The Republic of the Union of Myanmar
Ministry of Environmental Conservation and Forestry
Forest Department

Study on Distribution and Medicinal Uses of Some Plant Species in Natma Taung National Park, Southern Chin State

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မွေးနေမှုအတွင်းရှိ အပင်မျိုးစိတ်များပျံ့နှံ့ေပါက်ေရာက်ပုံနှင့် ေဆးဖက်အသုံးဝင်ပုံများကိုေလ့လာခင်းမင့်မင့်စန်း(လက်ထားသုံးသန်းရာရှိ)

ထိုက်စံစိုး(ေတာအုပ်ကီး)

ယွန်းမီမီေကျာ်(သုံးသန်းလက်ထား(၃)

စာတမ်းအကျဉ်း

နတ်မေတာင် အမျိုးသားဉယျာဉ်အတွင်းရှိ အြမင့်ေပမတူညီေသာေနရာ(၃)

မျိုးရင်း(၄၂)မျိုး၊ မျိုးစု(၈၃)မျိုး၊ မျိုးစိတ်(၁၀၂)မျိုးတို့ကိုစုေဆာင်းခဲ့ပါသည်။

အများဆုံးမျိုးရင်းမှာ Asteraceae (11)ဖစ်ပီး အနည်းဆုံးမှာ Araceae, Alliaceae, Aristolochiaceae, Fagaceae, Geraniaceae တို့ဖစ်ပါသည်။

အသုံးဝင်းအသုံးြပုေသာအပင်အစိတ်အပိုင်းများတွင် အြမစ်(၂၇)ပင်၊ အရွက်(၂၆)ပင်နှင့် တပင်လုံး(၁၉)ပင်ကို အသုံးြပုနိုင်းေတွ့ရှိရပါသည်။

ထို့အြပင် အပင်များတွင်လည်း ပင်ေပျာ့(၆၂)%, ခုံပင်(၁၂)%၊ သစ်ပင်ငယ်(၇)%၊ သစ်ကပ်ပင်(၇)%၊ သစ်ပင်ကီး(၇)% နှင့် နွယ်ပင်(၆)%တို့ကို အသုံးြပုနိုင်းေတွ့ရပါသည်။

အပင်များ၏ အစိတ်အပိုင်းအသီးသီးကို အသုံးြပုရာမှ ေပျက်ကင်းနိုင်ေသာ ေရာဂါများအနက် အများဆုံးမှာ ေချာင်းဆိုးေရာဂါ၊ ၎င်းနှင့် ဝမ်းကိုက်ေရာဂါ တို့ဖစ်ကို ေလ့လာတင်ပထားပါသည်။

Study on Distribution and, Medicinal Uses of Some Plant Species in Natma Taung National Park, Southern Chin State
Abstract

A total of 102 plant species, belonging to 83 genera and 42 families were observed in study area. Among then, 76 species have medicinal value. The largest number of medicinal species came from Asteraceae (11), which was followed by Orchidaceae (8), Fabaceae and Ranunculaceae (5) and, (3) species of, Rosaceae, Rubiaceae, Gentianaceae, Zingibraceae, , (2) species of, Eriaceae, Violaceae, Scrophulariaceae, Smilaceae, Apiaceae, Buddlejaceae, Myricaceae, each species of Dipsaceae, Juglandaceae, Oleaceae, Symplocaceae, Plantaginaceae Taxaceae, Proteaceae, Acanthaceae, Amaranthaceae, Araceae, Alliaceae, Aristolochiaceae, Fagaceae, and Geraniaceae, etc.

Among the parts utilized for medicinal purposes roots (27), followed by leaves (26), the whole plant (19), flowers (8), Pseudo bulb (3), Rhizome (3) tuber (2), Bark (2), Stem (2), Young root (2), others are (1) etc. etc. were utilized. Herbs dominated the study area with herbs (62)%, shrubs (12)% , small tree (7)% , Epiphyte (7)% , tree (6)% , climbers (6)% . Various parts were used for the treatments of diseases/ailments such as cough (10), Fever (9), dysentery (8), followed by (7) species of inflammatory, diarrhoea. (6) species of skin, (5) species of stomachache, tonic, ulcer, (4) species of febrifuge, diabetes, indigestion, toothache, cut & wound. Moreover, (3) species of influenza, jaundice, malaria, cholera, expectorant, headache, and rheumatism are presented.

Key Words: Plant species, Medicinal uses
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Study on Distribution and, Medicinal Uses of Some Plant Species in Natma Taung National Park, Southern Chin State

1. Introduction

In worldwide, millions of people rely on medicinal plants for primary health care, and income generation for their livelihood. The properties of medicinal plants cover a marvelous involvement in the origin and advancement of many conventional herbal therapies. Asia has a long history of medicinal plant use in primary health care arrangements. Codified systems such as traditional Chinese medicine, Ayurveda, Siddha, Unani and Tibetan medicines are known to exist from time immemorial.

Some of the Asian plant species in the wild have been utilized in modern health care system. Reserpine from the roots of Rauvolfia serpentina or taxel from Himalayan yew (Texus wallichiana) have important pharmaceutical uses in Europe, North America and others. Due to overexploitation, some of the species in the wild are now considered as threatened / endangered and some of the nations are trying to control such action by imposing regulatory measures. Member countries of the Convention of International Trade in Endangered Species of Wild Fauna and Flora (CITES) have also established international trade controls for some Asian medicinal species.

Distribution and spread of many species is quite wide and the bioactive ingredients of medicinal value often vary under different agro-climate situations. Research efforts in many of the Asian plant species have made it possible to stabilize production base towards commercialization. (Ghoh, 2005)

Myanmar is still endowed with diverse forest resources. More than half of the country is covered with forests. Although a checklist by Kress et al. (2003) reported 11,800 species that spermatophytes, it is still far away to understand the flora of Myanmar because of the lack of specimens collected by national and international botanists throughout the country. Accordingly, the Ministry of Environmental Conservation and Forestry established the protected area systems (PAS including national parks and wildlife sanctuaries, and altogether 39 protected areas have been notified (NBSAP, 2011). Natma Taung (NMT) National Park as one of PAS and was founded in 1994 encompasses a well-preserved biota characterized by a range of forest communities and high plant species endemism (Mill, 1995).
It is very well known National park in Myanmar because of its diverse floristic composition and ample sources of habitats for wild animals as bird watching. The scenery of the park attracts people for recreation; anthropology can study the Chins’ culture and trekking to Mount Victoria, provide substantial opportunities for eco-tourism development.

Moreover, the majority of protected areas in NMT, is being situated in remote areas, where local communities living in or nearby are relatively poor and highly dependent on forest resources for their livelihood (Bryant, 1994). And the local households in these regions are relatively poor due to low return from poorly productive agricultural land, limited access to markets and low social services provided. Accordingly, forest products from surrounding forest areas and nearby protected area have become major livelihood sources providing subsistence and cash income for the households (Vedeld et al., 2004).

Therefore, the sustainability of the forest resources of the NMT national park is of crucial important and the documentation of the study of plant species diversity of the park is inevitable needed.

2. Objectives

The objectives of the study are:

- To collect, identify and document the plant species as permanent specimen for herbarium
- Development of information on uses and medicinal value of plant species

3. Literature review

Plant based herbal medicines have been used for thousands of years in many parts of the world. The therapeutic use of herbal medicines is gaining considerable momentum in the world during the past decade. Plant parts of medicinal plants include -whole plant, roots, leaves, flowers, fruits, seeds, stem, bark and wood. Destructive harvest of the species in which whole plant and roots are mainly used is an ecological concern, particularly when collected from wild.

In Natma Taung National park and its surrounding areas, it is reported that there are about 2,500 species of vascular plants (Mill, 1995). The vegetation distribution pattern along altitudinal gradient is quite unique, as a wide vertical range allows tropical and sub tropical plants to grow in lower areas and temperate plants to grow in higher areas. Different flora is observed in each altitudinal range, and making Natma Taung a virtual island and separating it from surrounding
areas, which is thought to be giving rise to endemic species (Kingdon-Ward. 1954, Tanaka 2005).

According to (Wood and Finn, 1902), the Chin hills were first explored ornithological by Lieutenant H. Wood, who visited Mount Victoria and nearby areas during the winter of 1901–1902. Following Wood’s initial findings, Colonel G. Rippon spent several months on Mount Victoria in 1904 collecting a large number of specimens (Robson et al. 1998). A German team spent six months on Mount Victoria and collected 6,000 specimens in 1937 (Stresemann and Heinrich 1940).

Out of the many mountains named as Mt. Victoria by nineteenth century Englishmen, this one NMT, in the southern Chin Hills must be the least spectacular. It is merely the highest point (just over 10,000 ft.) in a broad undulating ridge. Ascending into the pine forest of the middle slopes the Kingdon-Wards noted many ornamentals including *Lilium wallichianum*, *Hedychium gardnerianum*, three different species of *Iris* and a climbers and orchids. Above 6,500 feet sea level, mist is almost constantly present during the seven month rainy season and epiphytes become common. On the open slopes 1,000 feet above sea level of three woody plants are dominant namely *Quercus semecarpifolia*, *Pinus insularis*, and a magnificent red-flowered rhododendron related to *Rhododendron arboreum*. (www.Rhododendron.html)

From 2000 to 2013, Investigation and research in botany and pharmacy of industrial resource plants, currently identifying and analyzing the components of the 7,000 sample plants collected by the Makino Botanic Kochi has already been implemented (Fujikawa K, A. Maeda 2007). Moreover, according to reported from (Fujikawa K, et.al. 2009) they collected a dozen of species, and among them *Panax pseudoginseng* Wall. (Araliaceae), *Bupleurum candeliei* Wall. ex DC. (*Umbelliferae*), *Gentiana sino-ornata* Balf. f. (*Gentianaceae*) and *Zingiber officinale* Roscoe (*Zingiberaceae*) were analyzed with thin layer chromatography and high performance liquid chromatography analysis. They found that Myanmar *Panax pseudoginseng* is good qualities more than other countries.

4. Materials and methods

In this study, tape, taxonomy references, herbarium specimen, compass, GPS were used for systematic botanical studies in survey. Systematic botanical studies, identification and number of plant species occurring in the established (20m x 20m) square sample plots were
conducted according to the above sea level (2250-2350), (2350-2450), (2450-2550) m at National Park. Collections were made from August to February, 2012-2013, field observations on each plant species were made and samples of plant with high medicinal value were collected from the each level. Herbarium specimens were critically examined and identified with help of the relevant literatures (Hooker, 1897 and kress et al., 2003). Ethno medicinal information was gathered from experienced persons, local healers. Voucher specimens have been deposited in herbarium of Tree Improvement & Botany Section, Forest Research Institute, Yezin.

4.1 Study area
4.1.1. Location

Natma Taung National Park is located at 21°12’ N, 93°35’E, close to the border with India and Bangladesh. Three different names: Natma Taung, Mt. Victoria and Khaw nau sone, stands 3053 m above sea level, the highest mountain in the so-called Chin Hill, in Chin State, west-central Myanmar. The national park encompasses 722.6 km2 of rugged and verdant mountainous terrain (Fig. 1).

4.1.2 Vegetation

Figure 1. Map of Natma Taung National Park
Natma Taung has diverse vegetation resulting from the combined effects of geography, elevation, and human activities, whose vegetation types are roughly. The ridge around the Kanpetlet Township at an altitude of 1200 m mostly, support the local human population and a secondary forest consisting mainly of fast growing trees with wind-dispersed seeds such as pine and alder.

Slopes lower than 1000 m are dominated by species of *Dipterocarpus* and *Shorea* in a so-called *Dipterocarp* forest. Extensive pines forests appear on dry ridges up to about 1800 m. Oak forests occupy moist valleys on the southern slopes further up. As the stature of the oak forest diminishes above 2700 m, the canopy thins and *Rhododendron* becomes increasingly prominent. The northern slopes up to about 2500 m are dominated by laurel and stone oak forest.

The summit of Natma Taung itself is clothed in open meadow (Fujikawa et al. 2009). The Chin state is a mountainous region, and source of water for many river streams that wet the valleys of the mountain ranges, and flow down to the plain in the east and south. They are watershed areas of Lemro River, Myitha River, Saw Chaung, Maw Chaung, Salin Chuaung, Che Chaung, Yow Chaung, Mon Chaung, etc.

### 4.1.3. Climatic condition

The climatic of the Kanpetlet Township in the southern part of Chin State is characterized by its mild temperatures, high rainfall and humidity. From May to November are the rainy months, with this area getting more rain than other due to the monsoon storms that come in from the Bay of Bengal. The park has three seasons: a long rainy season with an annual rainfall >1,000 mm; a cold dry season, maximum temperature varies between 4ºC (December- January) and a hot dry season with temperatures up to 20ºC.

### 5. Results & Discussions

5.1. Distribution patterns:

During the survey, the research activities were implemented in the three site base on sea level (2250-2350), (2350- 2450), (2450-2550)m in the each sample plot of the National Park respectively. The total of belonging to 42 families, 83 genera and 102 species of trees, shrubs and herbs are found in the established sample plots. (Figure.2)
Figure 2. Growth forms of plant species

Natma Taung belongs to the Sino-Himalayan region, therefore, around (2250-2350)m, Pinus kaysia and Rhododendron arboreum Sm. are dominant trees and in grasslands around Swertia spp, Satyrium nepalense, Roscoea australis, Dendrobium longicornu, Geranium pratense, and other Himalayan plants can be found.

In (2350-2450) m, Pinus kaysia, Cedrus deodara; and Rhododendron arboreum Sm, are dominant trees and in grasslands Swertia spp, Satyrium nepalense, Allium species, Bistort spp, Agapetes moorei, some epiphyte and ground orchid species, and around (2450-2550) m, Pinus kaysia, Quercus semicarpifolious and Rhododendron arboreum are dominant trees and in grasslands around Anaphalis margaritacea, Gnaphalium affine, Satyrium nepalense, Roscoea australis, Bistort spp, Peristylus constrictus, epiphytic orchid species, and other plants can be found. Most of the plant species had multiple uses which were used in the treatment of diseases and other conditions. (sources; Author’s survey, 2013)

Among then, 76 species have medicinal value. The largest number of medicinal species came from Asteraceae (11), which was followed by Orchidaceae (8), Fabaceae and Ranunculaceae (5) and, (3) species of Rosaceae, Rubiaceae, Gentianaceae, Zingibraceae, (2) species of, Eriaceae, Violaceae, Scrophulariaceae, Smilaceae, Apiceae, Buddlejaceae, Myricaceae, (1) species of Dipsaceae, Juglandaceae, Oleaceae, Symplocaceae, Plantaginaceae Taxaceae, Proteaceae, Acanthaceae, Amaranthaceae, Araceae, Alliaceae, Aristolochiaceae, Fabaceae, Geraniaceae, Hypericaceae, Labiatae, Saxifragaceae, Polygonaceae, Proteaceae, Pinaceae, Rutaceae, Myrsinaceae, and Premulaceae. (sources; Author’s survey, 2013)
These 76 species were found to treat (50) ailments, (33) of which were used to treat more than one disease and the remaining was used to treat only one disease. The study of the represented(76) species medicinal plants revealed that herbs made up the highest proportion of followed by herbs (47), shrubs (9), trees (5), small tree (5), epiphyte (5) and Climbers (5). The distribution pattern of life form of medicinal plants species in NMT area that naturally growing are long- lived herbaceous perennials followed by herbs (62)% , shrubs (12 )%, small tree(7)% , epiphyte(7)% , tree (6 )% and, climbers (6 )% (Figure.3).

5.2. Utilization : This study recorded the uses of several parts of individual plant species as medicine. The most commonly used medicinal plant parts was the natural roots (27), followed by leaves (26 ), the whole plant (19 ), flowers (8), Pseudo bulb (3), Rhizome (3) tuber (2)Bark (2), Stem (2), Young root (2), others are (1) etc. (Figure 4.)
Various parts were used for the treatments of diseases/ailments such as, cough (10), fever (9), dysentery (8), followed by (7) species of inflammatory, diarrhoea. (6) species of skin, (5) species of stomachache, tonic, ulcer, (4) species of febrifuge, diabetes, indigestion, toothache, cut& wound. Moreover, (3) species of influenza, jaundice, malaria, cholera (Fig 5.) expectorant, headache, and rheumatism and others. (Figure 6.)
5. Conclusion & Recommendations

In the survey, 25 genera 44 species from (2250- 2350)m, 33 genera 55 species from (2350- 2450)m and 30 genera 62 species from (2450- 2550)m are collected. Among them, Asteraceae, Orchidaceae, Violaceae, polygonaceae, plantaginaceae, Eriaceae, Smilaceae, Ranunculaceae, Rubiaceae are found in all sample plots. Moreover, the local people are used the root of Bistort yunnanensis in dysentery disease, bulb of Agapetes moorei is used for stomach ache and also juice of the flowers of Rhododendron arboreum in cough.

Therefore, in situ and ex situ conservation of these species should be started in that area. Long term research is needed to conduct for propagation, cultivation, processing, chemical characterization and marketing of endangered medicinal plant species.
Acknowledgements

I am grateful to Dr. Thaung Naing Oo, Director of Forest Research Institute for encouragement for our research. I would like to thanks to U Tin Mya Soe (Staff Officer), and U Law Shaing, Department of Nature & Wild Life Conservation, NMT National Park. I highly appreciate Daw Hay Mar Min from NWFPs section, for accompanying to carry out the work.
REFERENCES


3. Chetna bisht and Anoop Badoni, 2009, Medicinal Strength of Some Alpine and Sub-Alpine Zones of Western Himalaya, India (Swertia cilia) New York Science Journal, 2(5), ISSN 1554-0200

4. Dr. S.P. Ghosh, 2005, Promotion of medicinal and aromatic plants in the Asia Pacific region, Former Deputy Director General (Hort),


7. Hai Tag, A K Das & Hali, Loyi, 2007, Anti inflammatory plants used by the Khamti tribe of Lohit district, in eastern Arunachal Pradesh, India


16. Pyi Soe Aung, 2012, Understanding Forest Dependency and Resource Extraction of Local Communities living around the Protected Area in Myanmar (A Case Study in Natma Taung National Park, Myanmar)


20. *Anaphalis margaritacea*.html
21. *Allium wallichii*.html
22. *Crotalaria leguminosae*.html
23. *Cyananthus lobatus*.html
25. *Indigofera* spp.html
26. http://bioinfo.bisr.res.in
27. http://www.flowers.org.uk/flower
28. Plants for Use - Search.html
29. Himalayan Thorowax.html
30. *Gnaphalium affine* 2.html
31. *Geranium pratense*.html
32. Saqib, Z1 and Sultan, 2010, Ethnobotany of Palas Valley, Pakistan
34. *Quercus semicarpifolia*.html
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REFERENCES


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30. Geranium pratense.html
31. Senecio scandens.html
32. Saqib, Z1 and Sultan, 2010, Ethnobotany of Palas Valley, Pakistan
34. Quercus semicarpifolia.html
<table>
<thead>
<tr>
<th>No.</th>
<th>Plant species</th>
<th>Family</th>
<th>Habit</th>
<th>Part Uses</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><em>Aristolochia wardiana</em> Ma.</td>
<td>Aristolochiaceae</td>
<td>Climber</td>
<td>Leave</td>
<td>Snake bite (Antidote)</td>
</tr>
<tr>
<td>2.</td>
<td><em>Anaphalis margaritacea</em> (L.) Benth. &amp; Hook.f.</td>
<td>Asteraceae</td>
<td>H</td>
<td>Leaves &amp; head paste</td>
<td>Cuts, wounds, boils. The rubbed and rolled dry leaves were used in intestinal disorder. By keeping the flame of rubbed and rolled leaves on the top of the head, the heat passes slowly. It is anodyne, antiseptic, astringent, expectorant and sedative. Used internally, it is a good remedy for pile, dysentery and pulmonary affections. The whole plant is applied to burns, sores, ulcers, and rheumatic joints. An infusion of the plant is steamed and inhaled in the treatment of headaches.</td>
</tr>
<tr>
<td>3.</td>
<td><em>Anislaea latifolia</em> (D.Don)</td>
<td>Asteraceae</td>
<td>H</td>
<td>Root</td>
<td>Colic, fever, cholera</td>
</tr>
<tr>
<td>4.</td>
<td><em>Allium wallichii</em> Kunth</td>
<td>Alliaceae</td>
<td>H</td>
<td>Bulb</td>
<td>Boiled then fried in ghee, are eaten in the treatment of cholera and dysentery. The raw bulb is chewed to treat coughs and colds. It is said that eating the bulbs can ease the symptoms of altitude sickness.</td>
</tr>
<tr>
<td>5.</td>
<td><em>Arisaema wattii</em> Hook.f</td>
<td>Araceae</td>
<td>H</td>
<td>Tuber</td>
<td>Colic, fever, cholera</td>
</tr>
<tr>
<td>6.</td>
<td><em>Agapetes moorei</em> Hemsl</td>
<td>Ericaceae</td>
<td>Shrub</td>
<td>Rhizome</td>
<td>Used for stomach</td>
</tr>
<tr>
<td>7.</td>
<td><em>Astragalus chlorostachys</em> Royle ex</td>
<td>Fabaceae</td>
<td>Shrub</td>
<td>Arial Root</td>
<td>Tonic, febrifuge, tuberculosis</td>
</tr>
<tr>
<td>8.</td>
<td><em>Artemisia indica</em> Willd.</td>
<td>Asteraceae</td>
<td>H</td>
<td>W Plant Root</td>
<td>The juice of the plant is used in Nepal to treat diarrhoea, dysentery and abdominal pains. A paste of the plant externally to treat wounds. A tonic for the kidneys.</td>
</tr>
<tr>
<td>9.</td>
<td><em>Aconitum heterophyllum</em> Wall. exRoyle</td>
<td>Ranunculaceae</td>
<td>H</td>
<td>Root</td>
<td>Root Paste of dried root mixed with water and sugar is taken orally for treating Diarrhoea, Fever, cough, stomachache</td>
</tr>
<tr>
<td>10.</td>
<td><em>Achyranthes bidentata</em> Blume</td>
<td>Amaranthaceae</td>
<td>H</td>
<td>W Plant</td>
<td>is taken internally to treat hypertension, back pains, urine in the blood, menstrual pain, bleeding.</td>
</tr>
<tr>
<td>11.</td>
<td><em>Ageratum conyzoides</em> L.</td>
<td>Asteraceae</td>
<td>H</td>
<td>Leaves</td>
<td>Paste are used for Cut &amp; wound, ulcer, Cough</td>
</tr>
<tr>
<td>12.</td>
<td><em>Alpinia nigra</em> (Gaertn.)</td>
<td>Zingiberaceae</td>
<td>H</td>
<td>Rhizome</td>
<td>is used as an Tonic, diuretic, expectorant. It is also used in</td>
</tr>
</tbody>
</table>
13. **Blumea fistulosa** (Roxb.) Kurz  
**Asteraceae**  
**H**  
**Leaf**  
Skin  
the treatment of impotence and bronchitis

14. **Bupleurum candollei** Wall  
**Apiaceae**  
**H**  
**Roots**  
Treatment of coughs, fevers, and influenza.

15. **Buddleja asiatica** Lour  
**Buddlejaceae**  
**H**  
**Root decoction**  
Tuberculosis

16. **Buddleja macrostachy a Benth**  
**Buddlejaceae**  
**H**  
**leaves**  
Leaves are used for venereal disease.

17. **Bulbophyllum odoratissimum**  
**Orchidaceae**  
**Epiphyte**  
**Wp**  
Treat tuberculosis and fracture

18. **Bistorta yunnanensis** H. Dross.  
**Polygonaceae**  
**H**  
**Leaves**  
Dried leaves are used, both internally and externally, in the treatment of internal and external bleeding, diarrhoea, dysentery, cholera. is used for: epilepsy, fever, tetanus, carbuncles, snake bites, and diabetes.

19. **Cicerbita alpine** (L.) Waller.  
**Asteraceae**  
**H**  
**leaves**  
Diuretic and applied externally to inflammations

20. **Clematis montana**  
**Ranunculaceae**  
**Climber**  
**stem**  
Antiviral activity

21. **Cyananthus lobatus**  
**Campanulaceae**  
**H**  
**Flower Root**  
a sweet, astringent and acrid taste with a cooling potency. Various serous disorders and constipation. The juice of the root, used in the treatment of peptic ulcers

22. **Coelogyne nitida**  
**Orchidaceae**  
**Epiphyte**  
**Pseudobulb**  
Paste & juice are applied in headache and fever and burn.

23. **Cleimatis buchananiana DC**  
**Ranunculaceae**  
**Climber**  
**Root Stem Wp**  
A paste swellings caused by inflammation. The juice of the root is used in the treatment of peptic ulcers, coughs and colds.  
A paste of the stem is used toothache.  
The juice of the plant is applied externally to cuts and wounds, indigestion.  
The leaf juice is taken internally, and is also applied externally to the forehead, in the treatment
<table>
<thead>
<tr>
<th>No.</th>
<th>Scientific Name</th>
<th>Family</th>
<th>Part Used</th>
<th>Medical Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.</td>
<td><em>Dipsacus inermis</em> Wall.</td>
<td>Dipsacaceae</td>
<td>H</td>
<td>Root paste leaves. Leucoderma Boiled in water and the resulting extract is used by ladies for taking bath after delivery.</td>
</tr>
<tr>
<td>26.</td>
<td><em>Eriosema chinense</em> Vogel</td>
<td>Fabaceae</td>
<td>Shrub</td>
<td>Grain Decoction, with powdered pepper added, is given for diarrhea.</td>
</tr>
<tr>
<td>27.</td>
<td><em>Engelhardtia spicata</em> Blume</td>
<td>Juglandaceae</td>
<td>Tree</td>
<td>young leaves Scabies and skin</td>
</tr>
<tr>
<td>28.</td>
<td><em>Gnaphalium affine</em> D.Don.</td>
<td>Asteraceae</td>
<td>H</td>
<td>whole plant Expectorant and febrifuge. A decoction is used in the treatment of influenza, sore throat, productive coughing, rheumatoid, rheumatic injuries, leucorrhoea and skin</td>
</tr>
<tr>
<td>29.</td>
<td><em>Geranium pretense</em> L.</td>
<td>Geraniaceae</td>
<td>H</td>
<td>wplants Cough cold, lung disease, eye disease, fever, lymph fluid disorder, back ache, bile disease and stomach disease. (Medicinal Plants of Dolpo)</td>
</tr>
<tr>
<td>30.</td>
<td><em>Gentiana sino.ornata</em> Balf.f.</td>
<td>Gentianaceae</td>
<td>H</td>
<td>Roots The roots are used medicinally to treat weak or underactive digestive systems and also as anti-inflammatory medicine</td>
</tr>
<tr>
<td>31.</td>
<td><em>Galium asperifolium</em> Wall.</td>
<td>Rubiaceae</td>
<td>H</td>
<td>Plant waste Skins ailments is grinded in water, used in worm infestation.</td>
</tr>
<tr>
<td>32.</td>
<td><em>Hypericum perforatum</em> L.</td>
<td>Hypericaceae</td>
<td>H</td>
<td>whole plant Cuts, malarial, antidepressant, anti cancerous,</td>
</tr>
<tr>
<td>33.</td>
<td><em>Helicia nilagirica</em> Bedd.</td>
<td>Proteaceae</td>
<td>S. Tree</td>
<td>Leaves a decoction prepared by boiling the leaves is used for various stomach ailments including peptic ulcer and indigestion.</td>
</tr>
<tr>
<td>34.</td>
<td><em>Hedyotis corymbosa</em> (L.) Lam</td>
<td>Rubiaceae</td>
<td>H</td>
<td>wp Hepatoprotective agent.</td>
</tr>
<tr>
<td>No.</td>
<td>Scientific Name</td>
<td>Family</td>
<td>Type</td>
<td>Part Used</td>
</tr>
<tr>
<td>-----</td>
<td>----------------</td>
<td>--------</td>
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<td>--------------</td>
</tr>
<tr>
<td>35.</td>
<td><em>Hedychium gardnerianum</em></td>
<td>Zingiberaceae</td>
<td>H</td>
<td>Rhizome</td>
</tr>
<tr>
<td>36.</td>
<td><em>Indigofera australis</em></td>
<td>Fabaceae</td>
<td>Shrub</td>
<td>Root</td>
</tr>
<tr>
<td>37.</td>
<td><em>Indigofera tinctoria</em></td>
<td>Fabaceae</td>
<td>Shrub</td>
<td>leaves and twigs</td>
</tr>
<tr>
<td>38.</td>
<td><em>Isodon coetsa spp</em></td>
<td>Libiatae</td>
<td>H</td>
<td>Aerial shoot</td>
</tr>
<tr>
<td>39.</td>
<td><em>Inula cappa</em> (Buch.Ham.)</td>
<td>Asteraceae</td>
<td>H</td>
<td>Root</td>
</tr>
<tr>
<td>40.</td>
<td><em>Listea cubeba</em> (Lour). Per.</td>
<td>Lauraceae</td>
<td>S.Tree</td>
<td>Essential oil</td>
</tr>
<tr>
<td>41.</td>
<td><em>Myrica esculenta</em> Buch-Ham.</td>
<td>Myricaceae</td>
<td>S.Tree</td>
<td>Bark, Leaves, Fruit</td>
</tr>
<tr>
<td>42.</td>
<td><em>Myrsine semiserrata</em> - Wall.</td>
<td>Myricaceae</td>
<td>S.Tree</td>
<td>Gum, Leaf</td>
</tr>
<tr>
<td>43.</td>
<td><em>Mazus pumilus</em> (Burm.f.)</td>
<td>Scrophulariaceae</td>
<td>H</td>
<td>the whole plant</td>
</tr>
<tr>
<td>44.</td>
<td><em>Pleione praecox</em></td>
<td>Orchidaceae</td>
<td>Epiphyte</td>
<td>Pseudobulb</td>
</tr>
<tr>
<td>45.</td>
<td><em>Parochetus communis</em> Buch.-Ham.</td>
<td>Fabaceae</td>
<td>Shrub</td>
<td>Flowers, leaves</td>
</tr>
<tr>
<td>46.</td>
<td><em>Peristylus constrictus</em> (Lindl.) Lindl.</td>
<td>Orchidaceae</td>
<td>H</td>
<td>Root</td>
</tr>
<tr>
<td>48.</td>
<td><em>Plantago major</em> L.</td>
<td>Plantaginaceae</td>
<td>H</td>
<td>Seed, Leaves</td>
</tr>
<tr>
<td>49.</td>
<td><em>Primula denticulata</em></td>
<td>Primulaceae</td>
<td>H</td>
<td>F &amp; Root paste</td>
</tr>
<tr>
<td>50.</td>
<td><em>Potentilla montisvictoriae</em></td>
<td>Rosaceae</td>
<td>H</td>
<td>Leaves</td>
</tr>
<tr>
<td>No.</td>
<td>Species</td>
<td>Family</td>
<td>Part Used</td>
<td>Medicinal Use</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------------------------</td>
<td>-----------------</td>
<td>-----------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>51.</td>
<td><em>Pedicularis rex</em> C.B.Clarke</td>
<td>Scrophulariaceae</td>
<td>H</td>
<td>Leaves were used as a folk medicine for the treatment of measles, chronic hepatitis and rheumatism paralysis.</td>
</tr>
<tr>
<td>52.</td>
<td><em>Pinus khasya</em> (Royle.ex. Parl)</td>
<td>Pinaceae</td>
<td>Tree</td>
<td>Wood oil was used for Piles, Cough in children.</td>
</tr>
<tr>
<td>53.</td>
<td><em>Quercus semicarpifolia</em></td>
<td>Fagaceae</td>
<td>Tree</td>
<td>Galls and Bark could be used in the treatment of chronic diarrhea, dysentery etc. The juice of the bark was applied externally to treat muscular pains.</td>
</tr>
<tr>
<td>54.</td>
<td><em>Rhododendron arboreum</em> .Sm.</td>
<td>Ericaceae</td>
<td>Tree</td>
<td>Flower and Leaves were used. Dried flower powder was effective in checking diarrhea and blood dysentery. Tonic for heart, Digestive and respiratory disorder. A decoction of the flowers was used to check a tendency to vomit. The petals were eaten to assist the removal of any animal bones that have become stuck in the throat. The young leaves were made into a paste and then applied to the forehead in the treatment of headaches.</td>
</tr>
<tr>
<td>55.</td>
<td><em>Rubus ellipticus</em> Sm.</td>
<td>Rosaceae</td>
<td>Shrub</td>
<td>Root and Fruit were used. Extract of root mixed with water was consumed twice in a day for curing diarrhea and stomachache. The fruits and crushed roots were used to cure dysentery. Juice of fruits was administered orally in cholera.</td>
</tr>
<tr>
<td>56.</td>
<td><em>Rubus niveus</em> Wall.</td>
<td>Rosaceae</td>
<td>Shrub</td>
<td>Leaves were used. Menorrhoea &amp; Antidote of snake bite.</td>
</tr>
<tr>
<td>57.</td>
<td><em>Rubia cordifolia</em> L.</td>
<td>Rubiaceae</td>
<td>Climber</td>
<td>Paste of leaves and Whole plant were used. Cure for ulcer and abdominal pain. Diabetics, astringent, and dysenteric, antiseptic.</td>
</tr>
<tr>
<td>58.</td>
<td><em>Roscoea australis</em> E.J Cowley</td>
<td>Zingiberaceae</td>
<td>H</td>
<td>Root was used. Cure to used rheumatism.</td>
</tr>
<tr>
<td>59.</td>
<td><em>Strobilanthes dasyphylla</em> Kung</td>
<td>Acanthaceae</td>
<td>H</td>
<td>Wplant was used. Anti-inflammatory and anti microbial.</td>
</tr>
<tr>
<td>60.</td>
<td><em>Selinum wallichianum</em></td>
<td>Apiaceae</td>
<td>H</td>
<td>Wp, Root were used. Nerving, sedative, etc.</td>
</tr>
<tr>
<td>61.</td>
<td><em>Scenecio scandens</em> D.Don</td>
<td>Asteraceae</td>
<td>H</td>
<td>Leaves were used. Eye diseases.</td>
</tr>
<tr>
<td>No.</td>
<td>Species Name</td>
<td>Family</td>
<td>Habitat</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------------------------</td>
<td>--------------</td>
<td>-------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>62.</td>
<td>Senecio chrysanthemoides DC.</td>
<td>Asteraceae</td>
<td>Whole plant</td>
<td>Used as skin</td>
</tr>
<tr>
<td>63.</td>
<td>Spilanthes paniculata Wall ex. DC</td>
<td>Asteraceae</td>
<td>Leaves, Root, Flowers and Fruits</td>
<td>Used to relieve toothache and infections of throat and gum, arthritis, ulcer</td>
</tr>
<tr>
<td>64.</td>
<td>Spiranthes sinensis (Pers) Ames</td>
<td>Orchidaceae</td>
<td>root</td>
<td>Aphrodisiac, meningitis, dysentery, headache</td>
</tr>
<tr>
<td>65.</td>
<td>Satyrium nepalense D.Don</td>
<td>Orchidaceae</td>
<td>Tubers</td>
<td>Tonic and used in diarrhea and malaria, juice is used externally in cut and wound.</td>
</tr>
<tr>
<td>66.</td>
<td>Swertia chirayita</td>
<td>Gentianaceae</td>
<td>Leaves Wp</td>
<td>Blood diseases, Malaria, cough, cold, and fever</td>
</tr>
<tr>
<td>67.</td>
<td>Swertia ciliate CD.</td>
<td>Gentianaceae</td>
<td>wP</td>
<td>Blood diseases, purifier</td>
</tr>
<tr>
<td>68.</td>
<td>Symplocos theaefolia D.Dom</td>
<td>Symplocaeae</td>
<td>Leaf</td>
<td>Extract of and twig shows activity against human epidermoid</td>
</tr>
<tr>
<td>69.</td>
<td>Smilax lanceifolia</td>
<td>Smilaceae</td>
<td>Root</td>
<td>boiled extract of the root</td>
</tr>
<tr>
<td>70.</td>
<td>Smilax geylamica</td>
<td>Smilaceae</td>
<td>Root</td>
<td>burns and boils, back pains, stomach aches, lung disorders, and kidney problems</td>
</tr>
<tr>
<td>71.</td>
<td>Taxus wallichiana Zucc.</td>
<td>Taxaceae</td>
<td>Bark, Leaves</td>
<td>Tea, Cancer, Lung and Diabetes, epilepsy</td>
</tr>
<tr>
<td>72.</td>
<td>Thalictrum reniforne Wall.</td>
<td>Ranunculaceae</td>
<td>Root</td>
<td>Jaundice</td>
</tr>
<tr>
<td>73.</td>
<td>Thalictrum foliolosum D.C.</td>
<td>Ranunculaceae</td>
<td>Root</td>
<td>Fever, leucoderma, toothache, diuretic, Febrifuge, putgative, tonic, Stomach</td>
</tr>
<tr>
<td>74.</td>
<td>Viola arcuata Blume.</td>
<td>Violaceae</td>
<td>whole plant</td>
<td>Infusion of the taken for heart disease.</td>
</tr>
<tr>
<td>75.</td>
<td>Viola pilosa</td>
<td>Violaceae</td>
<td>Flower Root</td>
<td>Decoction of flowers is useful in coughs and colds. jaundice.</td>
</tr>
<tr>
<td>76.</td>
<td>Zanthoxylum accanthopodium DC</td>
<td>Rutaceae</td>
<td>Shrub</td>
<td>Diarrhea and stomach ache</td>
</tr>
</tbody>
</table>