foetid; glandular pubescent present; tetramerous flowers.....
6. *Cleome viscosa*
 5. Plants without foetid; glandular pubescent absent; pentamerous flowers.....6
 6. Leaves arrangement serrate; axile Placentation.....4. *Mellia azedarach*
 6. Leaves arrangement entire; marginal placentation.....7
 7. Plants twining herbs; flowers bright blue.....3. *Clitoria ternatea*
 7. Plants deciduous trees; flowers pink2. *Cassia javanica*

4. Discussion and Conclusion

In the present study, 8 species belong to 8 genera of 7 families of Angiospermae in Myingyan Degree College have been identified and described. The Order Ranunculales, Fabales, Sapindales, Malvales, Brassicales, Gentianales and Lamiales were found in the study area.

The most common families of Malvaceae, Fabaceae, Apocynaceae, Meliaceae, Acanthaceae and Cleomaceae were found in the study area.

The Papaveraceae is mainly distributed in tropical and subtropical regions. The family can be distinguished from other families by the presence of latex yellow, foetid, bitter and leaves with prickles on the nerves of both surfaces. Member of family Malvaceae were widely distributed in Cosmopolitan. The family can be distinguished from other families by the presence of stamens monadelphous stamens and monotheical anthers. Most of the flowers of collected species are morning bloomers. *Pavonia odorata* is easily distinguished from other species by its epicalyx segment.

The family Acanthaceae is mainly distributed in tropical and subtropical regions and consists of about 220 genera and 3000 species [5]. The family can be distinguished by its opposite leaves, zygomorphic flowers, corolla bilabiate and stamens 4, didynamous. The family Fabaceae composed of about 478 genera and 13,600-14000 species and widespread in temperate, tropical and subtropical regions [5]. In the present study, the two different species *Cassia javanica* of habit is deciduous trees and *Clitoria ternatea* of habit is twining herbs. The family can be distinguished by its zygomorphic flowers, and marginal placentation.

Member of family Meliaceae, the species *Mellia azedarach* L. were recorded in the study area. This species consists of stamens 10, monadelphous; carpels 5; ovary superior and fruits drupaceous.

In the present study, 1 species belonging 1 genera of Cleomaceae were occurred in the study area. The family

is mostly distributed in temperate and tropical regions. *Cleome viscosa* is erect, foetid herbs; leaves palmately compound; flowers tetramerous; superior ovary with parietal placentae and fruits capsular. The species was abundantly found in the study area.

Apocynaceae family were widely distributed in Cosmopolitan. The family can be significantly found from other families by the presence of milk juicy, and anthers with disk annular fleshy.

In the present study, (5) species are herbs, (1) species are shrubs and (2) species are trees. The leaves of (4) species are simple leaves and compound leaves are found in (4) species. In the present study, actinomorphic flowers are (5) species and zygomorphic flowers are found in (3) species. The fruits type of (3) species are capsular, (2) species are pod, (1) species are drupaceous, (1) species are follicular and (1) species are schizocarpic.

In the present study, (8) species belonging to (8) genera of (7) families present and all are wild plants of the study area.

Finally, it is sincerely hoped that the research work of floristic study on Angiosperms of Myingyan Degree College will give valuable information for students and local dweller to provide a taxonomic information and floristic knowledges for natural scientific researcher and botany students.

Acknowledgements

We are thankful to Dr Maw Maw Khin, Professor and Head, Department of Botany, Myingyan Degree College, for her permission to undertake this research paper and for all the departmental facilities.

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