Study on Some Useful Plants Angiosperm Growing in Aung Myin Bar Hu Protected Forest Area, Pyay Township

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Abstract

In the present research of the wild plants in Aung Myin Bar Hu Protected Forest area in Pyay Township were carried out in 2016-2017. Among them, total of 15 species under 15 genera belonging to the families Aristolochiaceae, Magnoliaceae, Annonaceae, Dioscoreaceae, Colchiacaceae, Zygophyllaceae, Fabaceae, Combretaceae, Myrtaceae, Meliaceae, Malvaceae, Bixaceae and Rubiaceae etc.were recorded from this area. For each species with scientific name, local name, family, flowering period, morphological character, uses and Global Positioning System (GPS) have been identified in this study.

Keywords : wild plants, morphological character.

Introduction

Many of the thousands of plant species growing throughout the world have medicinal uses, containing active constituents that have a direct action on the human body. They are used both in herbal and conventional medicine and after benefits that pharmaceutical drugs, helping to combat illness and support the body's efforts to regained good health. For this reason, an attempt has been made to undertaken a research work to fulfill the botanical knowledge of some useful plants angiosperms growing in Aung Myin Bar Hu Protected Forest Area in Pyay Township.Angiosperm survival of men for their major sources of food and substances either directly or indirectly through by providing a source of raw materials for building, shelter and medicine. Floristic information is valuable in order to use fully and manage our valuable plant resources. The aim and objectives of this investigation is to describe the morphological characteristics of angiosperm from study area; to provide these medicinal plants which are beneficial and useful to mankind.

Materials and Methods

The specimens were collected from Aung Myin Bar Hu Protected Forest, Pyay township during 2016- 2017.All the collected specimens were recorded by camera and labeled by collection numbers. Then, these specimens were kept into the plastic bags to identify and classify systematically. Field notes were made on the natural habit including flowers and its color and plant location by using the GPS (Global Position System). Map of study area was shown in Figure 1 andthe study area of Aung Myin Bar Hu protected forest was shown in Figure.2.

Study Area

The total Area of Aung Myin Bar Hu Protected Forest is 1640 acre.

Located in North latitude 16° 51.154′ and East longitude. 096° 14.360′

Sea level - 89 meter.

Fig.1 Map of Pyay Township in Study Area

Fig.2 Study Area of AungMyin Bar Hu Protected Forest

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Result

1. *Aristolochia roxburghiana* Klotzsch. (Aristolochiaceae)(Figure.1)

Local Name - Eik thara muli

Morphological Character: Perennial twining herbs, stem angular, glabrous. Leaves alternate, simple, petiolate, leaf blade ovate- cordate, margin entire, acuminate at the apex, deeply cordate at the base, exstipulate. Inflorescences axillary raceme. Flower complete, bisexual, zygomorphic, hexamerous,cyclic, epigynous. Tepals (6), the limb 2 lobed, ligulate, tepaloid (dark purple). Stamens (6), united. Carpels (6), syncarpous, parietal placentation, the ovary inferior. Fruits capsule, obovoid-globose. Seeds endospermic, obtusely triangular to subcordiform.**Flowering period**-May to November

Uses: The roots are stomachie and are used in the treatment of colic, gastntis, diarrhea, dysentery, food poisoning, rheumatism and dysmenorrhea. It is also use as tonic carminative and immenagogue (Pragapati N.D *etal*. 2003.A Handbook of Medicinal Plants. Agrobios India).**Specimen examine**: Htet Htet Linn; Coll No. 012, 6 -12- 2016.

2. *Magnolia doltsopa* (Buch. Ham. ex DC.) Figlar(Magnoliaceae**)**((Figure.2)

Local Name - Saga phyu

Morphological Character: Trees, stem terete, glabrous. Leaves alternate, simple, petiolate, leaf blade elliptic-oblong, margin slightly involute, acute at the apex, broadly cuneate at the base, stipulate caducous. Inflorescences terminal or axillary solitary cymes. Flower complete, bisexual, actinomorphic, numerous merous, spirocyclic, hypogynous. Tepals numerous, spoon shaped, tepaloid (creamy white). Stamens numerous, apostemonous.Carpels numerous, apocarpous, spirally arranged on the receptacle, marginal placentation, the ovary superior. Fruits berries, obovoid. Seeds oily endosperm.**Flowering period**- April – September.

Uses: The bark of magnolia trees aredried and usedas herbal supplement or tincture. This bark is used to prevent certain types of cancer, particularly prostate cancer. One of the active compounds in magnolia, magnolol, is able to prevent the spread or increase of prostate cancer cells.(www.10 Impressive Benefits Of Magnoliaby John Staughton last updated- April 26, 2018)**Specimen examine:** Htet Htet Linn; Coll No. 155 : 24. 4. 2017 .

3. *Michelia champaca* (L.) Bail. ex Pierre.(Magnoliaceae**)** (Figure.3)

Local Name -Sagawa

Morphological Character: Trees, stem erect, buttressed. Leaves alternate, simple, petiolate, leaf blade elliptic or ovate, margin slightly undulate, acuminate to subcaudate at the apex, broadly cuneate at the base, stipulate. Inflorescences terminal or axillary solitary cymes. Flower complete, bisexual, actinomorphic, numerous merous, spirocyclic, hypogynous. Tepals numerous, oblanceolate, petaloid (yellow). Stamens numerous, apostemonous. Carpels numerous, apocarpous, spirally arrangeed on a cone like,marginal placentation, the ovary superior. Fruits berries, obovoid. Seeds oily endosperm.**Flowering period**- April – June.

Uses: The root and root bark are purgative and emmengagule and are useful in the treatment of abscesses, inflammation, constipation. Flowers, buds and fruits are bitter, astringent, digestive, carminative, depurative,stimulant, stomathic and antipyretic (Pragapati N.D *etal*. 2003. A handbook of Medicinal Plants. Agrobios India).**Specimen examine**: Htet Htet Linn; Coll No.128: 17. 4. 2017.

4. *Annona squamosal* L.(Annonaceae**)**(Figure.4)

Local Name –Awza

Morphological Character: Small trees,stem irregularly spreading branches. Leaves alternate, simple, petiolate, leaf blade lanceolate or oblong, margin entire, acute to obtuse at the apex, obtuse to rounded at the base, exstipulate. Inflorescences axillary solitary cymes. Flower

complete, bisexual, actinomorphic, trimerous, spirocyclic, hypogynous. Sepals 3, aposepalous ; petals 3+3, apopetalous, petaloid (yellowish green)). Stamens numerous, apostemonous. Carpels numerous, apocarpous, spirally arrangeed on the receptacle, basal placentation, the ovary superior. Fruits aggregate of berries, united to form a single compound fruit. Seeds endosperm**. Flowering period -** May to Novembers.

Uses: The root are powerful purgative and in mental depression and spinal disorders. The leaves are useful in destroying lice, proctoptosis in children. The fruit are sweet, haematinic, colling, stimulant, expectorant, maturant and tonic. The seed are abortifacient, insecticidal and in destroying lice in the hair (Pragapati N.D *etal*. 2003. A handbook of Medicinal Plants. Agrobios India). **Specimen examine**: Htet Htet Linn; Coll No. 151 : 22. 4. 2017.

5. *Dioscorea pentaphylla* L., Sp.Pl.1032.1753(Dioscoreaceae)(Figure-.5)

Local Name - Kawayu

Morphological Character: Perennial dioecious, tuberous climbers, stem terete, twining to left, glabrous. Leaves alternate, palmately pentafoliolate compound, petiolate, leaflet elliptic ovate, margin entire, acuminate at the apex, acute at the base, exstipulate. Inflorescence axillary, paniculate raceme with many flowered, hunging. Staminate flowers incomplete, unisexual, actinomorphic. Tepals 3+3, biseriate, tepaloid (yellowish green). Stamens 3+3, with 2 series, apostemonous. Pistillate flowers incomplete, unisexual, actinomorphic, epigynous. Tepals 3+3, biseriate, tepaloid (yellow). Carpels (3), syncarpous, axile placentation, the ovary inferior. Fruits capsule, oblong. Seeds endospermic, oblong.**Flowering period**-September to November

Uses: Their therapeutic properties for curing various ailments such as cough, cold, stomachache, leprosy, burns, fungal diseases, skin diseases, contraceptive, dysentery, arthritis, rheumatism, etc (Pragapati N.D, *etal*. 2003. A handbook of Medicinal Plants. Agrobios India).**Specimen examine**: Htet Htet Linn; Coll No. 042, 6 -11- 2016.

6. *Gloriosa superba* L. Sp.Pl.305.1753. (Colchicaceae) (Figure.6)

Local Name - Hsimee dauk

Morphological Character: Perennial herbaceous rhizomatous plant, climber, branching stem twining, glabrous. Leaves spirally arranged, usually opposite, simple, sessile, leaf blade ovate-lanceolate, margin entire, coiled at the apex, rounded at the base, exstipulate. Inflorescences axillary solitary cymes, bent near the apex. Flower complete, bisexual, actinomorphic, pentamerous, hypogynous. Tepals 6,apotepalous, lanceolate, more or less undulate margins, reflexed, tepaloid (green or yellow base, dark red apex,). Stamens 3+3, apostamonous. Carpels (3), syncarpous, axile placentation, the ovary superior. Fruits capsule, oblong-ovoid. Seeds endospermic, globose**.Flowering period**- October to December

Uses: The tuberous roots are useful in curing inflammations, ulcers, bleeding piles, white discharge, skin diseases, leprosy, indigestion, snake bites, intermittent fever and debility. If consumed in large doses, it is highly poisonous, it causes vomiting, purging, stomachache (Pragapati N.D, *etal*. 2003. A handbook of Medicinal Plants. Agrobios India).

Specimen examine: Htet Htet Linn; Coll No. 9, 5 -11- 2016.

7. *Tribulus terrestris* L.(Zygophyllaceae) (Figure.7)

Local Name - Tisule

Moprphological Character:A taprooted herbaceous plants,stem radiate from the crown, branching,forming flat patches. Leaves opposite,unipinnately compound, paripinnate, petiolate, leaf blade oblong to obliquely, margin entire, acute to obtuse at the apex, slightly oblique at the base, stipulate hairy. Inflorescences axillary and solitary cymes. Flower complete, bisexual, actinomorphic, pentamerous, cyclic, hypogynous. Sepals 5 aposepalous ; petals 5, apopetalous,

petaloid (yellow). Stamens 10, apostemonous. Carpels (5), syncarpous, axile placentation, the ovary superior. Fruits schizocarp,two hardened spines mid margin. Seeds nonendosperm. **Flowering period**- April to October

Uses: The roots and fruit are sweet, cooling, diuretic, emollient, digestive, anthelmintic, expectorant, anti-inflammatory, laxative, cardiotonic lithontiptic and tonic. The leaves are astringent diuretic apxrodisiac, depurative, anthelmintic and tonic. The ash of the whole plant is good for external application in rheumarthritis (Pragapati N.D, *etal*. 2003. A handbook of Medicinal Plants.Agrobios India).**Specimen examine**:Htet Htet Linn; Coll No-131, 29 -2-2017.

8. *Mucuna pruriens* (L.) DC.(Fabaceae) (Figure.8)

Local Name - Khweleya thi

Morphological Character: Semiwoody twining vines, stems and branches terete, with dense long fine hairs. Leaves alternate, pinnately trifoliolate, petiolate, leaf blade ovate rhomoboid, margin entire, acute at the apex, oblique at the base, stipulate lanceolate. Inflorescences axillary and panical raceme, peduncles long dark violet pubescent. Flower complete, bisexual, zygomorphic, pentamerous, cyclic, hypogynous. Sepals 5 campanulate ; petals 5, papilionaceous, petaloid (dark violet). Stamens 10, diadelphous. Carpels 1, marginal placentation, the ovary superior. Fruits pods,S-shaped, turgid, densely covered with shining irritant bristly hairs. Seeds endosperm, elliptic, circumference.**Flowering period**- September to January.

Uses: The roots are bitter, stimulant, purgative, diuretic, emmenagogue, anthelmintic, febrifuge and tonic. The seeds are astringent, laxative, anthelmintic and tonic. They are useful in gonorrhoea, consumption, sterilidy and gener debility (Pragapati N.D, *etal*. 2003. A handbook of Medicinal Plants. Agrobios India).**Specimen examine:**Htet Htet Linn;Coll No.060, 6-11- 2016.

9. *Tamarindus indica* L.(Fabaceae)(Figure.9)

Local Name - Magyi

Morphological Character: A large tree, bark dark ashy, branching spreading. Leaves alternate, unipinnately, petiolate,leaf blade oblong, margin entire, rounded at the apex, obliquely rounded at the base, stipulate caducous. Inflorescences terminal and axillary raceme. Flower complete, bisexual, zygomorphic, pentamerous, cyclic, perigynous. Sepals 4, aposepalous; petals 3+2, apopetalous, petaloid (pale yellow). Stamens 9, monadelphous. Carpels 1, marginal placentation, the ovary half- inferior. Fruits pods,oblong . Seeds obovoid-orbicular**.Flowering period**- May to August

Uses: The leaves are sour, astringent, thermogenic, anthelmintic, anti-inflammatory, antifungal, diuretic and febrifuge. The fruit are sour, sweet, refrigerant, digestive, carminative, laxative, antiscorbutic, antiseptic and febrifuge (Pragapati N.D, *etal*. 2003. A handbook of Medicinal Plants. Agrobios India).**Specimen examine**: Htet Htet Linn; Coll No-162, 1-5-2017.

10. *Terminalia chebula* Retziu, Observ.Bot. 5: 31.1788(Combretaceae). (Figure 10)

Local Name - Phan kha

Morphological Character: A medium to large tree, the bark dark brown . Leaves opposite, simple, petiolate,leaf blade ovate ,elliptic, margin entire, acuminate at the apex, rounded at the base, exstipulate .Inflorescences terminal and axillary branched spike. Flower complete, bisexual, actinomorphic, pentamerous, cyclic, epigynous. Sepals (5), synsepalous; petals absent. Stamens 5+5, apostemonous. Carpels 1, pendulous placentation, the ovary inferior . Fruits obovoid, 5- angulary. Seeds one.**Flowering period**- March to November

Uses: Fruits are given internally in the treatment of indigestion, dysentery, jaundice, piles and painful menstruation and a general tonic. Powdered fruit is useful in carious teeth, bleeding and ulceration of gums. Bark useful in a cardio tonic and diuretic (Pragapati N.D, *etal*. 2003. A handbook of Medicinal Plants. Agrobios India). **Specimen examine**: Htet Htet Linn; Coll No. 185, 7-5- 2017.

11. *Syzygiumcumin*(L.)Skeels(Myrtaceae) (Figure.11)

Local Name - Thabye phyu

Morphological Character: A large tree,evergreen, the stem woody,cylindrical . Leaves opposite, simple, petiolate,leaf blade elliptic-ovate to lanceolate , margin entire, acuminate at the apex, cuneate-obtuse at the base, exstipulate .Inflorescences axillary or terminal panicled cymes. Flower complete, bisexual, actinomorphic, tetramerous, cyclic, epigynous, aging from creamy- white to rose-pink before dropping off. Sepals (4),synsepalous ;petals 4,apopetalous,petaloid(creamy white to rose pink). Stamens numerous, apostemonous. Carpels (2), axile placentation, the ovary inferior. Fruits globose berry. Seeds one.**Flowering period**-March to May

Uses: The leaves are antibacterial, strengthening the teeth and bgums. Fruits and seeds are sweet, acrid, sour, tonic, diabete and, diarrhoea. (Pragapati N.D, *etal*. 2003. A handbook of Medicinal Plants. Agrobios India).**Specimen examine**: Htet Htet Linn; Coll No. 167, 2-5- 2017

12. *Azadirachta indica*A.Juss.(Meliaceae)(Figure.12)

Local Name - Tamar

Morphological Character: A medium to large tree, canopy is dense with thick foliage and rounded in shape. Leaves alternate, imparipinnate, petiolate, leaf blade lanceolate, margin serrate, acuminate at the apex, swollenat the base, exstipulate .Inflorescences terminal and axillary raceme. Flower complete, bisexual, actinomorphic, pentamerous, cyclic, hypogynous. Sepals (5), synsepalous; petals 5, apopetalous. Stamens 10, apostemonous. Carpels (3),axile placentation, the ovary superior. Fruits small drup,oblong-ovoid. Seeds one, ellipsoid**. Flowering period**- February to May.

Uses: Leaves are bitter,astringent, depurative, insecticidal, demulcent, leucoderma, intestinal worms, ulcers, tuberculosis, boils, malaria and skin disease. (PragapatiN.D, *etal*. 2003. A handbook of Medicinal Plants. Agrobios India). **Specimen examine**: Htet Htet Linn; Coll No. 141, 7-5- 2017.

13. *Bombax ceiba*L.(Malvaceae) (Figure .13)

Local Name - Letpan

Morphological Character: Tall tree, trunk usually unbranched, bark gray covered with hard small conical prickles . Leaves alternate, digitately compound, petiolate, leaf blade elliptic ovate, margin entire, acuminate at the apex, cuneate at the base, stipulate .Inflorescences many fascicles 1-4 flowers. Flower complete, bisexual, actinomorphic, pentamerous, cyclic, hypogynous. Sepals (5), synsepalous; petals 5, apopetalous. Stamens many, united at the base in 5-6 adelphous. Carpels (5), axile placentation, the ovary superior . Fruits capsule, drup,oblong, 5 valved. Seeds smooth, embedded in silky white wool**. Flowering period**-December to March

Uses: Roots are sweet, cooling, stimulant, tonic, demulcent and dysentery. Flowers are astringent, skin troubles,. Seeds are gonorrhea, chronic. A paste made of the prickles is good for restoring skin colour on the face,(Pragapati N.D, *etal*. 2003. A handbook of Medicinal Plants. Agrobios India). **Specimen examine**: Htet Htet Linn; Coll No. 095, 7-5- 2017.

14. *Cochlospermum religiosum* (L.)Alston (Bixaceae)(Figure 4.14)

Local Name - Ma har hlay khar

Morphological Character: Medium size deciduous tree, bark is deeply furrowed and gray, exceeds gum when injured . Leaves alternate, simple, petiolate, leaf blade elliptic or elliptic lanceolate, margin entire, acuminate at the apex, cordateat the base, exstipulate .Inflorescences terminal panicles. Flower complete, bisexual, actinomorphic, pentamerous, cyclic, hypogynous. Sepals 5aposepalous; petals 5, apopetalous. Stamens many, apostemonous. Carpels (5), parietal placentation, the ovary superior . Fruits capsule, obovoid, pear shape. Seeds smooth, embedded in white cotton. **Flowering period-** December to March

Uses: The gum obtained from this plant is sweetish, cooling and sedative. It is used in the treatment of coughs and gonorrhea. The dried leaves and flowers are stimulan (www. useful tropical plant).**Specimen examine**: Htet Htet Linn; Coll No. 092, 7-5- 2017.

15. *Morinda tinctioria* Roxb. (Rubiaceae) (Figure.15)

Local Name - Nibase lay

Morphological Character: Small tree, stem and branches quadrangular . Leaves opposite and decussate, simple, petiolate, leaf blade broadly elliptic, margin entire, acuteat the apex, cuneateat the base, interpetiolar stipulate .Inflorescences terminal and axillary solitary cyme. Flower complete, bisexual, actinomorphic, pentamerous, cyclic, epigynous. Sepals (5), synsepalous; petals (5), synpetalous. Stamens 5apostemonous. Carpels (2), axile placentation, the ovary inferior . Fruits aggregate, Seeds obovoid, endospermic. **Flowering period**-March to June.

Uses: Leaves are useful as tonic, febrifuge, emmemagogue, dyspepsia, diarrhoea, digestion, wound and fever. Roots is used to inflammation and boils. Unripe is used to rheumatism. (www.morinda tinctoria traditional medicinal uses).**Specimen examine**: Htet Htet Linn; Coll No. 120, 7-5- 2017.

1. Eiktharamuli

2. Sagawa

3. Sagaphyu

4. Awza

5. Kywayu

6. Hsimeedauk

7. Tsule

8. Khweleyathi

9. Magyi

10. Phankha

11. Thabyegyi

12. Tamar

13. Letpan

14. Maharhlaykhar

15. Nibase lay

Discussion and Conclusion

The present research deals with taxonomic study on the flowering plants growing in Aung Myin Bar Hu Protected Forest area in Pyay Township, Bago Region. . Many of the plants studied in this investigation were found to be plants which are grown for their medicinal values.Among them, a total of 15 species under 15 genera and 13 families were collected and identified. They are 15 species 49 genera and 13 families occur in flora of Pyay Township (Myint Myint Wai, 2009). In this research paper, *Cochlospermum religiosum* (L.) Alston is the new record species for checklist of Myanmar. Some useful medicinal plants are great importance in providing health care to a large portion of the population in the world. In Myanmar, the majority of local people utilizes medicinal plants as vegetable drugs, traditional medicine and nutritional foods. Therefore, traditional medicinal plants and their usage in therapy play a very important role in the health care system in Myanmar.

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