Some Useful of plants as traditional medicine in Kyaing Tong Township

Thaw Maw Moe [1] Aye Thida Hlaing[2]

Abstract

Traditional medicine is widely practiced in Myanmar by majority of population either as an alternative or as a supplement to modern medicine. Health is the main important factor for human life. Plants have been used as medicine, diet and other useful. The present work deals with medicinal values of some wild and cultivated herbs, shrubs, climbers and trees in Kyaing Tong Township, Eastern of Shan State in Myanmar. There are many medicinal, food and other useful plants found in the study areas. In this investigation, 9 species were collected but 3 species were presented. All of them were wild, cultivated and ornamental. In the taxonomic point of view, these 9 species of eight families were shrubs, herbs, tendril climber, small tree and tree. All of them are determined morphological characters, traditional medicine of these plants are mentioned. Three selected species which are determined phytochemical constituent and traditional medicine uses were described. Preliminary phytochemical identified in the powdered leaves of these plants include alkaloids, flavonoids, carbohydrates, saponin, reducing sugar, phenolic compound, steroid and glycosides are present whilestarch, amino acid and terpenoid are absent. Especially Lwe traditional uses are described from the local people.

Key ward: Phytochemical constituents, Lwe traditional medicine

Introduction

Nature has been a powerful source of enormous medicine for thousands of years and number of modern drugs has been extracted and exploited from natural resource for its use in traditional medicine. Families of Apocynaceae, Plantaginaceae, Laminaceae, Bignoniaceae, Sapotaceae, Myrtaceae, Solanaceae and Passifloraceae, are the most well known of shrubs, small trees,tendril climbers, trees and especially herbs.It is a staple product which is important to human not only as a source of wearing dresses and that of cooking vegetable plants but also as a garden ornamental plants and medicinal uses (Heywood, 1978). *Tecoma stans* L. is family Bignoniaceae and ornamental plants. *Mimusops elengi* L. is belonging to family Sapotaceae and *Syzygium samarangense* (Blume.) Merr. & L. M. Perryis family Myrtaceae.

Globally, about 85% of the traditional medicines used for primary health-care are derived from plants (Wilson, 2004).Medicinal plants are used in household remedies and by practitioners of traditional systems of medicines, particularly in the developing world. At the same time, interest in traditional and alternative medicine in industrialized countries has grown rapidly. Local medicines are even preferred by some people to modern medicine, they are less expensive, but are often regarded as being more effective. In the present study, 9 species of plants from eight families were presented and described. Three species and are mainly their phytochemical constituents and traditional medicine. All cultures have long histories of the use of plants in folk medicine recorded in ancient herbals from which most of the present day pharmacopoeias have been derived (Padua & Lemmens, 1999).

Traditional medicine and ethnomedicinal information play an important role in scientific research, particularly when the literatures and field work data have been popularly evaluated (Azaizeh, 2003). Lwe ethnics live in WanSeng village near

[1] Dr., Associate Professor, Department of Botanym Kyaingtong University
[2] Demonstrators, Department of Botany, Kyaingtong University

Kyaing Tong Township, Shan State and eastern Myanmar. Lwe so called Loiis mountain tribe and a subgroup of Wa ethnic. Lwe ethnic live together inside longhouses which have separate fireplaces in the main corridor where they cook and store dried meat and there is small for each family.This paper reveals the relationships between the people and plants.

Materials and methods

Specimens are properly collected during field exploration. The field studied on both the season of flowering and that of fruiting periods.This paper was completed is seven phases are literature collection, specimen collection, identification, documentation, preparation, experimentation and interviewing with ethnic practitioners and local people. The collected specimens were identified with available literature such as Hooker (1885),Backer (1963, 1965), Lawrence (1969), Burmmitt (1992).

Preliminary Phytochemical Screening

The crude extracts were qualitatively tested for the presence of various secondary metabolites using standard established methods.The tests have been performed according to Trease and Evans, 2002).

Field work

Plants were collected and identified based on their utility in the study areas. For each plant species, the outstanding characters, the plant parts used and the folk used are given. According to practitioners and interviewers, the plant parts used such as leaves, stems, flowers, roots and the whole plant were recorded. The pharmaceutical form, such as cooked, decoction, juice, fresh juice, paste, maceration such as, fraction, oral administration were also recorded. Analyses of ailments recorded from the interview with semi-structured questionnaires with ethnic practitioners and local people.

Table (1) A questionnaire datasheet of interview

Categories	**Output data from interview**	
Name of the informant		
How old are you?		
Do you use herbal medicine?	**Yes**	**No**
Local name of species		
How many medicinal plants are familiar with you?		
How are these medicinal plant prepared to use?	**Procedure** **1.** **2.** **3.** **4.** **5.** **6.**	
Which does? Fresh or dried?	**Fresh**	**Dried**
What plant used for which ailment?		



Fig.1.*Mimusop selengi* L. Fig.2.*Syzygium samarangense*


Fig.3.*Tecoma stans* L.


Fig.4. *Plantago major* L.


Fig.5. Solanum torvum Swartz (Blume.)Merr.&L.M.Perry.



Fig.6.*Tectona grandis* L. Fig.7.*Thevetia peruviana* K.Schum.


Fig.8. *Passiflora edulis* Sims.


Fig.9. *Nerium indicum* Mill


Fig.10. Interviewing with Shan practitioner


Fig.11.Interviewing with Lwe practitioner


Fig. 12.Interviewing With Akha practitioner


Fig. 13. Interviewing with Lahu practitioner

Results

In the present investigation, 9 species were recorded and 3species were presented.The study morphology of these plants characters was present.

All of them, especially three species are *Mimusopselengi* L. *Syzygiumsamarangenese* (Blume.) Merr .& L.M.Perryand *Tecomastans* L. are phytochemical analysis. Qualitative chemical tests showed the presence of various phytoconstituents. The results of the study have shown that these still depend on traditional medicinal plants in Kyaing Tong area.

Table (2)Morphological characters of collected species

No.	Scientific name	habit	leaves	inflorescence	Flower	Fruit type
1.	*Mimusops elengi* L.	medium-tree	simple	axillary	Creamy white	berries
2.	*Syzygiumvsamarangense* (Blume.) Merr. & L.M. Perry.	tree	simple	axillary or terminal cymes	Yellowish white	baccate
3.	*Tecoma stans* L.	Small tree	simple	terminal raceme	Bright yellow	capsule
4.	*Plantago major* Linn.	herb	simple	axillary	Pale green	-
5.	*Solanum torvum* Swartz.	shrub	simple	dichotomous raceme	white	berries

6.	*Tectona grandis* L.	tree	simple	paniculate dichasial cyme	Creamy white	drupe
7.	*Thevetia peruviana* K. Schum.	Small tree	simple	axillary mix cyme	Light yellow	drupe
8.	*Passiflora edulis* Sims.	tendril climber	simple	axillary and terminal	white	berries
9.	*Nerium indicum* Mill.	Shrub to small tree	simple	terminal paniculate cyme	pink	follicle

Table (3) Tribe name and traditional medicinal uses of collected species

No.	Scientific Name	Lwe Name	Shan Name	Akha Name	LahuName	Part use	Diseases
1.	*Plantago major* Linn	Kyarsana	Yarinrit	Saguraga	Lalywel	Leaves	Malaria, skin diseases, hypertension
2.	*Solanum torvum* Swartz.	Makhae	Markhape	Sihara	Marcheli	Leaves, flower,fruit	rheumatism, skin disease, tuberculosis
3.	*Tectona grandis* L.	Maisaik	Maisaik	Pasaerbaw	Maessuphar	Leaves, wood, bark	wound, skin diseases, rheumatism
4.	*Thevetia peruviana* K. Schum.	Mautsame	Manklong	Pailum	Makpung	Leaves	skin diseases
5.	*Passiflora edulis* Sims.	Maphakae	Maphakae	Arbawalla	Anarcarsi	Leaves, flower, root	wound, diarrhea
6.	*Nerium indicum* Mill.	Nautkhaw	Ortanaw	Homlun	Nautkhaw	Leaves, flower, fruit	scabies, skin diseases

*Preparation: Decoction, Paste, Dried, Grilled, Juice, Pressed, Macerated

Table(4) Tribe name of three species

No.	Scientific Name	Lwe Name	Shan Name	Akha Name	Lahu Name
1.	*Mimusops elengi* L.	Paukloas	Nawtkhie	Maekhi	Maesip
2.	*Syzygium samarangense* (Blume.) Merr. & L. M. Perry.	Marchunphu	Marchunphu	Pseudo apple	Meikohm
3.	*Tecoma stans* L.	Maikecam	Maikyawt	Phakmae	erchushay

Table (5) Traditional uses of three species ofLwe ethnic

No.	Scientific name	Uses
1.	*Mimusops elengi* L.	The leaves, rice grain and water with chop of Pinus wood is mixed for paste cure for crack bone at least one week.The leaves are mixed with a cup of half rice, Leaves of *Tecoma stans* L. and a little alcohol with mixed to be pounded form paste. After that, painful parts around the broken bone tightly covered with these paste materials. And also can make to relieve rheumatic joint of the body.
2.	*Syzygium samarangense* (Blume.) Merr. & L. M. Perry.	The leaves used as tea and possible supplement for diabetes patients. The leaves and fruits are mixed with water and coconut oil to form paste are applied for tumors. The leaves are made warm by exposure to fire, fore and applied on the wound, sunburn and elephant pimple. The leaves and mixed with betel leaves are chewed for cough. Dried leaves put in water for chilblains.
3.	*Tecoma stans* L.	The leaves used as an antidote for snake bite. Leaves of *Solanum torvum* Swartz., *Nerium indicum* L. and *Tecoma stans* L. Was mixed with rice water form paste to cure crack bone within one week for young and then above the 25 years to 15 days. The roasted leaves are put into hot boiled water and drink like green tea. Such as kind tea is taken especially in fever for malaria. The leaves with leaves of *Passiflora edulis* Sims are decoction to bath to treat measles. Leaves and salt to paste and then into anus to relieve fever especially for children.

Table(6)Preliminary phytochemical analysis of three species

No	Test	Extract	Test reagent	Observation	Results		
					Mimusops elengi	***Syzygium samarangense***	***Tecoma stans***
1	Alkaloids	1%HCL	Dragendroff reagent	orange ppt	+	+	+
2	α amino acid	H_2O	Ninhydrin	no ppt	-	-	-
3	Carbohydrates	H_2O	Fehling A Fehling B	reddish brown ppt	+	+	+
4	Flavonoids	EtOH	HCL Magnesium tannin	pink ppt	+	+	+
5	Glycosides	H_2O	Sodium hydroxide	yellow ppt	+	+	+
6	Phenols	H_2O	10% $feCl_3$	blue or green ppt	+	+	+
7	Reducing sugar	H_2O	Benedicts solution	reddish brown ppt	+	+	+
8	Saponins	H_2O	Distilled water	frothing	+	+	+
9	Starch	H_2O	Iodine	no ppt	-	-	-
10	Steroids	P.E	$CHCL_3$ + Conc: H_2SO_4	blue green ppt	+	+	+
11	Terpenoids	P.E	$CHCL_3$ + Conc: H_2SO_4	no ppt	-	-	-

Fig. 30 Phytochemical test of three species

Discussion and Conclusion

Medicinal plants occupied an important position in the socio-cultural, spiritual and medicines are of rural people of KyaingTong area. Predominantly use plant-based raw materials in most of their preparations and formulation. Demand for medicinal plant, is increasing in both developing recognition of natural products, being non narcotic, have fewer side effects, easy availability and at affordable prices.

Ethno botany deals with the direct relationship of plants with man. In addition, ethnobotany contributed many beneficial things such as food, shelter, fodder and Non-Timber Forest Products (NTFPs). Traditional medicine is widely practiced in Myanmar by the majority of the population either as an alternative or as a supplement to modern medicine. The social group and traditional communities that have generated the knowledge of traditional medicine in Myanmar include Buddhist monks, sesayas (local doctors), ambulating medicine men, ambulating drug traders and professional drug collectors.

In the taxonomic study, the members of these families were investigated by the habit, leaves, inflorescences, flowers and fruits. *Tectona grandis* L.**,** *Mimusops elengi* L. and *Syzygium samarangense* (Blume.) Merr. & L. M. Perry are tree, *Thevetia peruviana* K. Schum and *Tecoma stans* L. are small trees, *Solanum torvum* Swartz and *Nerium indicum* Mill are shrubs but found in *Plantago major* Linn is herbs and *Passiflora edulis* Sims is tendril climber. For each species, the scientific name, ethnic name, the family it belongs to, brief and concise botanical characteristics for identification.These characters are agreed with (Lawrence, 1969, Hooker, 1885, Burmmitt, 1992).

In one of them of our field survey we present an ever green plant namely *Mimusops elengi* L. or star flower trees. The leaves, rice grain and rice water with chop of Pinus wood are mixed for the paste to cure for crack bone at least one week.

After one week, with warm water is mixed with leaves used. The decoction of leaves (half of cup) is orally twice a day for diabetes.

Rekha, (2011) reported that the leaves of *Mimusops elengi* L. contain glycoside, flavonoid, tannin, saponin, alkaloid, carbohydrate, phenol and reducing sugar.This species has significant antihyperlipidermic effect owing to its ability to reduce the levels of total cholesterol, triglyceride and increasing the level of HDL (Dewi, 2017). Anticholesterol activity of leaves of *Mimusops elengi* L., extract in the water be tested by in vivo method (Gami, 2007).

The second species is Wax apple; this plant is grown in around the Naung Tong Lake.The leaves used as tea and possible supplement for diabetes patients. The leaves and fruits are mixed with water and coconut oil to form paste are applied for tumors. The leaves are made warm by exposure to fire, fore and applied on the wound, sunburn and elephant pimple. The leaves and mixed with betel leaves are chewed for cough. Dried leaves put in water for chilblains.

The leaves and fruits can be used to treat acne, blood pressure and several inflammatory conditions, such as sore throat and used as carminative, diuretic, skin diseases, wounds and astringent diarrhea (Halim, 2017). This leaves contain flavonoid, glycoside, saponin, alkaloid, reducing sugar and phenolic compound (Shen, 2014).

The third species is *Tecomastans* L. This species are widely grown in Kyaing Tong as an ornamental on fences and trellises because of its showy and yellow flowers. The plants are commonly cultivated in roadsides and garden as ornamental. Leaves of *Solanum torvum* Swartz., *Nerium indicum* Mills. And *Tecoma stans* L. were mixed with rice water form paste to cure crack bone within one week for young and then adult the 25 years to 15 days. The leaves as an antimalarial purpose mostly when they had malaria. The leaves with leaves of *Passiflora edulis* Sims are decoction to bath to treat measles. The leaves and roots to cure stomach ulcer.

Leaves of *Tecoma* have been documented in Ayurvedic literature for treatment of various ailments especially gastralgia (Nidhi,2010). The gastro protective properties of the plant leaves may be attributed to the polyphenolic compound like flavonoid that is present in the leaves. Thus, it supports the traditional use of *Tecomastans* L. is treatment of gastrointestinal disorders. For this ethno botanical usage, the leaves thoroughly washed, dried in the sunshade and pounded, when the powder with mixed honey to relieve stomach ulcer (Kanchana, 2011).

The human breast cancer cell line (Michigan Cancer Foundation-7 (MCF 7) was obtained from Natural Centre for Cell Science (NCS). Pane and grown in Eagles Minimum Essential Medium (MEM) containing 10% Fetal bovine Serum (FBS), Penicillin and Streptomycin in a humidified atmosphere of 5% CO_2 at 37°C. Cancer is one of the ailments which cannot be completely subdued by chemotherapy (Amburaj,2016). *Tecoma stans* L. aqueous extract (TAE) of leaves is widely used as a traditional antidiabetic remedy in Mexico (Amburaj,2016).

During the survey period, the medicinal plants information has been gathered from the tribal practitioners and non-practitioners using semi-structured questionnaires on the types of ailment cured by the traditional medicine plants and plants parts used in curing malaria, skin wound and skin diseases, tumour, hypertension. The questionnaires allowed describe responses on plantsprescribed, such as plant parts used, medicinal uses, detailed information (preparation-ie. decoction, paste, fresh juice, powder, etc).

Medicinal plants were used by the local people because of the knowledge handed down from generation to generation. Moreover, these medicinal plants provided the material benefits for local people. In serious cases people lived in those areas would not be treated in time. Thus, they had to depend on the medicinal plants the knowledge and their uses.

In fact the present may be a preliminary partially fulfilled to study on medicinal plants of Kyaing Tong Township. But further research should be made to obtain more confirmation on the usage of medicinal plants.

It was concluded that the selected plants possess various potent bioactive compounds and is recommended as a plant of phytopharmaceutical importance. The Government of Myanmar encourages the practice of traditional and use of indigenous medicine and also to enhance the Knowledge University of Traditional Medicine was founded and training programs for planting, propagation and utilization of medicinal plants are established by governmental and private sectors in Myanmar. Continuous research and studies of potential herbs and medicinal plants are important as natural products from plant origin will continue to be in demand.

Acknowledgements

I would like to express my deepest gratitude to Dr. San San Mar, Rector, Dr Khin San San Win, Pro Rector, Kyaing Tong University, for their kind permission to carry out this program. I would like to express my appreciation Dr ThandaSoe, Professor and Head, Department of Botany, Kyaing Tong University and Dr MyatMyat Moe, Professor and Head, Dr KhinLattLatt Mon, Professor, Department of Botany, Dagon University, for their invaluable suggestion in this paper and all the traditional practitioners and local people and interpreters for their prompt assistance and invaluable information for this work.

References

Azaizeh, H., Fulder S., Khalit K. & Said O. (2003). Ethnomedicinal knowledge of localArabPrctitioners in Middle East Region, Fitoterapia

Backer, C. A. & Van Den Brink, R. C. (1963).Floral of Java.(Vol.1). The Netherland: N.V.P. Noordhodff-Groningen.

Backer, C. A. & Van Den Brink, R. C. (1965).Floral of Java.(Vol. II). The Netherland: N.V.P.Noordhodff-Groningen.

Bharat Gami. (2007). Evaluation of pharmacognostic and properties of *Mimusopselengi* L. PhD. Thesis.Veer Narmad South Guijarat University.

Burmmitt, R.K. (1992). Vascular Plants Families and Genera.Royal Botanical Garden, Kew, Printed and bound by Whistable Litho. Ltd., Great Britain.

Chien- Chang Shen. (2014). Chemical constituents of*Syzygiumsamarangense.*National Research Institute of Chinese Medicine, Taipei, Taiwan.

FouziaHanimabdualHalim.(2017). Formulation and Evaluation of Natural anti- Acne cream containing *Syzygiumsamarangense.*Faculty of Pharmancy and Health Sciences, University Kuala Lumpur, royal College of Medicine, Malaysia.

G. Amburaj, M Marimuthu, V. Kajasudha and Dr. R. Manikandan. (2016). In Vitro anti-cancer activity *Tecomastans* against human breast cancer yellow elder. AVVMSP.College.Poondi.Tamil Nadu.

Heywood, V.H. (1978). Flowering plants of the world.Oxford University, Press London.

Hooker, J. D. (1885). The Flora of British India.(Vol. 3).England: L. Reeve & Co;Ltd.

Kanchana A, Balakrishna M. (2011). Anti-cancer effect of saponins isolated from *solanumtrilobatum* leaf extractand induction of apoptosis in human breast cancer celllines. International Journal of Pharmacy and Pharmaceutical Science.

NidhiMathur, G. C. Jain &Geeta. (2010). Effect of *Tecomastans* L. leaves on the Reproductive system of male Albino rats. International Journal of Pharmacology, Science Alert. India.

Padua, L.S.de., N. Bunyapraphatsara and R.H.M.J. Lemmens. 1999**.** Plant Resorcuces of South East Asia. No.12, Bogar Indonesia.

Rekha. B., SB. Harshith. (2011). Chemistry and medicinal properties of the Bakul.A review. Food research International.

Trease, G. E. & Evans, W. C. (2002).Pharmacognosy.(11th ed.). London: Cassell Collier Macmillan Publishers Ltd.

Tristantini, Dewi. (2017). Anti-cholesterol activity test of Tanjung., *Mimusopselengi* L. leaf extract in the water using in vivo method in mice, DDY srain. Department of Chemical Engineering, Universities Indonesia, Kampus UI Depok, West Java. AIP Conference Proceeding.

Wilson, E.O. (1995). Wildlife: Legions of the doomed.