A Study on Herbal Plants in National Medicinal Park, Nay Pyi Taw

Nyein Lai Kyaw Tint[1]

Abstract

A study on herbal plants found in national medicinal park, Nay Pyi Taw was carried out. Medicinal uses of these plants were studied by interviewing 5 traditional practitioners. The collected species were identified by using Flora of Java Backer 1963, of Ceylon Dassanayate 1981 and Flora of British India Hooker 1879. The presented 10 species belonging to 9 genera of 8 families were described with the outstanding characters, medicinal uses and the plant parts used.

Keywords : Medicinal plants, outstanding characters, uses and dosage.

Introduction

People dependence on plants for the essentials of his existence has been of paramount importance in his life since the human race began. For this reason, medicinal plants have been used therapeutically all around world, being an important aspect of various medicinal systems. In all the early civilization there was much interest in drug plants. Mankind has used the drugs to cure disease and relief suffering are to a great extent plant products. Plants have been and still are responsible for many of the social ills that beset mankind (Hill, 1953).

The medicinal value of drug plants is due to the presence in the plant tissues of some chemical substance or substances that produce a definite physiological action on the human body. The most important of these substances are the alkaloids, compounds of carbon, hydrogen, oxygen, and nitrogen. Glucosides, essentials oils, fatty oils, resins, mucilages, tannins and gums are all utilized (Hill, 1953). The aim and objective of this study are to provide the useful information obtained from traditional practitioners, to investigate the folk remedies, uses of medicinal plants and to apply the precious medicinal plant in daily life.

In high- income countries, the widespread use of phytotherapy declined at the end of the first part of the twentieth century, due to the development and production of synthetic medicines. During the past few decades, however, phytotherapy has started to be increasingly used even industrialized countries. In low - and middle - income countries, phytotherapy never stopped being important (WHO, 2007).

Materials and Methods

Medicinal plants of traditional drugs in national medicinal park of Nay-Pyi-Taw area were studied from June to October 2023. The study focused on herbal medicinal uses of some plants found in national medicinal park, Nay Pyi Taw. These medicinal plants were identified by Backer, 1963; Hooker, 1879 and Ashin Nagathein, 1970. Myanmar name and English name were studied as recorded by Kress *et al*. (2003) and Handley and Chit Ko Ko, To know Medicinal uses, 5 traditional practitioners were interviewed. The studied species were systematically arranged alphabetically.

Results

In this paper, a total of 10 species belonging to 9 genera of 8 families are presented with the help of photographs. Among the 15 species, Zingiberaceae was Monocot. Santalceae, Piperaceae, Lauraceae, Fabaceae, Malvaceae, Asteraceae, Euphorbiaceae and were Dicot.

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NO	Family	Scientific name	Myanmar name	Part used
1	Lauraceae	*Cinnamomum tamela* (Buch.-Ham) Th.G.G.Nees	Thit-jaboe	Leaves and bark
2	Euphorbiaceae	*Euphorbia heterophylla* L.	Say-pearl	Root
3	Fabaceae	*Glyrrhiza glabra* L.	New cho	Fresh and Dried root
		Pterocarpous santalinus L.	Nathani	Wood
4	Zingiberaceae	*Kaempferia galangal* L.	Kun-sa-gamone	Rhizome
5	Malvaceae	*Mansonia gagei* J.R Drumm	Ka-ra-mak	Bark
6	Piperaceae	*Piper longum* L.	Peik-chin	Fruit
		Piper nigrum L.	Nga-yoke-kaung	Fruit
7	Santalaceae	*Santalum album* L.	Natha-phyu	Wood
8	Asteraceae	*Saussurea lappa* C.B.Clarke.	Pan-nu	Root

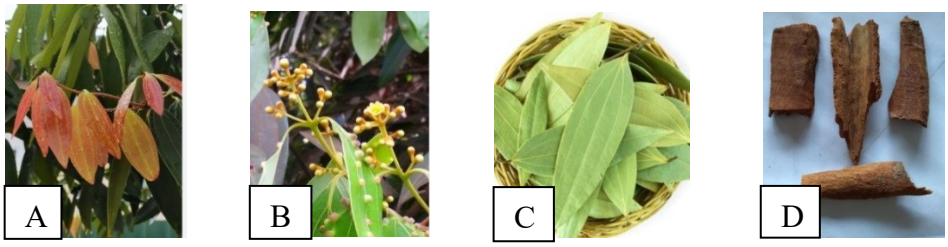
Scientific Name - *Cinnamomum tamela* (Buch.-Ham.) Th.G.G. Nees
Myanmar Name - Thit-jaboe
English Name - Celyon cinnamon
Family - Lauraceae
Part used - Leaves and bark

Outstanding characters

Evergreen trees, shoots with terminal vegetative buds. Leaves alternate or opposite, pinnately veined or strongly 3-veined. Flowers usually bisexual in axillary panicles.Perianth segments 6. Fertile stamens usually 9 with 4- celled anthers, outer 6 introse, inner 3 extrose. Fruit borne on an enlarged fleshy parianth cup, cup entire or with persistent perianth segments.

Traditional uses

Bark is used for indigestion, constipation, flatulence, nausea, abdominal pain. The leaves are used as a fragrance for cooking.
Dosage -Oral, 1- 4 g per day (decoction, powder).



Habit flower Part used (Leaves) Part used (bark)

Figure 1. *Cinnamomum tamela* (Buch.-Ham.) Th.G.G. Nees

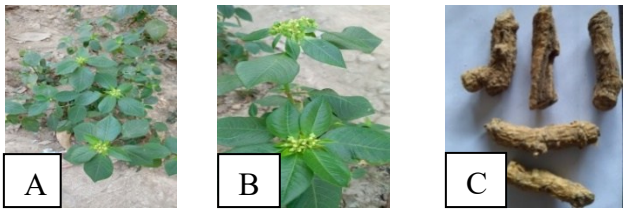
Scientific Name - *Euphorbia heterophylla* L.
Myanmar Name - Say- pea-lae
English Name - Nil
Family - Euphorbiaceae
Part used - Root

Outstanding characters

Herbs, annual, erect to tall, often tinged red. Stem glabrous to sparsely pilose at apex, hollow. Leaves alternate, stipules purplish glands, fairy conspicuous; blade ovate, abaxially pilose especially on midrib and veins, glaberescent, adaxially glabrous to sparsely pilose margin, margin with minute distant gland-tipped teeth. Cyme terminal and axillary, each forking, cyathia densely clustered; basal bracts similar to leaves but paler green. Male flowers bracteoles few, liguate, feathery. Female flowers ovary pedicellate, glabrous or occasionally minutely puberulent; perianth forming an obvious rim; style bifid to halfway. Fruiting pedicel reflexed; capsule exserted, deeply 3-lobed. Seeds blackish-brown.

Traditional uses

Roots are used for indigestion, constipation, flatulence, nausea, abdominal pain.
Dosage – Oral, 1- 4 g per day (decoction, powder).



Habit flower Part used (Root)

Figure 2. *Euphorbia heterophylla* L.

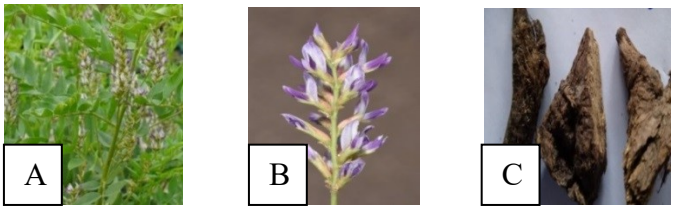
Scientific Name - *Glycyrrhiza glabra* L.
Myanmar Name - New- cho
English Name - Liquorice
Family - Fabaceae
Part used - Fresh and dried root

Outstanding characters

Herbs. Stem woody at the base, densely scaly glandular punctate, white hairy. Leaves11-17foliolate; petiole densely yellow-brown glandular hairy and villous; leaflets ovate-oblong, base rounded, apex retuse. Raceme much densely flowered; rachis densely brown scaly glandular punctate, white villous and tomentose. Calyx campulate, 5 toothed; upper 2 teeth mostly jointed. Corolla purple, standard ovate or oblong, base clawed, apex retuse; wing and keel straight. Ovary glabrous legume oblong, flat. Seed dark green, smooth.

Traditional uses

Roots are used fora cough, cold, influenza, indigestion, constipation, flatulence, nausea, abdominal pain.
Dosage– Oral, 3- 8g per day (decoction, powder).



Habit flower Part used (Root)

Figure 3. *Glycyrrhiza glabra* L.

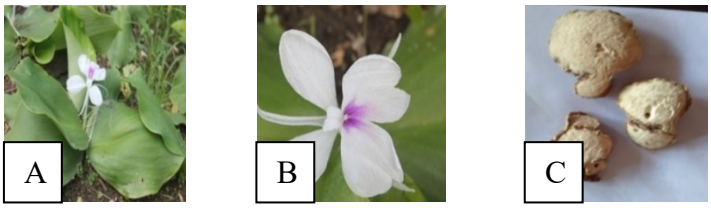
Scientific Name - Kaempferia *galangal* L.
Myanmar Name - Kun-sa-gamone
English Name - Kencur
Family - Zingiberaceae
Part used - Rhizome

Outstanding characters

Rhizome pale green or greenish white inside, tuberous, fragrant. Leave usually 2, spreading flat ground, subsessile; leaf blade green, orbicular, glabrous on both surface or villous abaxially, margin usually white. Inflorescences terminal on pseudostems, few many flowered; bracts lanceolate. Lateral staminodes abovate-cuneate. Labellum apex slightly 2 lobed or deeply 2 cleft; lobes white with purple marking at base. Anther sessile, connective appendage strongly reflexed, rectangular, 2- lobed.

Traditional uses

Rhizome are used for treating arthralgia, headache, neck pain.
Dosage – Oral, one table spoon per day (decoction, powder).



Habit flower Part used (Rhizome)

Figure 4. Kaempferia *galanga* L.

Scientific Name - *Mansonia gagei* J. R Drumm

Myanmar Name - Ka-ra-mak
English Name - Bustard sandalwood
Family - Malvaceae
Part used - heartwood

Outstanding characters

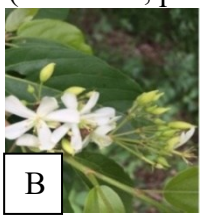
Tree; bark whitish, smooth; twigs sparsely hairy to glabrescent. Leaves ovate to elliptic- oblong, apex acute, base turnate, subcordate and minutely oblique, subcoriaceous, glaberscsent and olive- green when dry, margin slightly sertate. Petiole blackish when dry. Inflorescence up 15 cm long. Flower white, hairy outside. Petal 5, free, lanceolate. Stamens alternating with staminodes; anther 1- celled with a short filament. Carpel hairy; style slender and cureved outwards; stigma pointed. Fruit an ellipsoid samara, indehiscent, usually in pair, apical wing curved.

Traditional uses

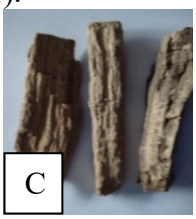
Wood are used for treat arthralgia, headache, neck pain.

Dosage - Oral 1-4 g (decoction, powder).

Habit



flower



Part used (wood)

Figure 5. *Mansonia gagei* J. R Drumm

Scientific Name - *Pterocarpous santalinus* L.
Myanmar Name - Natha-ni
English Name - Red sandalwood
Family - Fabaceae
Part used - Wood

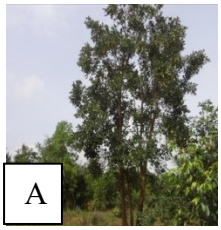
Outstanding characters

A small to medium-size, deciduous tree, rounded crown; bark blackish- brown, yielding a deep red latex when cut, heartwood dark purple. Leaves trifoliate imparipinnate; leaflets 3, rarely 4-5,broadly ovate or orbicular, coriaceous., Inflorescence in simple or sparingly branched racemes; pedicels long; flowers yellow calyx teeth minute, deltoid. Fruits obliquely orbicular, short, concavely curved stipe, woody. Seeds reddish-brown, smooth, leathery.

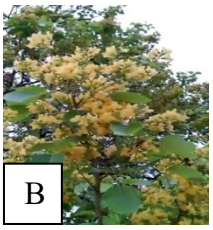
Traditional uses

Wood powder is used for headache, arthralgia, neck pain, indigestion, constipation, flatulence, nausea, abdominal pain.

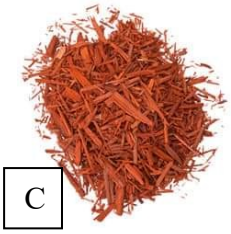
Dosage - Oral- 1-4 g (decoction, powder).



Habit



flower



Part used (wood)

Figure 6. *Pterocarpous santalinus* L.

Scientific Name - *Piper longum* L.
Myanmar Name - Peik- chin
English Name - Indian long pepper
Family - Piperaceae
Part used - Fruit

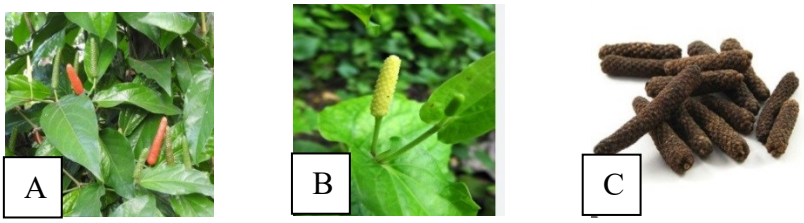
Outstanding characters

Perennial with a jointed, woody rootstock and herbaceous slender, prostrate or ascending shoots, Fertile branches erect, tall, minutely puberulous with short-petioled. Leaves elliptic or cordate and symmertrical or slightly asymmetrical at the base, gradually tapering into a short acumen. Inflorescence spike; flowers crowded, dioecious, bracts orbicular, narrowly stipulate. Stamens 2. Styles 3-4. Baccate, concrescent, forming a fleshy spadix.

Traditional uses

The fruit are used for cough, cold, influenza.

Dosage - Oral1-3 g (decoction, powder).



Habit flower Part used (fruit)

Figure 7. *Piper longum* L.

Scientific Name - *Piper nigrum* L.
Myanmar Name - Nga-yoke-kaung
English Name - Black pepper
Family - Piperaceae
Part used - Fruit

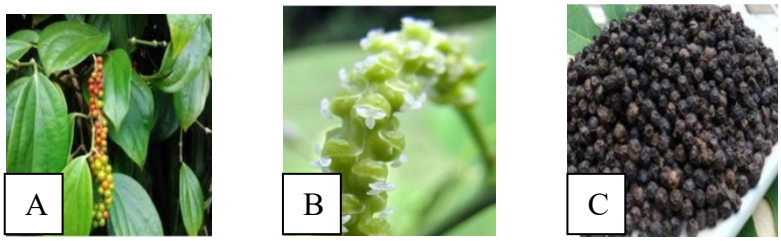
Outstanding characters

Stout woody climbers, climbing. Rooting at nodes, glabrous. Leaves simple, opposite, succulent or fleshy and soft; petiole long, glabrous; blade ovate-lanceolate or ovate-elliptic, Inflorescence slender spike, pendulous; flower polygamous, usually monoecious; bracts of female spikes copular, adnate; bracteoles forming a cup around the ovary; fruiting spikes fleshy, interrupted. Stamens 2,1 on each side of ovary; filament thick, short, anthers reniform. Ovary globose; stigmas 3 or 4, rarely 5; styles persistent. Drupes sessile, across, red when ripe, drying black when unripe, pyriform or globose.

Traditional uses

Fruit are used for cough, cold, influenza.

Dosage –Oral 1-3 g per day (decoction, powder).



Habit flower Part used (fruit)

Figure 8. *Piper nigrum* L.

Scientific Name - *Santalum album* L.
Myanmar Name - Natha- phyu
English Name - Sandalwood
Family - Santalaceae
Part used - Wood (oil)

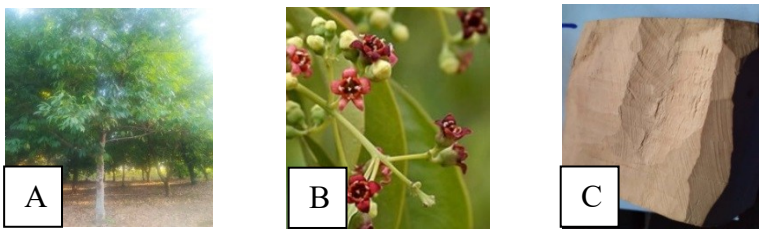
Outstanding characters

A small evergreen tree. Leaves opposite, pale brown when dry. Inflorescences paniculate cymes, small terminal or axillary cluster. Flower pale pink to reddish pink, bisexual, pentermerous. Stamen 5. Ovary globoid. Fruit a globose, freshly drupe, ripe, purple to black when ripe, with hard endocarp and crown with a scar, almost stalkless, smooth, single seed.

Traditional uses

The therapeutic properties of sandalwood oil headache, arthralgia, neck pain.

Dosage – Oral 1-4 g per day (decoction, powder).



Habit flower Part used (wood)

Figure 9. *Santalum album* L.

Scientific Name - *Saussurea lappa* C.B.Clarke.
Myanmar Name - Pan-nu
English Name - Costus root
Family - Asteraceae
Part used - Root

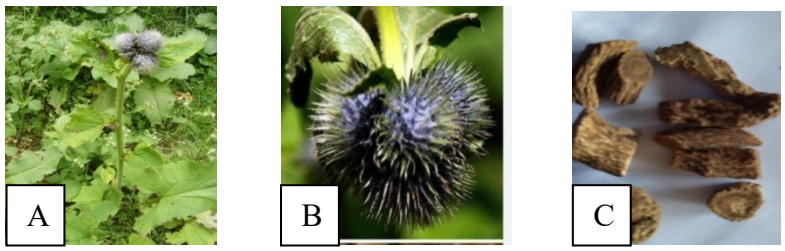
Outstanding characters

Stem robust, simple pubescent above. Leaves radical membraneous, scaberulous above glabrous beneath, irregularly tooth, petiole triangular, winged, cauline shoter petioled or sessile. Inflorescences heads subglobose, sessile, axillary or in a terminal cluster; bracts lanceolate numerous, purple, young pubescent; bristslies very long. Fruit achenes, compressed, tip narrowed, pappus double hairs, all feathery.

Traditional uses

Root has been used as a headache, arthralgia, neck pain, cough, cold, influenza, indigestion, constipation, flatulence nausea, abdominal pain.

Dosage – Oral 1-4 g per day (decoction, powder).



Habit flower part used (root)

Figure 10. *Saussurea lappa* C.B.Clarke.

Discussion and Conclusion

In this paper, 10 species belonging to 9 genera of 8 families are presented with the help of photographs. Among the 10 species, Zingiberaceae was Monocot. Santalceae, Lauraceae, Fabaceae, Malvaceae, Asteraceae, Euphorbiaceae and Piperaceae were Dicot.

In India, *Cinnamonmum tamela* L. are used in the treatment of fever, asthma, gastrointestinal problem (Tian *et al*, 2014). According to Traditional Myanmar practitioners, bark is used for indigestion, constipation, flatulence, nausea, abdominal pain. The leaves are used as a fragrance for cooking. These factors are in agreement with Tian *et al*, 2014.

In South African, *Euphorbia heterophylla* L. are used traditionally for gonorrhea, wound, diabetes, cancer, dysentery, asthma (E.J Mavundza *et al*, 2022). According to Traditional Myanmar practitioners, roots are used for flatulence, nausea, stomach problem, indigestion dysentery, jaundice, gonorrhea, digestive problems, tumors. These factors are in agreement with E.J Mavundza *et al*, 2022.

The fresh and dried root or underground stem of *Glycyrrhiza glabra* L. is useful in catarrhal affections and in irritations of the mucous membrane of the alimentary and urinary passages antibacterial actions as well (San Hla, 1960). According to Traditional Myanmar practitioners, roots are used for cough, cold, influenza, indigestion, constipation, flatulence, nausea, abdominal pain and this does not agree with San Hla, 1960.

The tubers of *Kaempferia galangal* L. were used in diuretic, carminative, stimulant and expectorant. Tubers reduced to powder and mixed with honey are given with much benefit in coughs and pectorals (Backer, 1963). According to Traditional Myanmar practitioners, rhizomes were used for treating headache, arthralgia, neck pain and this does not agree with Backer.

Mansonia gagei J. R Drumm were used for heart disease, gonorrhea, liniment and feet an itching sensation (AshinNagathein, 1969). In Traditional Myanmar practitioners, woods are used for treat headache, arthralgia, neck painand. These factors are in agreement with AshinNagathein, 1969.

Pterocarpus santalinus L. is prescribed as a diuretic when there is no fever. Powdered and mixed with milk, it is taken for bleeding piles. Decoction of the legume is useful in chronic dysentery (Ming & Lin, 2007). In Traditional Myanmar practitioners, wood powder are used for headache, arthralgia, neck pain, indigestion, constipation, flatulence, nausea, abdominal pain and not agree with Ming & Lin, 2007.

Piper longum L., In Chinese medicine, *Piper longum* L. is used for treatment of stomache, rhinitis, vomiting and headache (Gajure *et al*, 2021). In Traditional Myanmar practitioners, fruit are used for cough, cold, influenza and not agree with Gajure *et al*, 2021.

Piper nigrum L., black pepper is found largely and is cultivated (Southern India). Herb is commonly used to treat gastrointestinal disorders, malaria, respiratory diseases, cold and cough, skin cancer, scabies, nerve pain (Neeta rail *et al*). In Traditional Myanmar practitioners, fruit are used for cough, cold, influenza. These factors are in agreement with Neeta rail *et al*.

Santalum album L. has used as wood and oil in religious practices. Sandal oil is a popular remedy in gonorrhea, chronic bronchitis and cystitis, and gleet (Kartiker, 1935). In Traditional Myanmar practitioners, the therapeutic properties of sandalwood oil are headache, arthralgia, neck pain and not agree with Kartiker, 1935.

Saussurea lappa C.B.Clarke is a well- known and important medicinal plant widely used in several indigenous systems of medicine of the treatment of asthma, inflammatory diseases, ulcer and stomach problems (Hooker, 1879). In Traditional

Myanmar practitioners, roots has been used as a cough, cold, influenza, headache, arthralgia, neck pain and not agree with Hooker, 1879.

It was hoped that the present study will provide valuable medicinal information and traditional plant knowledge to other researchers.

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