

Medicinal Uses of Some Wild Orchids in Taunggyi District of Southern Shan State and Taungoo District

Moe Sandar Shein¹, Khin Swe Swe Htun², Sandar Hlaing³

Abstract

This recent study is concerned with some medicinal uses of wild orchids in Taunggyi District of southern Shan State and Taungoo District. Some selected medicinal wild orchids are neigh valuable for cure of some diseases. Other countries, especially China and India used as traditional medicine since ancient time. In this paper, some medicinal orchids were used to prevent some cancer diseases and tonic. All selected medicinal orchids were collected from some reserved forests, namely Taunggyi reserved forest, Yee Aye reserved forest and Taungoo District. In this paper, (5) genera and (11) species have been recorded. Genera namely *Acampe*, *Arundia*, *Dendrobium*, *pholidota* and *Rhynchostylis* were collected. Among some orchids, genus *Dendrobium* and *Rhynchostylis* are traditional herbal medicine and anticancer values. All collected species were described with color photos of their natural habitat with inflorescence and also reveals their medicinal uses and used parts of selected medicinal orchids.

Keyword: Taunggyi District, Wild Orchids, medicinal uses

Introduction

In this recent study, some medicinal wild orchids were collected in Taunggyi District and some orchids were also from subtropical region, Taungoo District. Family Orchidaceae stretch out of the world with the exception of ice capped and desert region. Some orchidologist predict about 35,000 species around the world (Seidenfadan, 1992). Orchids exhibit incredible range of diversity in shape, size and color of their flowers. They are important aesthetically, medicinally and also regarded as ecological indicators (Joshi et al., 2009). Though orchids are grown primarily as ornamental, many are used as herbal medicine, food and other cultural value by many different cultures and tribes in the different parts of the world (Khasim and Rao, 1999; Kasulo et., (2009). The history of orchid might start with their uses in medicinal purposes. Chinese were the first to cultivate and describe orchids (Jalal et al., 2008). The Han dynasty, 200 BC to 200 AD and are still used as a strengthening medicine and to cure varieties of diseases (Chen et al., 1994). Shi-hu is a term used to described all *Dendrobium* and some *Flickingeria* species in China.

In this paper, 10 species of selected medicinal wild orchids, *Acame papilosa*, *Arundina gramifolia*, *Dendrobium dixanthum*, *Dendrobium crepidatum*, *Dendrobium fimbriatum*, *Dendrobium chrysotoxum*, *Dendrobium nobile*, *Dendrobium moschatum*, *Pholidota articulate*, *Rhynchostylis retusa* were recorded their uses and part used. Some species of genus which are *Dendrobium nobile* L., *Dendrobium fimbriatum* Hook and *Pholidota articulate* Lindl. have anticancer properties. Some medicinal orchids were used in antibacteria, tonic and dislocated in bone.

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Results

No.	Scientific Name	Parts Used	Medicinal Uses
1	<i>Acame papilosa</i>	Root	Paste id used to treat fractured dislocated bones
2	<i>Arundina gramifolia</i>	Rhizome	Antibacteria, root decoction is used for controlling diabetes, tumor hyperlipasis and hepatitis
3	<i>Dendrobium dixanthum</i>	Stem	Stem is widely used in treatment of blood circulation, cardinal system and throat sore. (herbal tea, drinks permitted by government Drug and Food Administration) Stem powder oral taking, cooking with chicken and meet etc.
4	<i>Dendrobium crepidatum</i>	Pseudobulb	Paste is used in fracture and dislocated bone
5	<i>Dendrobium fimbiatum</i>	leaves	Either boiled or soaked in warm used tonic, promote the production of body fluid, also be applied on fracture area to set the crack bones.
6	<i>Dendrobium chrysotoxum</i>	Pseudobulb, and leaves	leaves may be boiled and resultant liquid extract used in tonic and antipyritic. The body of plants shows anti-inflammatory activities.
7	<i>Dendrobium nobile</i>	Stem and leaves	dried powder, aqueous extract used as tonic to nourish stomach, promote the production of body fluid (Lui and Zhao, 2003) In Vietnam pulmonary tuberculosis, fever and anorexia (Chauhan, 1999) help in immune system. Leaves are used to treat rheumatisum.
8	<i>Dendrobium moschatum</i>	Pseudobulb	Paste is used to treat fractured dislocated bones
9	<i>Pholidota articulata</i>	Whole parts, Roots, fruit	Whole parts used as tonic. Root powder is used to treat cancer. Juice berries are used to treat skin ulcers and skin eruption.
10	<i>Rhynchostylis retusa</i>	Root	Herbal medicine, 1 gm of the paste is taken orally with water on and empts stomach twice a day for seven days to cure blood dysentery (Das et al, 2008) and also used as emollient and leaf paste is applied externally to cure wounds (Dcorani and Sharma, 2007)

Classification of Subfamily

Subfamily	Tribe	Subtribe	Genus	Species	Myanmar Name
Epidendroideae	Malaxideae		<i>Arundina</i>	<i>graminifolia</i>	ဝါးသစ်ခွ
	Epidendrae	Dendrobiinae	<i>Dendrobium</i>	<i>dixanthum</i>	ရွှေဝါကလေး
				<i>nobile</i>	ဒေါင်းဖြိုးသစ်ခွ
				<i>fimbriatum</i>	အာမဲလက်တံတို
				<i>crepidatum</i>	ဝနီင်နဘေးပေါက်
				<i>chrysotoxum</i>	ရွှေတူမောက်ခမ်းဝါ
				<i>moschatum</i>	ဝါဆိုပန်း
			<i>Pholidota</i>	<i>articular</i>	-
<i>Vandoideae</i>			<i>Acampe</i>	<i>papillosa</i>	မီးမလောင်ပန်း
			<i>Rhynchostylis</i>	<i>retusa</i>	ကြောင်ဖြိုးနံ့သာ

• ***Arundina graminifolia* (D.Don) Hochreutiner**



***Arundina graminifolia* (D.Don) Hochreutiner**

Terrestrial. Stem tall, Stem enclosely by leaf sheath. Leaves linea acuminate, leathery sheathing at the base. Inflorescence erect, racemose, 2-4 flowered. Flower large, white with purple lip, opening in succession with broadly ovate acute floral bracts. Sepals white, elliptic lanceolate equal with lateral sepals. Petals white, larger than the sepals, ovate acute. Lip white with rose purple tinged, margin undulate, divided at apex, rose lip striped on the upper portion, pale yellow at the base, embracing the column. Column long, slightly curved, 2.00 cm long. Pollinia 8.

Local Name - Wah-Thit- Kwa (ဝါးထိတ်ခွေ)

Flowering period - June to November, **Occurrence** - Hopone Township (N 18 ° 46'- E 96° 17')

Part used - Root and Rhizome

Uses - Root is used to relieve body ache (**Bijaya Pant, 2003**), Antibacteria, root decoction is used for controlling diabetes, tumor hyperlipasis and hepatitis (**Guitierrez, 2010**).

(2) *Dendrobium dixanthum* Rchb.f



***Dendrobim dixarthum* Rchb.f**

Epiphyte, stem long slender, yellow, erect. Leaves lanceolate. Raceme on the leafless stem. Flower golden greenish yellow 2-4 flowers, 3-5 cm wide. Sepal oblong subacute, petals broder obtuse ciliolate. Lip orbicular from short convolute base, deeper yellow blotch in the centre, mentum subglobose.

Myanmar Name - Shwe Wah kalay (ရွှေဝါကလေး)

Flowering period - March to April, **Occurrence**- Bon Tang reserved forest Oat twinTownship, Tangoo district. (N 18 ° 47'- E 96° 14')

Part used - Pseudobulb

Uses - Stem is widely used in treatment of blood circulation, cardial system and throat sore, herbal tea, drinks permitted by government Drug and Food Adminnistration. Stem powder oral taking, cooking with chicken and meet etc.(Hong xiaoxu,2016).

(3) *Dendrobium nobile* L.***Dendrobium nobile* L.**

Epiphyte. Stem erect, stout, compressed, golden yellow in mature, about 15-20cm. Leaves oblong obliquely notched, glabrous. Inflorescence with 2-3 flowers on short peduncle with ovate lanceolate floral bract. Flower large, white with purple tinged and purple pedicel, about 4.00-5.00cm across. Dorsal sepals oblong, obtuse at apex, lateral sepals similar with acute apex, mentum conic. Petal much broader than the sepals, broadly ovate with veins. Lip subsessile, broadly acute, densely pubescent on the both side surfaces, margin ciliate, recurved, shortly convolute at base, column short slightly dilated at the base, anther cap conic, with densely papillose. Pollinia 4, oblong.

Local Name - Down Mee Thit Kwa (ဒေါင်းမြီးသစ်ခွံ)

Flowering period - April to May

Part used - Pseudobulb

Uses - Dried powder, aqueous extract used as tonic to nourish stomach, promote the production of body fluid (Lui and Zhao, 2003) In Vietnam pulmonary tuberculosis, fever and anorexia (Chauhan, 1999). Anticancer, help in immune system. Leaves are used to treat rheumatism.

(4) *Dendrobium fimbriatum* Hook. (Are-mae-lat-ta-to)**(4) *Dendrobium fimbriatum* Hook.**

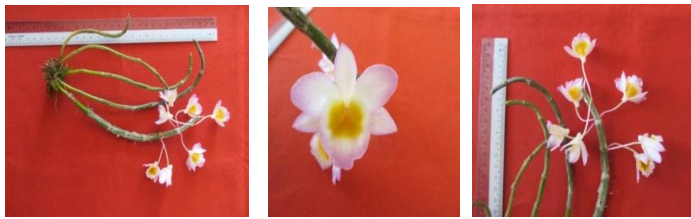
Epiphyte, very showy evergreen species. Stem stout and erect about 25-30.00 cm long. Leaves oblong lanceolate acuminate at apex, glabrous. Inflorescence pendulous, raceme, blooms simultaneously with 8-12 flowers, several basal leaves at the base. Flower brightly golden yellow, spreading delicate texture, fragrant, about 3.5 cm across. Dorsal sepal oblong ovate with 5 veins, margin entire. Lateral sepals ovate lanceolate, mentum rounded. Petals erose, subequal, oblong elliptic. Lip orbicular, equally deeply fringed with purplish red stipe on the both side at the base, densely pubescent on adaxilly, truncate at the base. Column short with foot. Pollinia 4.

Local Name - Arme let tan to (အာမဲလက်တံတို့)

Flowering period - April to May

Part used - Pseudobulb

Uses - Either boiled or soaked in warm used tonic, anticancer, promote the production of body fluid, also be applied on fracture area to set the crack bones (Hong xiaoxu, 2016). Used in liver upset, nervous debility (**Bijaya Pent, 2013**).

(5) *Dendrobium crepidatum* Lindl & Paxton***Dendrobium crepidatum* Lindl & Paxton**

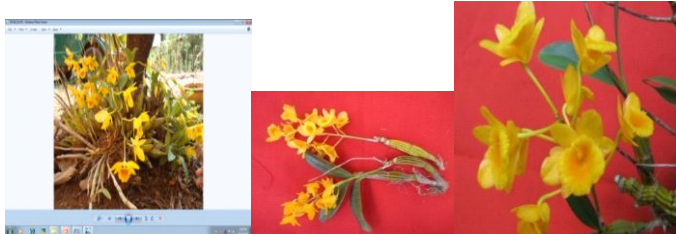
Epiphyte. Stem striate, covered with lumen like as white line, pendulous, about 1ft. Leaves oblong acute, glabrous. Raceme short with 2-4 flowers from leafless stems. Flower white expanded about 3.4 cm. Sepals oblong, acute, white, tinged with pink. Petals obovate, broader than the sepals, glossy waxy texture, white tipped with purple. Colum curved. Pollinia 4. Lip rounded cordiform pubescent with yellow in the basal half white edges with pink in front, thick edges at base unite in a transversely ridges on each side

Myanmar name - Ga-Naing-Nabay k (ဂနိုင်းနဘေးပေါက်)

Flowering period- March -April **Occurrence** - Yee Aye Reserved forest, Taunggi District, N 18 ° 4' 83"- E 96° 13' 45")

Part used - Pseudobulb

Uses - Paste is used in fracture and dislocated in bone (**Bijaya Pent, 2013**).

(6) *Dendrobium chrysotoxum* Lindl. (Shwe-tu-mout-kham-wa)***D. chrysotoxum* Lindl.**

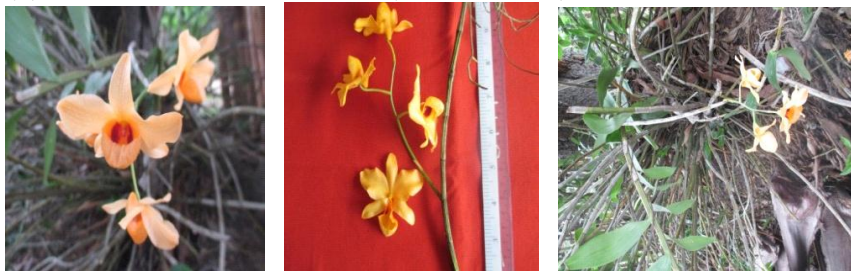
Epiphyte, evergreen species. Stem stout, short, club-shaped with deeply furrowed, clustered from a slender base, yellowish when old, about 26-30 cm long. Leaves oblong acute, leathery. Inflorescence obliquely erect or slightly drooping with many flowers, well spread about 30cm long. Flowers golden yellow about 2.5cm across. Sepal oblong elliptic, petals broadly obovate. Mentum insignificant. Lip suborbicular with finely imbricate at margin. Very deep orange at the base, concave. Column short. Pollinia 4 in pairs, waxy.

Local Name - Shwe- tu-mout-khan-war (ရွှေတူမောက်ခမ်းဝါ)

Flowering period - April to May, **Occurrence** - Bon-Toung reserved forest. Oat twin Township. (N 18 ° 46'- E 96° 17')

Part used - Pseudobulb and Leaves.

Uses - leaves may be boiled and resultant liquid extract used in tonic and antipyretic. The body of plants shows antiinflammatory activities (**Bijaya Pent, 2013**).

(7) *Dendrobium moschatum* (Buch. Ham.) Sw.*Dendrobium moschatum* (Buch. Ham.) Sw.

Epiphyte. Stem brown slender. Leaves linear oblong, reddish green. Raceme 5-6 lax flowers arising on the top of the stem. Flower yellowish orange, large showy, about 7.00 cm long and wide. Sepals ovate-obtuse. Petals broadly rounded, larger than the sepals, glabrous. Edge of lip incurved forming a pouch, yellow with two maroon blotch at epichile and long ciliate veings, outside pubescent on incurved edge. Column long with red spot. Anther 2-celled. 4 pollinia.

Myanmar Name - Wah-so -Pan (ဝါဆိုပန်း)

Flowering Period - May to June, **Occurrence**- Bon -Taung reserved forest Oat Twin Township, Taungoo District.(N 18 ° 56'- E 96° 25')

Part used - Pseudobulb

Uses - Paste is used totreat fractured discolated bones (**Bijaya Pant,2013**)

(8) *Pholidota articulate* Lindl*Pholidota articulate* Lindl.

Epiphyte. Pseudobulb, long cylindrical with grooved, green or brown, about 8-10.00 cm long and 0.8-1.00 cm wide. Leaves two, oblong lanceolate with prominent veins, slightly coriaceous. Inflorescence terminal, short, erect drooping with cylindrical peduncle green. Flower creamy green, about 1.00 cm across; floral bracts cymbiform, large, pale brown, tip acute, about 1.00 cm long 0.8 cm wide. Dorsal sepal and lateral sepals are equal in size and shape, ovate acute, concave, not expended, 0.7 cm long and 0.5 cm wide. Lateral petals are smaller than the sepals, ovate acute. Lip saccate at hypochite with 5 longitudinal keels, expended at epichile, which bears bilobed, each lobe rounded, recurved, broader than the long, slightly twisted, pale yellow patch at base. Colum shortly clavaterasellum triangular. Pollina 4 wavy.

Myanmar Name - Kwyet-hme-pan-myo-kywe (ကြက်မြီးပန်း)

Flowering period - April to May, **Occurrence**, Kalaw Township, Yee- Aye reserved forest. N 20° 36" 2.5", E 96° 32' 1.3",

Part used - Whole parts, Roots, fruit.

Uses -Whole parts used as tonic. Root powder is used to treat cancer, Juice berries is used to treat skin ulcers and skin eruption (Hong xiaoxu, 2016), ((**Bijaya Pent, 2013**)).

(9) *Acampe papillosa* (Lindl.) Lindl.***Acampe papillosa* (Lindl.) Lindl.**

Epiphyte, leaves fleshy strap-shaped, bilobulate at apex. Inflorescence short subumbellate, branching with dense. Flower non-resupinate, lip trilobe, midlobe is white with purple spots on the inner part, uncurved, wavy, sidelobe not much protruding, distally connected by a transverse rounded wall at the base of epichile, horn with columns. Pollinia 4 in 2 pairs.

Myanmar Name -Mee-ma-long-pan (မီးမလောင်ပန်း)

Flowering Period -December to January, **Occurrence**-Taungoo urban area (Taungoo District) (N 18 ° 56' E 96 ° 25'). (Seidenfaden, 1992)

Part used - Root

Uses - Paste id used to treat fractured dislocated bones) (Bijaya Pant, 2013. Root is used for rheumatism, Sciatica, neuralgia, Syphyllis and uterine diseases (Gruyter, 2014).

(10) *Rhchostylist retusa* (L.) Blume***R. retusa* (L.) Blume**

Epiphyte. Stem stout leafy stem. Leaves curved, channelled unequally truncate bilobed at the ends. Inflorescence axillary raceme, long pendulous, cylindrical. Flower dense white blotched with violet. Sepals ovate, lateral sepals orbicular-ovate, obtuse, petals oblong. Lip usually cuniform, rounded, entire, the lip with a compressed bluntish spur.

Myanmar Name - Kyaung-me-nant-tha (ကြောင်မြီးနံ့သာ)

Flowering Period - July to September, **Occurrence**- Taungoo Distric. (N 18 ° 56'- E 96° 45')

Part used - Root and whole plant

Uses - Herbal medicine, 1 gm of the paste is taken orally with water on an empts stomach twice a day for seven days to cure blood dysentery (Das et al, 2008) also used as emollient and leaf paste is applied externally to cure wounds (Dcorani and Sharma, 2007), leaves are used to treat rheumatism, Root juice is applied to cuts and wounds (Bijaya Pant, 20013).

Discussion

Orchids have been used in many parts of the world in traditional healing system as well as in the treatment of a number of diseases since the ancient time. Though Orchidaceae is regarded as a largest family of plant kingdom, few studies have been done regarding of their medicinal properties. Linking of the indigenous knowledge of the medicinal orchid to modern research activities provides a new reliable approach, for the discovery of novel drugs much more effectively than with random collection (Bijaya Pant, 2013). In this paper, some medicinal wild orchids were collected in Taunggyi District and some orchids were also from subtropical region, Taungoo District. 10 species of selected medicinal wild orchids, *Acame papilosa*, *Arundina gramifolia*, *Dendrobium dixanthum*, *Dendrobium crepidatum*, *Dendrobium fimbriatum*, *Dendrobium chrysotoxum*, *Dendrobium nobile*, *Dendrobium moschatum*, *Pholidota articulate*, *Rhynchostylis retusa* were recorded their uses and part used. The present work listed five genera of medicinal wild orchids as follow; *campe* with one species, *Arundina* with one species, *Dendrobium* with 6 species, *Pholidota* with one species and *Rhynchostylis* with one species. In this paper, subfamily Epidendroideae, the rhizome of genus *Arundina* was used in antibacteria, diabetes, tumor, hyperlipasis and hepatitis, the pseudobulb of *Dendrobium dixanthum* was used widely in treatment of blood circulation and cardinal system. The pseudobulb of *Dendrobium crepidatum* was used in fracture and dislocated bone. The leaves of *Dendrobium fimbriatum* were used in tonic. The Pseudobulb and leaves of *Dendrobium chrysotoxum* were used in tonic and antipyretic. The whole plant of *Dendrobium nobile* were used in anti-cancer and tonic. The Pseudobulb of *Dendrobium moschatum* was used in fractured dislocation in bones. The whole plants of *Pholidota articulate* were used in tonic and treating cancer. In subfamily Vandoideae, the root of genus *Acame papilosa* was used in treating fractured dislocated bones and the whole plants of *Rhynchostylis retusa* were used in emapts stomach, blood dysentery and to cure wounds. In Myanmar, this species *Rhynchostylis retusa* was also used in traditional herbal.

In conclusion, some native valuable medicinal wild orchids have not been well-known to be used as medicinal plants. Only one genus *Rhynchostylis retusa* used only to cure earache as a traditional medicine. So, we should point out valuable medicinal orchids to treat some diseases.

References

- Bijaya Pant, (2013). Medicinal orchids and their uses: Tissue culture a potential alternative for conservation. Published by African Journal of plant Science.
- Dassanayake, M.D. (1981). A Revised Handbook to the Flora of Ceylon Published by Amerind Publishing Co. Pvt. Ltd., New Delhi.
- Dressler, R.L. (1927). The Orchids: Natural History and Classification
- Chen X., Liu., Z., Zhu GLang K., Ji Z., Luo Y., Jin X., Cribb P J., wood j.j., Gale S.W., Ormerod P., Vermeulen J.J., Wood H.P., Clayton D. and Bell A. Orchidaceae. In Flora of China, Vol-25.Wu,Z.Y.and P.H. Raven (Eds), Science Press Beijing and Missouri Botanical Garden,St.Louis.Pp.1-506.
- Hong xiaoxu,(2016). Brief Introduction of Chinese Pharmacopeia 2015, Vol. IV, Published by Strasbourg, France.
- Grand, B. (1966). The Orchid of Burma. Central press, Rangoon
- Gruyter De, (2014). Medicinal and Aromatic Orchids.
- Lawrence Osborne, (2017). The hidden power of Medicinal Orchid.
- Seidenfeden Gunna (1992) The Orchid of Indochina. Printed in Denmark. Aio Print Ltd., Odanse.
- Websites
- www.degruyter.com
- www.researchgate.net
- www.academic.oup.com