FLOWERING PLANTS OF NUBRI VALLEY, MANASLU CONSERVATION AREA, GORKHA DISTRICT, NEPAL

A Dissertation Submitted for the Partial Fulfillment of the Requirements of

Master's Degree in Botany

Submitted by

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CERTIFICATE

It is to certify that this M.Sc. Dissertation work entitled **"Flowering Plants of Nubri Valley, Manaslu Conservation Area, Gorkha District, Nepal"** has been carried out by Mrs. Shova Sapkota under my supervision. As to my knowledge, this work has not been previously submitted for any other degree. Hence, I recommend this dissertation work be accepted for the partial fulfillment of Master's in Botany, Tribhuvan University, Kathmandu, Nepal.

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LETTER OF APPROVAL

This is to certify that the dissertation work entitled **"Flowering Plants of Nubri Valley, Manaslu Conservation Area, Gorkha District, Nepal"** submitted by Mrs. Shova Sapkota has been accepted as the partial fulfillment of Master's Degree in Botany.

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ABBREVIATIONS AND ACRONYMS

Ann. Check. Fl. Pl. Nepal	Annotated Checklist of Flowering Plants of Nepal
BM	Natural History Museum, London
Bull. No.	Bulletin Number
Bull. Sp.	Bulletin Special
CDB	Central Department of Botany, TU
DHM	Department of Hydrology and Meteorology
DPR	Department of Plant Resources, MFSC
Enu. Fl. Pl. Nepal	An Enumeration of Flowering Plants of Nepal
Fl.	Flowering
Fr.	Fruiting
KATH	National Herbarium and Plant Laboratories, Godavari
MCA	Manaslu Conservation Area
MCAP	Manaslu Conservation Area Project
NAST	Nepal Academy of Science and Technology
NTFPs	Non- Timber Forest Products
NTNC	National Trust for Nature Conservation
Sp.	Species (singular)
TU	Tribhuvan University
TUCH	Tribhuvan University Central Herbarium
VDC	Village Development Committee

ABSTRACT

Central Nepal has the long history in the field of floral exploration in comparison to other parts of the country. However, the present study area (Manaslu Conservation area and adjoining areas) is still under explored. The present floristic study was carried out with the aim of fulfilling this gap by giving particular attention on flowering plants.

Plant specimens for the present study were collected in two seasons. Record of species was done both within the plots and outside the plots. First collection was done in May 2012 and second collection was done in October 2012. Beside collections, listing of flowering plants was done from Arughat to Larke Pass.

Within plots, a total of 286 species were enumerated taxonomically. Outside the plots, 120 species of flowering plants were listed from Arughat to Jagat, 24 species from Jagat to Gap, and 7 species from Samagaun to Larke Pass. Among 286 enumerated species, 8 genera and 9 species belong to gymnosperms, 37 genera and 48 species belong to monocotyledons and 161 genera and 229 species belong to dicotyledons.

The most dominant family is found to be Asteraceae with 21 genera and 30 species, followed by Liliaceae with 11 genera and 15 species, and Orchidaceae with 10 genera and 12 species. *Rhododendron* and *Senecio* are the largest genera each having six species. The flora of Nubri Valley of Manaslu Conservation Area was dominated by herbaceous plants.

Among 286 species, 48 species were found to be new addition to flora of Manaslu conservation Area, 79 species are new addition to Kitamura (1953) from Arughat to Jagat, 11 species are new addition from Jagat to Gap and 4 species are new addition from Samagaun to Larke Pass. Thus, a total of 63 species, are new addition to flora of Manaslu Conservation Area. The highest number of species was recorded at an altitude between 2200-2800m.

Among the collected species, seven species are found to be threatened, 165 species has been reported to be of economic values from MCA and adjoining areas. Among them, 81 species are used for medicinal purpose, 34 species for fuel wood, 22 species for fodder, 29 species are edible, 9 species are for religious purpose, 9 species for construction purpose, 10 for ornamental and 14 species are for miscellaneous uses.

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1 INTRODUCTION

1.1 Background

Biological diversity is the variety and variability among living organisms and the ecological complexes in which they occur. A definition of biological diversity or biodiversity that is altogether simple, comprehensive, and fully operational is unlikely to be found (Noss 1990). In other words, biodiversity encompasses the total number, variety and variability of life forms, levels and combinations existing within the living world (biodiversity.ca.gov/Biodiversity/biodiv_def2.html). According to the definition of the 1992 UN conference on Environment and Development (UNCED) Convention," biodiversity" includes all of its manifestations. Therefore, in addition to terrestrial biodiversity, it also covers marine and other aquatic biodiversity as well.

Biodiversity consists of three fundamental and hierarchial categories: Ecosystem diversity, Species diversity and Genetic diversity (Chaudhary 1998). Biodiversity is most commonly described in terms of Species diversity, and particularly in terms of species richness or the number of species in a given habitat (www.coastalwiki.org/wiki/Species_diversity). Thus, species diversity is a measure of the number and frequency of species in a community. It is the effective number of different species that are represented in a collection of individuals. Species diversity consists of two components, species richness and species evenness. Species Richness is a simple count of species, whereas species evenness quantifies how equal the abundances of the species are (www.ask.com/question/what-is-species-diversity).

For the documentation of plant biodiversity, floristic studies play a vital role. Floristic is the documentation of all the plant species in a given geographic region. It also includes documentation of plant communities and abiotic factors as well (Simpson 2006). The floristic study also helps in the enumeration, updating nomenclature change of the species and adding specimens in the herbaria. Floristic studies may be published in taxonomic journals or may result in the publication of a flora or plant manual of a given region. Any scientific inquiry upon plants would be severely hindered in the absence of a flora which provides a means to identify a plant and to fix a name for it, besides extrapolating ecological and socio-economic information (DPR 1997).

A flora is a taxonomic treatment of the plants of a given geographical area. It refers to the comprehensive description of the plants occurring in the particular area as well as publication of the description of plants. It provides a detail account of information which is collected over time from the field, herbarium and literature by organizing them in a scientific manner. A flora usually contains

scientific names with author citation, the reference to original publication, synonymy, precise description, ecology, habitats, geographical distribution, common and local names, and uses (Chaudhary 1998). The flora also includes the devices called keys to families, genera, species or even infra- specific levels. The keys are either bracketed or indented which enable the users to identify an unknown plant.

Flora is the fundamental requirement of all the researchers of contemporary taxonomy, since the accurate identification of species is absolutely essential (Simpson 2006). The main purpose of the flora is to compile an inventory of the world's plants, either of a country or a particular region such as small patch of forest, district, state etc. A flora summarizes the biodiversity of a particular region. The conservation priorities are decided on generalized measures of biodiversity.

Economic plants resources refers to those plants which are useful, provides benefit and are very important for the human well- being. Even though, all the plants are equally important for maintaining the balance in ecosystem, but within them some are medicinally used, some for fodder, fuel wood, ornamental, edible, while some can have miscellaneous uses. Since ancient times, people of Nepal are depending upon plants and plant products as a mainstay of everyday life. So far, over 1500 species (1434 flowering plants, 65 ferns and their allies and 8 conifers and their allies have been recorded as having at least one use, including more than 650 used as food plant and over 1000 species of wild plants used for medicines (rbg-web2.rbge.org.uk/Nepal/). Whereas database of medicinal and aromatic plants of Nepal include 1, 624 species of wild, domesticated and naturalized plants (cffn.ca/about-nepal/plant-of-nepal).

1.2 Status of the Flora of Central Nepal

Phyto-geographical studies of Nepali flowering plants indicate that the lower subtropical and tropical bioclimatic belts below 1500m altitude are floristically related to the south-east Asia-Malaysian and Indian floristic regions. The central belt composed of upper subtropical and temperate bioclimatic zones at altitudes ranging from 1500m to 3000m are floristically related to the Sino-Japanese floristic region. The sub-alpine and alpine zones above this belt are floristically related to the central Asiatic floristic region (Shakya 1983).

Thus, various studies have revealed a close resemblances of central Nepalese flora with Sino-Japanese floristic regions (Kanai 1966; Dobremez and Shakya 1975). The flora of Central Nepal is intermingled both with the western and Himalayan elements. Several Nepalese and foreign botanists and explorers especially from the UK, Japan, France and the USA have contributed in the study of flora in different parts of Nepal.

Actually the botanical explorations in Nepal started from Central Nepal when Buchanan Hamilton started collecting plant specimens for the first time in 1802. Since, then many Nepalese as well as foreign expedition teams have collected specimens from Central as well as from other parts of Nepal. Mainly the explorations were focused to the higher altitude areas. F. Buchanan Hamilton, N. Wallich,

J. D. A. Stainton, H. Kitamura, and H. Hara have given special contribution to highlight the flora of Central Nepal to the world. But still flora of tropical and sub- tropical belts, especially the midhills is less explored eventhough more explorations have been conducted in Central Nepal as compared to other parts of the country.

Thus the main aim of the present study is to document and enumerate the flowering plants of Manaslu Conservation Area and its adjoining areas of Gorkha district, Central Nepal with its taxonomic treatment and to report the plants of economic importance too.

1.3 Objectives

The general objective of the present research is to contribute for the floristic composition of Manaslu Conservation Area and vicinity of Gorkha District.

The specific objectives are:

- To enumerate and systematically describe flowering plants of Manaslu Conservation Area of Gorkha District with artificial keys.
- To report the economic plant resources of MCA and adjoining areas with their use status.

1.4 Justification

Only a few floristic, ethnobotanical and conservation studies have been conducted in the Manaslu Conservation Area (Shrestha 2013). The record of plant species is limited and less known about their use status. Therefore, the systematic documentation of plants in the study area with their distribution and natural status will be helpful for the publication of "Flora of Manaslu Conservation Area" and in the conservation of plant genetic diversity for future use which is still meager. Moreover, it will be a significant contribution as a reference material for the up coming editions of 'Flora of Nepal'. The area is also rich in Non-Timber Forest Products, thus its documentation, availability, regeneration status, and trade analysis may lead to the sustainable management of plant resources for the livelihood enhancement of local communities.

1.5 Limitation of the study

The complete documentation of the flora of Manaslu Conservation Area was obscure due to limitation of time and resources because of which another valley of MCA i.e. Tsum (Chum) valley could not be covered. Some of the specimens were found in vegetative stage, which could not be identified up to the species level. In adjoining areas, only listing was possible due to difficulty in herbarium preparations

2 LITERATURE REVIEW

The history of botanical exploration in Nepal began after the collections of Buchanan-Hamilton and Nathalien Wallich (1802-1821). They collected plants mainly from Central Nepal.

2.1 Enumeration of Plants in Nepal

Several Nepalese and foreign explorers have enumerated the flora of Nepal. The important publications related to flora of Nepal are "*Prodromus Florae Nepalensis*" (Don 1825) *Tentamen Florae Nepalensis* (Wallich 1824-26) and *Plantae Asiaticae Rabriores* (Wallich 1830). These publications covered the plants collected by Buchanan- Hamilton (1802-03) and N. Wallich (1820-21).

J. D. Hooker's seven celebrated volumes called *Flora of British India* (1875-1897) is another major contribution to the flora of Nepal including all the plants collected by him in Nepal along with those of Hamilton and Wallich. Hara *et al.* (1978-1982) had made remarkable contribution in the floral enumeration of Nepal. Nepal Government also initiated countrywide collection of herbarium collections for the Department of Plant Resources. A number of local floras have been published in this regard. The University of Tokyo in collaboration with the Department of Plant Resources has contributed in the publications of *The Himalayan Plants* Vol. I (1988), Vol.II (1991), besides their earlier contributions such as *Flora of Eastern Himalaya* I report (1966), second report (1971) and the third report (1975).

Recently, most remarkable contribution has been made by Press *et al.* (2000). They enumerated 6076 taxa of flowering Plants. The most latest and remarkable publication is *Flora of Nepal Vol.3* (Magnoliaceae to Rosaceae; Watson et al. 2011), which enumerates 21 families, with 123 genera, 600 species, 19 subspecies, 31 varieties and 4 forma.

2.2 Study of flora by DPR, Nepal

The systematic study on flora of Nepal has been carried out since the establishment of DPR, Nepal and the National Herbarium and Plant Laboratories (KATH) in 1960.

Since 1967, floras of different areas have been published in the form of Bulletins. *Flora of Rajnikunj (Gokarna Forest*) Bull. No. 1, *Flora of Phulchoki and Godawari* (1969) Bull. No. 2, *Flora of Nagarjun* (1973) Bull. No. 4, *Supplement to the Flora of Phulchoki and Godavari* (1974) Bull No. 5, *Flora of Langtang and Crosssection Vegetation Survey* (1976), Bull. No. 6, *Flora of Kathmandu Valley* (1968), Bull. No. 11, etc.

The *Endemic flowering plants of Nepal* Part I (Rajbhandari and Adhikari 2009) Bull. Sp. Publication No. 1 comprises 98 species belonging to 18 families, of which 4 species are endemic from Gorkha district. *Endemic flowering plants of Nepal Part II* (Rajbhandari and Dhungana 2010) Bull. Sp. Publication No. 2. reported 100 species belonging to 15 families, of which 3 species are endemic from Gorkha district. *Endemic flowering plants of Nepal Part III* (Rajbhandari and Dhungana 2011) Bull. Sp. Publication No. 3. enumerated 84 species belonging to 10 families of which 2 species are endemic from Gorkha district (Appendix VI).

The *Catalogue of Nepalese flowering Plants Part I* (Rajbhandari *et al.* (2010) includes 31 species of gymnosperms and monocotyledons under 17 genera and 10 families, of which 13 species are reported from Gorkha district. The *Catalogue of Nepalese flowering Plants Part II* (Rajbhandari *et al.* (2011) includes 1433 species of dicotyledons under 510 genera and 98 families, of which, 19 species are reported from Gorkha district. The *Catalogue of Nepalese flowering Plants Part III* (Rajbhandari *et al*. (2011) includes 1513 species of dicotyledons under 530 genera and 62 families, of which, 28 species are reported from Gorkha district.

2.3 Botanical explorations in Manaslu Conservation Area

Limited research works have been conducted in the Manaslu conservation area to explore the floristic diversity and studies related to natural resources. The area was first explored by the Japanese team while exploring Central Nepal. Kitamura (1953) reported 437 species of vascular plants from Gorkha district among which 7 species are gymnosperms, 53 species are monocotyledons and 377 species are dicotyledons. Stainton (1963) collected plants from Upper Budhi Gangdaki Valley during June and July, 1962. Amatya and Manandhar collected 350 specimens of flowering plants from Gorkha district during July, August, 1977 (Rajbhandari 2002). Shakya, Adhikari and Subedi collected 1000 specimens of flowering plants from Gorkha district during May, June 1983 (Rajbhandari 2002). Suzuki and Mikage (1994) collected plants from Manaslu region (Arughat-Larke pass) during July-August, 1994. Bajracharya (1999) reported distribution of orchidaceous flora in lower Gorkha Area of Manaslu region. Chhetri (2011) reported 161 species of flowering plants from Manaslu Conservation Area.

Suwal (2010) determined upper limit of *Abies spectabilis* expanding towards mountain top and rate of expansion as 34.29m per decade with total shift 168m in last 50 years. Devkota (2011) studied the landslide number, dimensions and consequences along Budhigandaki river corridor. Mainali (2011) studied land cover classification and vegetation production analysis of five different vegetation types of Manaslu Conservation Area. Gaire (2011) determined the present position of the upper forest/ timber and tree- line. Devkota *et al.* (2012) studied the forest structure and its status at different altitudinal ranges mainly from 3000m to 3900m.

Sharma (2012) studied the species richness and composition of the vascular plants along altitudinal and land use gradient in Manaslu Conservation Area and Sagarmatha National Park and reported 502 species belonging to 86 families from MCA. Shrestha (2012) reported 10 species of gymnosperms,

189 species of dicotyledons and 17 species of monocotyledons. Mainali *et al*. (2013) extracted Normalized Difference Vegetation Index (NDVI) from five vegetation types from data of 2000- 2009 and correlated the result with temperature and precipitation of Manaslu Conservation Area. Bhattarai (2013) recorded 105 species of pteridophytes belonging to 20 families and 45 genera from the Nubri Valley of Manaslu Conservation Area.

Latest information on floristic diversity in Manaslu Conservation Area reveals 508 species of angiosperms, among which 410 species are dicotyledons and 85 species are monocotyledons, 13 species are gymnosperms and 37 species are pteridophytes (NTNC/MCAP 2013).

Analysis of endemic flowering plants in Manaslu Conservation Area and vicinity of Gorkha district revealed 10 species of endemic plants, including recently reported endemic species of Himalayan poppy (*Meconopsis manasluensis* P. Egan) from Manaslu Himal, East of Samdo (Egan 2011).

2.4 Economic Plant Resources in Manaslu region and adjoining areas

The database of medicinal and aromatic plants of Nepal includes 1,624 species of wild, domesticated and naturalized plants (cffn.ca/about-nepal/plant-of-nepal). About 100 different medicinal, aromatic and spice plants are considered to be herbs and medicinal plants (Olsen 1996). Baral (1988) studied fodder situation in Khoplang and Kharibot Panchayats of Gorkha district. Manandhar (1990) studied medico-botany of Gorkha district. Muller-Boker (1990) reported social and economic causes of over-exploitation of natural resources in Gorkha. Amatya and Amatya (1995) surveyed medicinal plants in Gorkha district. Fox (1995) carried out survey of Non- Timber Forest Products in Bhogteni Village, northern side of Gorkha. Ghimire (1995) reported opportunities and limitations of medicinal plants promotion in Gorkha district. Olsen (1995) reported resources, constraints and possibilities of medicinal plants in Gorkha district. Stoian and Yadav (1995) reported present status and future perspectives of medicinal plants and community forestry in Gorkha district.

The trade in medicinal and aromatic products from the rural areas of Gorkha district in Central Nepal to the wholesale markets in India was investigated over a two- year period by Olsen in 1998. As a result, he reported 48 species of medicinal and aromatic plants traded from Gorkha district to elsewhere. Among them, six most important flowering plant species namely; *Nardostachys grandiflora* DC, *Swertia chirayita* Karst., *Neopicrorhiza scrophulariiflora* Hong, *Aconitum orochryseum* Stapf., and *Rheum australe* D. Don is collected in wild and constitutes more than 70% of collector value of the trade. One of the species *Dactylorhiza hatagirea* (D. Don) Soo is currently banned from collection and trade (Olsen 1996). Shrestha *et al.* (2011) explored 51 species of high values of medicinal and aromatic plants biodiversity of MCA region. Similarly, Shrestha (2012), documented, 127 important species for fuel wood and fodder and 19 species of plants of medicinal values from MCA. Thus, up to the date, very limited works related to economic plant resources and their management practices have been published in the Manaslu region and vicinity of Gorkha district.

2 MATERIALS AND METHODS

3.1 Study area

Manaslu Conservation Area lies in the north of Gorkha District in Western Development Region with latitude 28°20'-28°45' N and longitude 84°30'-85°12' E, ranging from 1400m (Jagat) to 8163m (NTNC/MCAP 2013). It encompasses an area of 1,663 sq.km. From the MCA about 33 mammals, 110 birds, 10 reptiles, 13 butterfly species and 756 species of plants in 19 types of forest have been reported (NTNC/MCAP 2013) and is recognized as a 'biodiversity hotspot'. Complex topography of MCA is represented by mountainous landscapes that arise from 1000 m elevation to the summit of Mt. Manaslu, the world's eighth highest mountain.

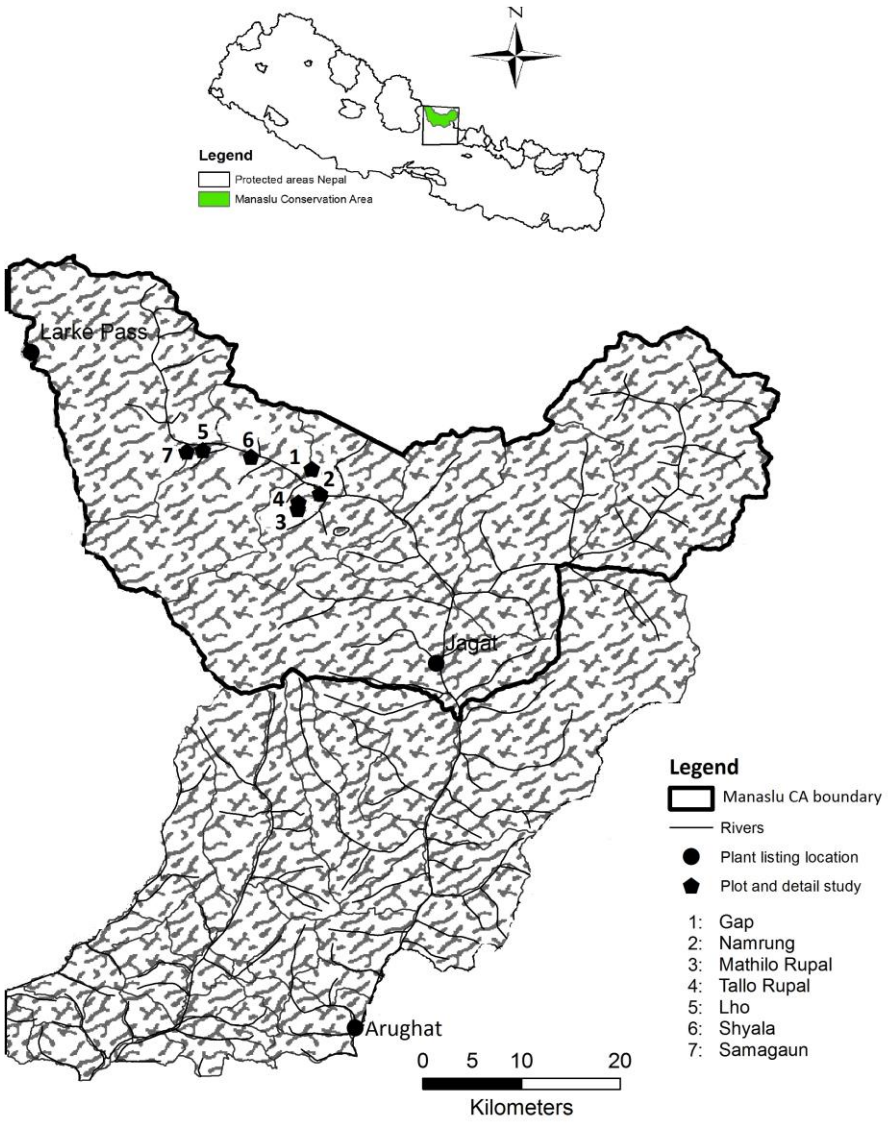

Fig.1 GIS map of study area

On 28th December, 1998, Manaslu Conservation Area was declared third and youngest Conservation area in Nepal. Beside Annapurna Conservation Area, this is the second Conservation Area that is managed by National Trust for Nature Conservation (NTNC) for 15 years since 1998. Manaslu Conservation Area has a fragile natural and cultural environment in order to conserve the unique environment and extremely rich biodiversity. The Manaslu Conservation Area consists of seven VDC's which include: Samagaun, Lho, Prok, Bihi, and Sirdibas (Nubri Valley) and Chumchet and Chhekampar (Tsum Valley).

3.1.1 Vegetation of MCA

The Manaslu Conservation Area consists of both Eastern Himalayan humid vegetation and the western Himalayan drier vegetation. Eastern Himalayan vegetation such as Rhododendrons, evergreen oaks and laurels dominate the area while western Himalayan vegetation is characterized by Chir pine (*Pinus wallichiana)*, spruce (*Picea smithiana)* and hemlock (*Tsuga dumosa)*. The MCA is represented by five different zones from subtropical (1000-2000m) to nival zone (above 5000m). The description regarding the vegetation type is given below:

ALTITUDE	CLIMATIC ZONES	ASSOCIATED FOREST TYPES
>5000 m	Arctic	Nival zone
5000 m	Snowline	
4000-5000 m	Alpine	Rhododendron, Juniper and alpine scrubs
Variable	Timberline	----
3000-4000 m	Subalpine	Mixed evergreen, Blue Pine, Fir, Birch, Larch and Juniper forests
2000-3000 m	Temperate	Pine, Rhododendron, Laurel, Oak, Maple and Mixed broad- leaf forests
1000-2000 m	Subtropical	Chir Pine forest, Birch and Mixed Broad leaf Forests

Table 1: Occurrence of forest types with respect to the climatic zones based on elevations at Manaslu Conservation Area, Nepal. Data compiled from Mani (1978), and Negi (1994).

SUBTROPICAL CHIR PINE FOREST

This forest, dominatd by *Pinus roxburghii,* occurs between 1000m - 2000m as both pure stands or mixed occasionally with *Rhododendron arboreum,* shrubby *Salix wallichiana* and *Lyonia ovalifolia.* Most Chir Pine forest stands occur along the banks of the Budhi Gandaki River in MCA. Chir pines are mostly used for timber and firewood.

ALDER FOREST

These subtropical forests of *Alnus nepalensis* occur along riverbanks and moist ravines. *Alnus nepalensis* is one of the pioneer species in areas that have had landslides. Occasionally, Alder trees are planted by the locals on community-owned lands for fodder and fuel wood supplies. They are also planted in areas with landslides for restoration, as Alders grow quickly.

TEMPERATE OAK FOREST

This vegetation occurs between 2500 and 3000m. Often Kashru oaks (*Quercus semecarpifolia)* form pure forest or as an associated species along with Laurels (*Lindera pulcherrima, Neolitsea pallens).* Oaks such as *Cyclobalanopsis gambleana* and *Quercus oxydon* are found along with these Laurel species as well. Oaks are considered excellent and efficient firewood as they burn slowly and stay hot for a longer period of time.

RHODODENDRON FOREST

This temperate vegetation is characterized by *Rhododendron arboreum,* which form both pure stands or are found in association with *Lindera pulcherrima* and *Machilus dutheii.*

MIXED BROAD- LEAVED FOREST

Temperate forests in MCA are mostly dominated by mixed broadleaf forests. Not only are they diverse in species, but also one of the most exploited forest types in terms of plant resources use. The upper limits of the broadleaf forest are represented by varieties of Maple (*Acer caesium, Acer pectinatum,* etc.), *Betula alnoides, Populus ciliata, Lyonia ovalifolia, Sorbus cuspidata* and *Ilex dipyrena.* In some places, *Betula, Acer, Populus* and *Ilex* forms pure stand. Occasionally, *Juglans regia* is also found. At lower limits, *Lindera pulcherrima* and *Machilus dutheii* along with *Viburnum erubescens* and *Pieris Formosa,* etc. are present. Areas with high human modifications are dominated by pure stands of *Lindera pulcherrima* , *Machilus dutheii* and *Pinus wallichiana.*

SUB-ALPINE FIR AND LARCH FOREST

This vegetation occurs between 3000 and 4000m. Fir (*Abies spectabilis*), and Larch (*Larix himalaica*) are found both as pure stands or mixed. Fir and Larch species in the MCA are considered the most valuable timber resources as they are used for construction of houses, poles, planks, windows, doors and making household furniture. At the southernmost areas of the MCA, fir and larch forests are limited to inaccessible slopes at higher elevations or at very far distances from the settlements whereas at western and northern areas, they can be encountered along the road, next to the settlements. Birch (*Betula utilis*) is often found growing along with *Abies spectabilis, Rhododendron campanulatum, Juniperus indica* and *Salix wallichiana.*

ALPINE SCRUBS

At the MCA, this vegetation occurs at the elevation above 3000m in the alpine zone. It is characterized by the occurrence of dwarf Rhododendrons and Juniper species. Moist alpine scrubs are characterized by dwarf and shrubby Rhododendrons such as *Rhododendron anthopogon* and *Rhododendron campanulatum* respectively and *Lonicera obovata,* etc. Dry alpine scrubs are represented by *Juniperus indica, Juniperus recurva, Juniperus squamata, Ephedra gerardiana, Berberis koehneana* and *Rosa sericea,* etc. Alpine scrubland is also an important area for summer grazing of livestock and a reservoir of medicinal and culturally important plant species.

3.1.2 Climate

Climate, the long term weather of an area, is the outcome of various factors like water condition, temperature, rainfall, evaporation, sunlight, wind and so on. Of them, temperature and rainfall are the most crucial factor determining the whole set of climate. Temperature, the hotness or coldness of a body or environment, is influenced by latitude, altitude and distance from the water body. Here, the temperature and rainfall data of district headquarter is given. The maximum temperature is in April and the minimum temperature is in January.

Similarly, rainfall is another important factor influencing the climate & vegetation. Rainfall is highest in July and lowest in November.

3.1.3 Floral diversity

Altitudinal and abundance of different types of habitats and microclimatic condition in MCA represents a unique and ideal site for the availability of varied types of flora and vegetation within short distances. The area includes 508 species of angiosperms, among which 410 species are dicotyledons and 85 species are monocotyledons, 13 species are gymnosperms and 37 species are pteridophytes (NTNC/MCAP 2013). MCA is mainly dominated by the east himalayan species like *Larix himalaica, Schima wallichii and Castonopsis indica* whereas *Picea smithiana* is the western himalayan species. The availability of the species of *Rhododendron* (*R. arboreum, R. anthopogon, R. barbatum and R. campanulatum*) is mainly in high altitude of MCA. The flora of this region is quite interesting as few flowering plants endemic to the country are found. Large numbers of medicinal plants are also found in MCA, which is very important and highly valuable like *Aconitum* spp., *Nardostachys grandiflora* (Jattamansi), *Dactylorhiza hatagirea* (Panchaunle), *Valeriana jatamansi* (Sugandawal), *Ophiocordyceps sinensis* (Yartsagunbu), etc.

3.1.4 People of MCA

Four main ethnic groups inhabit the study area: Nubripa, Kutangpa, Tsumpa and the Gurungs (Ukyab and Adhikari 2000; Bista 1972). There is very little documentation on the people and culture of MCA (Bista 1972).The four villages located near the southern park boundary are inhabited by Gurung ethnic community, the village of Lokpa is inhabited by the Tsumpa; north-western part of conservation area are inhabited by Nubripa and the remaining Namrung consider themselves Kutangpa. The ethnic affinity between these groups “has yet to be studied in depth” (Bista 1972) but all four are considered to have Tibeto- Mongol origins. They speak a form of Tibeto- Burman language. It must be noted that the Gurungs of the MCA do not speak the same language as Gurungs inhabiting other locations of Nepal. Gurungs follow both Hindu and Buddhist religion while Tsumpa, Kutangpa and Nubripa practice Tibetan- Buddhism.

3.2 Materials

Following materials had been used for both field trips; Rope, Measuring tape, Tags, Secateur, Global Positioning System (GPS), Clinometer, Herbarium press, Newspapers, Straps, Permanent markers, Hammer, Rubber bands, etc.

Methodology

Methodology comprises following steps:

3.3 Collection and Preservation

The floristic study of Nubri Valley of Manaslu Conservation Area is conducted under Institutional Research grant supported by UGC (2011- 2013). Localities of collections with altitude are given in Appendix I.

Collection of plant species was done in two different seasons of the year viz. one in the pre-monsoon and another in the post-monsoon season. First field trip was completed on 15th June, 2012 which started on 26 th May, 2012. Second field trip was completed on 12th October, 2012 which started on 28th September, 2012. Collection of angiosperms and gymnosperms was done from different sites of Gorkha distict ranging from 2200m to 4200m altitude within the plots. For the species, within the plots, 50×20m^2 of 22 plots were laid in different areas. Each plot was subdivided into 10 sub- plots and species were counted and collected. For the species outside the plots, species were just listed from 500m-5200m. The collected specimens were tagged, pressed and dried naturally. Two specimens for each species were collected as far as possible. Field notes such as location, habit, habitat, collection date, colour of flower, phenology, etc. along with their uses, local names and other information were recorded in the field notebook. Insecticides were used to preserve herbarium specimens. The specimens were mounted on the herbarium sheets of 11" × 17.5" and were labeled accordingly from the field notebook. The specimens are deposited at TUCH.

3.4 Identification

The collected specimens were identified by using authentic literatures such as *Fauna and Flora of Central Himalaya* (Kitamura 1953), *Flora of Kathmandu Valley* (DPR 1986), *Flowers of the Himalaya* (Polunin and Stainton 1997), *Flora of Nepal* (Watson *et al.* 2012), tallying with the authentic specimens housed at the National Herbarium and Plant Laboratories, Godavari, Nepal (KATH), Tribhuvan University Central Herbarium (TUCH) at Central Department of Botany, T. U., Kirtipur and also verifying with the experts. Hara *et al.* (1978, 1979 and 1982) and Press *et al.* (2000) are followed for nomenclature and author citation of the plants.

3.5 Description

The Engler and Prantl system of classification (1887-1915) has been followed in the arrangement of families. Dichotomous keys have been made to genera and species. The local names were given which were noted in the field if not from secondary literature (www. .efloras.org).

3.6 Documentation of ethnobotanical information

The primary data for documenting the use values of plants was conducted in field, interacting with the ethnic groups. While some of the species, whose use values could not be documented was taken from the secondary literatures.

3.7 Flow chart of Methodology

The whole process of methodology is given below:

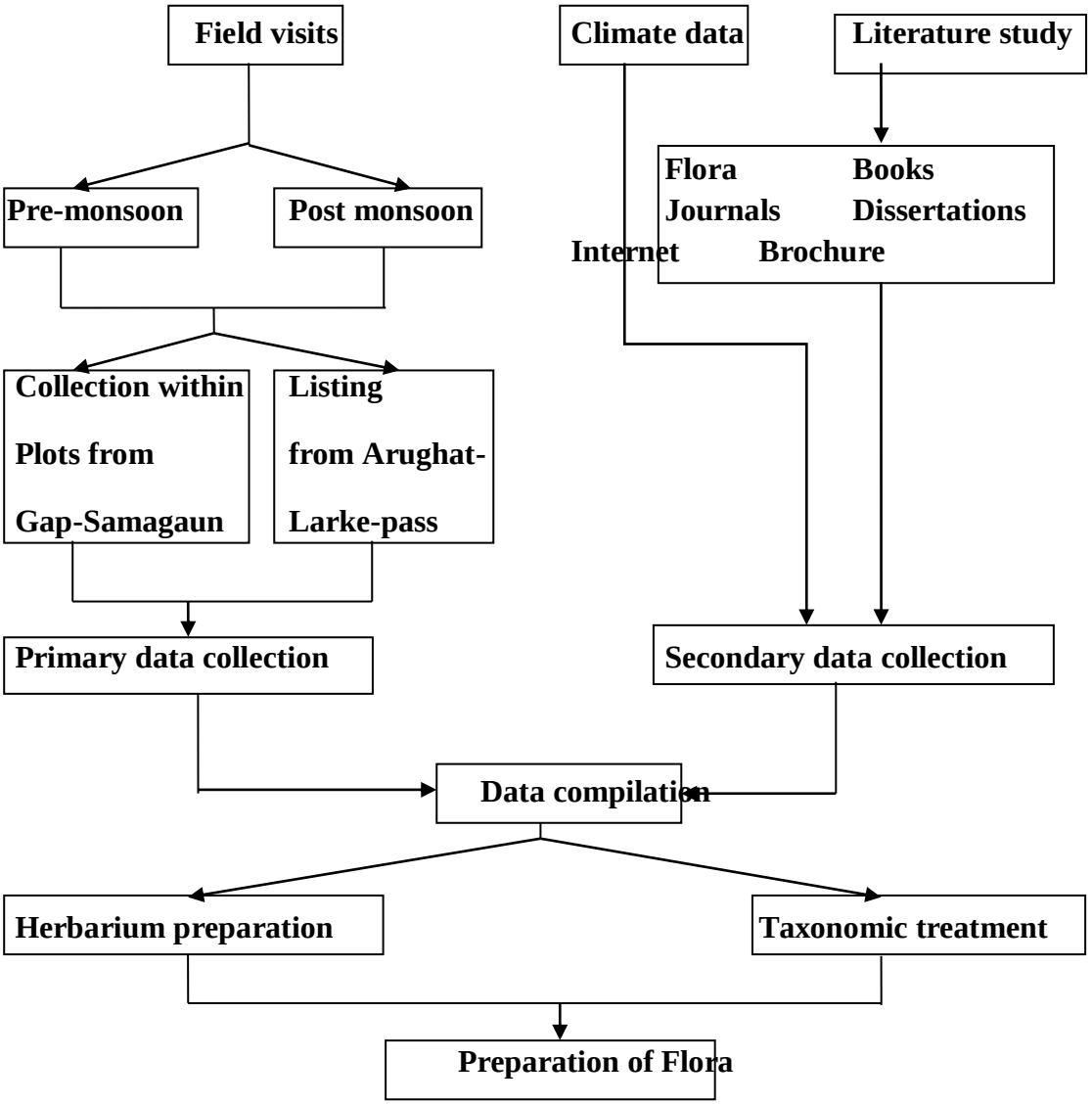

Fig. 3 Flow-chart of Methodology

4. RESULTS

4.1 Functional groups representing number of genera

A total of 81 families are observed, out of which 4 families belongs to gymnosperm, 12 families belong to monocotyledons and 65 families belong to dicotyledons.

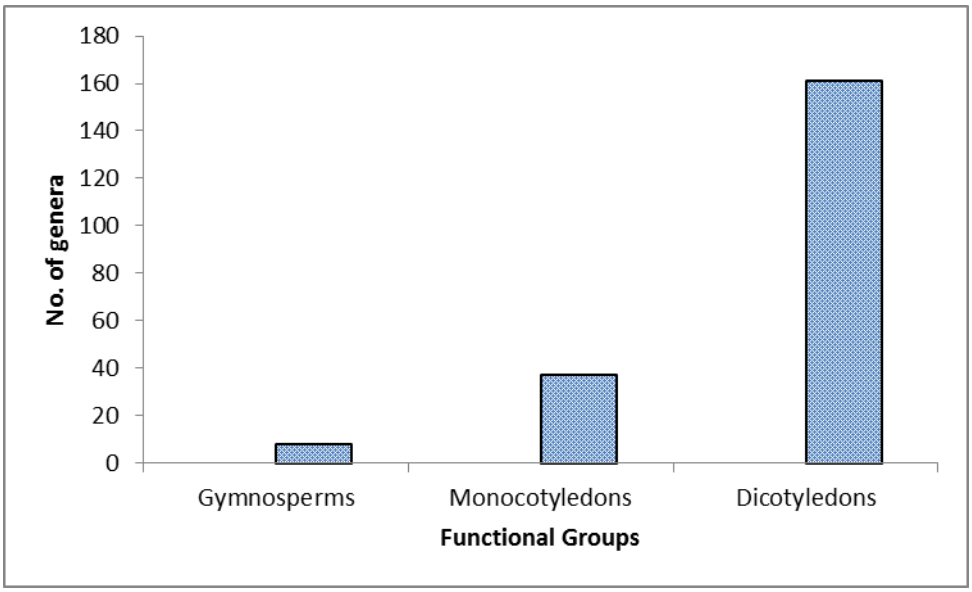

Fig. 4 Functional groups representing number of genera

Out of 206 genera and 286 species reported, 8 genera and 9 species belong to Gymnosperm, 37 genera and 48 species belong to monocotyledons and 161 genera and 229 species belong to dicotyledons.

4.2 Top ten families on the basis of genera

The most dominant family on the basis of genera is found to be Asteraceae with 21 genera and 30 species. It is followed by Liliaceae having 11 genera and 15 species, followed by Orchidaceae having 10 genera and 12 species. Fabaceae is the fourth largest family with 9 genera and 10 species which is followed by Rosaceae with 7 genera and 12 species. Labiatae, Ranunculaceae and Scrophulariaceae are with 6 genera and Ericaceae and Pinaceae has 5 genera.

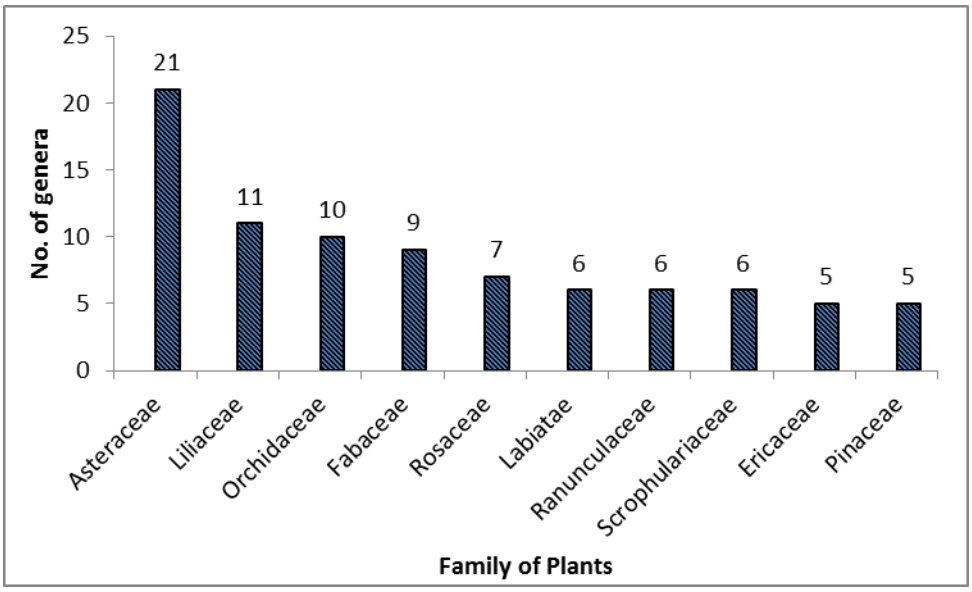

Fig. 5 Top Ten families representing number of genera.

4.3 Species with regard to habit

In the present study, 193 species of herbs, 65 species of shrubs and 29 species of trees are found. So, the most dominant habit is found to be herbs, followed by shrubs and then trees.

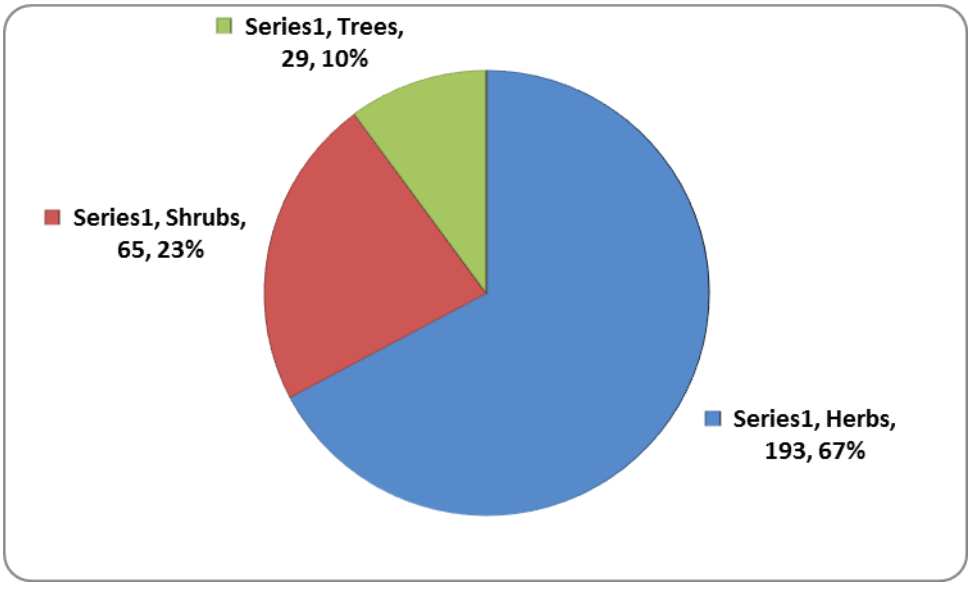

Fig. 6 Species with regard to habit

4.4 Top ten genera on the basis of number of species

Rhododendron and *Senecio* are the largest genera with six species, followed by *Hypericum, Geranium, Viburnum, Pedicularis and Zanthoxylum* with four species. It is followed by *Dioscorea, Sedum* and *Salix* with three species.

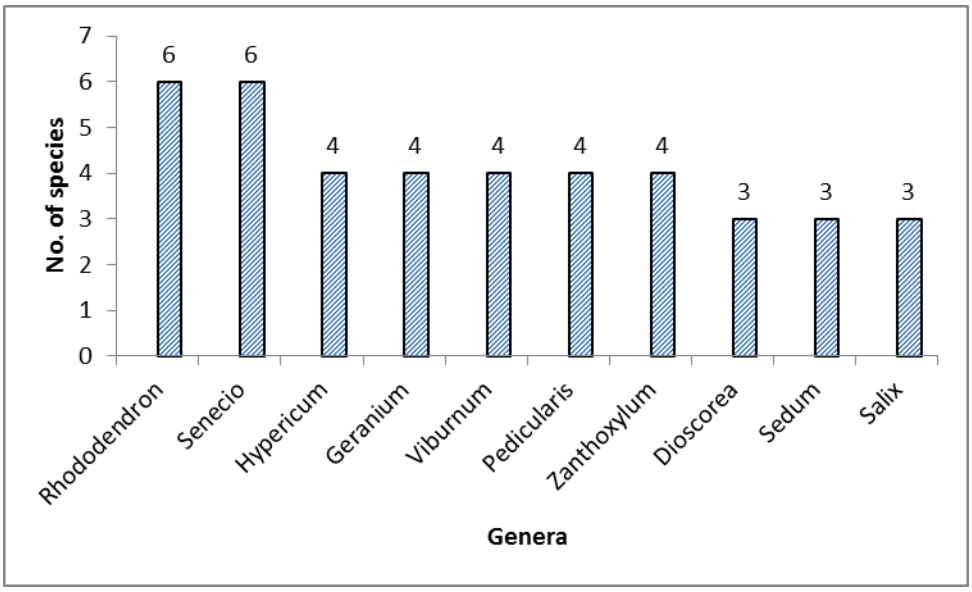

Fig. 7 Top ten genera representing number of species

From Arughat to Jagat, out of 120 species, 79 species are additional, 24 species listed from Jagat to Gap, 11 species are additional and 7 species listed from Samagaun to Larke Pass, 4 species are additional (Appendix III, IV, V).

4.5. Economic Importance

The economic importance is given below in different headings:

Fuel wood and construction purpose:

Among, 286 species, 29 species are important for fuel wood. Some examples are *Abies spectabilis, Juniperus indica, Picea smithiana, Pinus wallichiana, Betula alnoides, Betula utilis,* etc. For making furnitures *Juglans regia* is used and for construction purpose *Prinsepia utilis, Larix himalaica, Picea smithiana, Pinus wallichiana, Neolitsea pallens, Alnus nepalensis and Betula alnoides* are used. In case of adjoining areas for fuel wood, 5 species and for construction purposes, 2 species are found to be of economic value.

Fodder

From the research work, 10 species are found to be used for fodder. Some examples are *Deutzia compacta, Hydrangea heteromalla, Neolitsea pallens, Eurya acuminata* etc. From, the adjoining areas, 12 species are used as fodder.

Sacred plants

Ephedra gerardiana and *Abies spectabilis* are used for religious purpose. Leaves of *Betula utilis, Salix disperma, Rhododendron anthopogon, Rhododendron lepidotum* are used for making incense sticks. Camphor is extracted from *Cinnamomum camphora* which is used in lightning. Flowers of *Senecio cappa* are used for worshipping god.

Edible plants

Young shoots of *Asparagus racemosus* and *Urtica dioica* are consumed as vegetable. Young leaves of *Allium wallichii* and *Phytolacca accinosa* is eaten and roots of *Allium* are also used as 'jimbu'. Fruits of *Gaultheria trichophylla, Rubus paniculatus, Coriaria nepalensis, Prinsepia utilis, Viburnum mullaha* and *Sorbus cuspidata* are eaten. Fruit of *Zanthoxylum armatum* is used for making spice. Sweet nectar of *Colquhounia coccinea* flowetrs is sucked. Nuts of *Juglans regia* is eaten and also used in confectionaries. From adjoining areas, 16 species are found to be of edible values (Appendix IX).

Medicinal uses

Out of 286 species, 33 species are found to be of medicinal value. Different parts of medicinal plant species are used to cure various types of diseases. Some examples of medicinally used plants are *Bergenia ciliata, Juglans regia, Asparagus racemosus, Betula alnoides, Zanthoxylum armatum, Astilbe rivularis, Rumex nepalensis*, etc. From adjoining areas, 48 species are found to be of medicinal values (Appendix VIII).

Ornamental purpose

Two species namely *Peperomia tetraphylla and Rhododendron barbatum* are found to be of ornamental use in the study area. From the adjoining areas, 8 species are found to be of ornamental value.

Miscellaneous uses

From the study area, 8 species are found to be of other uses. Leaves of *Lyonia ovalifolia* is rolled for smoking. Sticky fruits of *Scurrula elata* are used for capturing birds. Young fruits of *Anemone vitifolia* are clustered and are used as fire starter. A valuable dye is obtained from *Rubia manjith* from roots and stem. Red coloring matter from roots is obtained from *Geranium nepalense.* Fruits yields wax from *Rhus succedena.* Ropes are made from stem and branches of *Tetrastigma serrulatum. Malva verticillata* is cultivated as a salad plant. *Alnus nepalensis* are planted as a soil binder in reforested areas. From adjoining areas, 6 species are found to be of miscellaneous values.

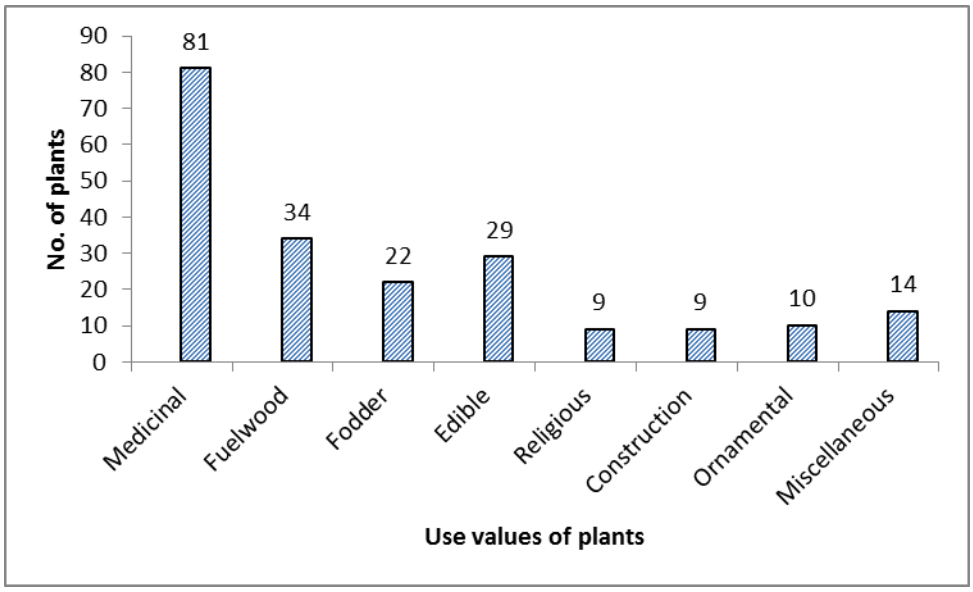

Fig. 8 Use values on the basis of number of species

4.6 TAXONOMIC TREATMENT

GYMNOSPERMS

CUPRESSACEAE

JUNIPERUS L.

Key to the species:

1a. Leaves decussate, closely appressed; fruits blue……. *J. indica*

1b. Leaves awl- shaped; fruits reddish- brown……. *J. squamata*

Juniperus indica Bertol. *Misc. Bot.* **23:** 228, t, 1 (1862); Hara *et al. in Enu. Fl. Pl. Nep.* **1**: 27 (1978); Press *et al. in Ann. Check. Fl.Pl. Nep.:* 86 (2000).'Dhupi'

J. wallichiana Hook.f. ex Parl. in *DC., Prodr*. **16:** 482 (1868).

A large, gregarious, bushy shrub of about 1 to 2m. Leaves closely appressed, overlapping, decussate. Berries 4mm to 1 cm, ovoid, blue, one-seeded. **Fr.:** May

Uses*:* For fuel and neck pain.

Voucher specimen: Gorkha, Namrung, Rupal, 3740m, May 31, 2012, S. Sapkota, SS 07 (TUCH).

Juniperus squamata D. Don in *Lamb. Desc. Pinus* **2:** 17 (1814); Press *et al. in Ann. Check. Fl.Pl. Nep.:* 86 (2000). 'Dhupi'

J. recurva var. squamata (D.Don) Parl., Hook.f., *Fl. Brit. Ind*. **5:** 647 (1888).

A dwarf, spreading, prostrate shrub, 1 to 2m high. Branchlets erect with spreading awl- shaped, spiny, leaves in whorls of three. Fruit reddish- brown, one- seeded. **Fr.:** Jun. - Jul.

Uses: For neck problem, headache and jaundice.

Voucher specimen: Gorkha, Namrung, Rupal, 3740m, May 30, 2012, S. Sapkota, SS 08 (TUCH).

PINACEAE

Key to the genera:

1a. Long shoots present; leaves not clustered……..…..2

1b. Long shoots and short shoots present; leaves on short shoots clustered……..…..4

2a. Leaves needle-like; leaf- scars raised on peg- like extensions…..……**Picea**

2b. Leaves flattened; leaf- scars raised on ridges…….……..3

3a. Cones elliptic……..……..……**Tsuga**

3b. Cones cylindrical……..……..…….**Abies**

4a. Clusters many- leaved……...……..…..**Larix**

4b. Clusters with 3 or 5 leaves……...……..……...**Pinus**

ABIES Juss.

Abies spectabilis (D. Don) Mireb. *Mem. Mus. Hist. Nat.***13**: 17 (1825); Hara *et al.* in *Enu. Fl. Pl. Nep*. **1**: 25 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 233 (2000).'Thingre sallo'

Evergreen pyramidal tree, branches whorls, branchlets opposite. Leaves sessile, linear, apex notched, borne on a disc like base. Cone erect. Male cone catkin like, terminal, smaller than female. Female cones sub terminal, dark purple. **Fl:** Apr.-Sep **Fr.:** Apr.-Sep.

Uses: For fuel and religious works.

Voucher specimen: Gorkha, above Samagaun, 3690m, June 7, 2012, S. Sapkota, SS 26 (TUCH).

LARIX Mill.

Larix himalaica Cheng & L. K. Fu, *Acta Phytotax. Sinica* **13**: 84, f. 26, 1-6 (1975); Hara *et al.* in *Enu. Fl. Pl. Nep*. **1**: 26 (1978); Press et al. in *Ann. Check. Fl. Pl. Nep.*:233 (2000).'Langtang salla'

Larix potaninii Batalin var. *himalaica* (W. C. Cheng & L. K. Fu) Farjon & Silba

A deciduous tree. Branchlets pendulous. Leaves linear, 1-2.5 cm long, flat or keeled toward base. Seed cones erect, purplish brown, maturing dark brown, cylindric, apex obtuse. **Fr.:** May

Uses: Construction purpose.

Voucher specimen: Gorkha, Lho, 2800m, June 11, 2012, S. Sapkota, SS 84 (TUCH).

PICEA Link

Picea smithiana (Wall.) Boiss., *Fl. Orient.***5**: 700 (1884); Hara *et al.* in *Enu. Fl. Pl. Nep.* **1**: 26 (1978); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:234 (2000).'Jhule sallo'

A tall tree up to 30 m or more Branches drooping. Leaves 2.5-11 cm long. Male cones axillary, solitary. Young female cones erect, reddish-green, mature ones pendulous, dark brown, ellipsoid. **Fr.:** Apr. - May

Uses: Fuel wood and construction

Voucher specimen: Gorkha, Gap, 2230m, May 30, 2012, S. Sapkota, SS 28 (TUCH).

PINUS (Tourn.) L.

Pinus wallichiana A. B. Jacks.; *Kew Bull*. **1938**: 850 (1938); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 26 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 234 (2000). 'Gobre sallla'

P.excelsa Wall. ex D. Don in *Lamb. Desc. Pinus* **2:**5, t. 3 (1824) non Lamk. (1778)- Hook.f., *Fl. Brit. Ind*.**5:** 651 (1888).

A tall symmetrical pyramidal tree to 50m with smooth slate grey bark. Leaves 15-20cm. 5 needles in single sheath on short shoot. Cones long cylindrical pendulous in clusters of 2 or 3, 15-25cm long. **Fr**: April-June.

Uses: For construction and fuel, and used for lighting.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, Oct.6, 2012, R. Tamang, RT 182 (TUCH).

TSUGA Carriere

Tsuga dumosa (D.Don) Eichler in *Engl. Et Prantl., Pfl.- fam.* 2, **1:** 80 (1887); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 26 (1978); Press et al. in *Ann. Check. Fl. Pl. Nep.*:234 (2000).'Thinge salla'

A tall evergreen tree of 40m or more. Branches drooping. Leaves, more or less distichous, apex obtuse, rounded. Female cones terminal, ovoid, 2.5 cm long. **Fr.:** May- Jun.

Uses: Wood for construction of bridge, and leaves as incense.

Voucher specimen: Gorkha, Lho, 3220m, Oct.9, 2012, S. Sapkota, SS 27 (TUCH).

TAXACEAE

TAXUS L.

Taxus wallichiana Zucc., *Abh. Bayer. Akad. Wiss*. **3**: 803, t. 5 (1843); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 307 (2000). 'Lauth sallla'

T. baccata L. subsp. *wallichiana* (Zucc.) Petger; Hara, *Fl. East. Himal*: 40 (1966).

A tree with dark green foliage and thin dark reddish gray flaking bark. Leaves linear flattened , 2-3.5cm X 3-5mm, curved spiny tipped, leathery and dark glossy green. Fruit red, fleshy.

Uses: Wood for construction purpose. Leaf and stem used for anti- cancer and stimulant.

Voucher specimen: Gorkha, Lho, 2800m, Oct.7, 2012, R. Tamang, RT 271 (TUCH).

GNETACEAE

EPHEDRA L.

Ephedra gerardiana Wall. ex Stapf in *Denkschr.Math- nat. Kl. Akad. Wiss. Wien.* **56** (2): 75 (1889); Hara *et al. in Enu. Fl. Pl. Nep.* **1**: 24 (1978); Press *et al. in Ann. Check. Fl.Pl. Nep.:* 101 (2000). 'Somlata'

A tufted shrub of 1m or more. Branches slender, erect, green, nodes characteristically jointed and each with a pair of scale leaves, connate in various degrees. Fruits ovoid, with fleshy red succulent bracts. **Fr.:** May- Jun.

Uses*:* In religious ceremonies.

Voucher specimen: Gorkha, Lho, 2800m, June 11, 2012, S. Sapkota, SS 83 (TUCH).

MONOCOTYLEDONS

POACEAE

Key to the genera:

1a. Leaf blade slightly compressed…… **Poa**

1b. Leaf blade flattened……..……...2

2a. Spikelets green…….……...**Agrostis**

2b. Spikelets purple……...**Calamagrostis**

AGROSTIS L.

Key to the species:

1a. Herb without stolon…….……..…….*A. micrantha*

1b. Herb with stolon……..*A. stolonifera*

Agrostis micrantha Steud., *Syn. Pl. Glum.* **1**: 170 (1854); Hara *et al.* in *Enu. Fl. Pl. Nep*. **1**: 120 (1978); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 122 (2000).

A tufted herb without stolon. Leaf sheaths smooth, loose, leaf blade, lanceolate, flat, thin, margin finely scabrid. Spikelets olive green. **Fl.:** Jul. - Sep. **Fr.:** Jul. - Sep.

Voucher specimen: Gorkha, Above Samagaun, 3690m, June 7, 2012, S. Sapkota, SS 82 (TUCH).

Agrostis stolonifera L., *Sp. Pl.*: 62 (1753); Hara *et a*l. in *Enu. Fl. Pl. Nep*. **1**: 120 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 122 (2000).

A tufted, stoloniferous herb. Stolons, slender, leafy, widely spreading. Leaf- sheaths smooth, leaf blade linear, flat, apex acuminate. Spikelets, yellowish green. **Fl.:** Aug.

Voucher specimen: Gorkha, Above Samagaun, 3690m, June 9, 2012, S. Sapkota, SS 123 (TUCH).

CALAMAGROSTIS Adans.

Calamogrostis pseudo-phragmites (Haller f.) Koeler, *Descr. Gram.*: 106 (1802); Hara *et al.* in *Enu. Fl. Pl. Nep*. **1**: 126 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 126 (2000).

Calamagrostis nepalensis Nees ex Steud.; Syn. Pl. Glum. **1**: 193 (1854).

A tufted, rhizomatous herb. Leaf sheaths smooth, leaf blade flat, weakly inrolled, obtuse. Panicles oblong- lanceolate. Spikelets purple, nodding. **Fl.:** Jul. - Sep. **Fr.:** Jul. - Sep.

Voucher specimen: Gorkha, Namrung, Mathilo Rupal, 4000m, Oct. 4, 2012, R. Tamang , RT 164 (TUCH).

POA L.

Poa annua L., *Sp. Pl.*: 68 (1753); Hara *et al*. in *Enu. Fl. Pl. Nep.* **1**: 142 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 138 (2000).

A tufted, stoloniferous herb. Leaf sheath, slightly compressed, thin, smooth, light green, margins scabrid. Spikelets ovate to oblong, dark green, in panicles. **Fl.:** Apr. - May **Fr.:** Apr. - Jul.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, Oct. 6, 2012, R. Tamang, RT 207 (TUCH).

CYPERACEAE

Key to the genera:

1a. Flowers unisexual; nut enclosed by utricle…….**Carex**

1b. Flowers bisexual; nut not enclosed by urticle…….2

2a. Inflorescence densly paniculate……...……..**Kobresia**

2b. Inflorescence a compound umbel…….**Fimbristylis**

CAREX L.

Carex filicina Nees ex Wight, *Contrib. Bot. Ind.* : 123 (1834); Hara *et a*l. *in Enu. Fl. Pl. Nep.* **1**: 102 (1978); Press *et al. in Ann. Check. Fl.Pl. Nep.:* 88 (2000).

An erect herb, 13-25 cm long. Leaves long, narrow, flat, midrib distinct. Panicles slender, axillary as well as terminal; spikes small, light yellow. **Fl.:** Sep. **Fr.:** Oct. - Mar.

Voucher specimen: Gorkha, Nearby Namrung, 2670m, Oct.6, 2012, R. Tamang, RT 236 (TUCH).

FIMBRISTYLIS Vahl.

Fimbristylis complanata (Retz.) Link, Hort. *Berol. Deser*. **1:** 292 (1827); Hara *et al. in Enu.Fl.Pl.Nep.* **1**: 111 (1978); Press *et al*. *in Ann. Check. Fl.Pl. Nep.:* 93 (2000).

A tufted herb. Leaves tip abruptly narrowed, sheath smooth. Spikelets narrowly ellipsoid, in compound umbel, rays flattened. Nuts obovoid, obtusely trigonous. **Fl.:** Jul. - Aug. **Fr.:** Sep.

Voucher specimen: Gorkha, Samagaun, Birendra Tal, 3610m, June 6, 2012, S. Sapkota, SS 72 (TUCH).

KOBRESIA Willd.

Kobresia gammiei C. B. Clarke, *Kew. Bull.***8:** 68 (1908); Press *et al*. *in Ann. Check. Fl.Pl. Nep.:* 94 (2000).

Kobresia williamsii T. Koyama.

A stoloniferous, elongated herb. Basal sheaths, pale reddish brown, retaining dry leaf blades. Leaves basal, flat, mibrib distinct. Inflorescence densely paniculate, reddish brown. **Fl.:** May- Aug. **Fr.:** May- Aug.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3740m, May 31, 2012, S. Sapkota, SS 13 (TUCH).

ARACEAE

Key to the genera:

1a. Spadix with a flowerless apex- the appendage……...**Arisaema**

1b. Spadix covered with flowers to the apex, appendage absent……..**Gonatanthus**

ARISAEMA Mart.

Arisaema tortuosum (Wall.) Schott., *Melet. Bot*: 17 (1832); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 91 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 14 (2000). 'Birbanka'

A fleshy herb. Leaves 2-3 pinnatisect; leaflets sessile, elliptic- lanceolate, acuminate. Spathe blade oblong- ovate, green, somewhat glaucous.

Uses: Poisonous

Voucher specimen: Gorkha, Gap, 2230m, May 31, 2012, S. Sapkota, SS 03 (TUCH).

GONATANTHUS Klotzsch

Gonatanthus pumilus (D. Don) Engler & Krause, in *Engler, Pfl.-reich* **IV-23E, Ht. 71**: 19, t. 5a-m (1920); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 91 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 14 (2000). 'Leldhamkhos'

A tuberous herb, bearing slender branches with small bulbils. Leaves ovate- oblong, heart- shaped often mottled blade, attached to the stalk in the middle. **Fl.:** Jun. - Aug.

Voucher specimen: Gorkha, Gap, 2230m, May 31, 2012, S. Sapkota, SS 23 (TUCH).

COMMELINACEAE

COMMELINA Plum. ex. L.

Commelina paludosa Blume, *Enum. Pl. Jav*. **1**: 2 (1827); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 82(1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 48 (2000).'Kaane sag'

An erect herbaceous plant. Stems sparsely branched, rooting at lower nodes. Leaves broad, lanceolate with sheathing bases, acute, entire. Flowers borne in the axils of obliquely funnel- shaped leafy bracts, white in colour. **Fl.:** Jun. - Aug.

Voucher specimen: Gorkha, Lho, 2340m, June 2, 2012, S. Sapkota, SS 128 (TUCH).

JUNCACEAE

Key to the genera:

1a. Leaf margin hairy; seeds three in number……..**Luzula**

1b. Leaf margin glabrous; seeds numerous……..…..**Juncus**

JUNCUS (Tourn.) L.

Key to the species:

1a. Flowers in dense clusters……*J. himalensis*

1b. Flowers in solitary head…….……..2

2a. Leaf- sheath brown…….……*J. gracilicaulis*

2b. Leaf- sheath reddish brown……*J. thomsonii*

Juncus gracilicaulis A. Camusute.; in *Lecomte, Notul. Syst. (Paris).***1**: 279(1910).

Juncus concinnus D. Don var. *gracilicaulis* (A. Camus) R. C. Srivastava.

A tufted herb. Leaves thread- like, longer than the stem, hollow, acuminate. Flowers, in a solitary head, white in colour, subtended by greenish bracts. **Fl.:** Jun. - Jul. **Fr.:** Aug. - Sep.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 33740m, May 31, 2012, S. Sapkota, SS 118 (TUCH).

Juncus himalensis Klotzsch, *Bot. Ergebn. Reise Waldemar*. 60, t. 97 (1862); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 84 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 149 (2000).

A tufted grass- like herb. Leaves cylindrical, hollow, channeled above, shorter than the stem. Flowers, in two or more dense dark brown clusters, subtended by longer leafy bracts. **Fl.:** Jun. - Aug.

Voucher specimen: Gorkha, Samagaun, 4000m, June 9, 2012, S. Sapkota, SS 129 (TUCH).

Juncus thomsonii Buchenau, *Bot. Zeit.***25**: 148 (1867); Hara *et al.* in *Enu. Fl. Pl. Nep*. **1**: 85(1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 150 (2000).

A tufted herb. Leaves all sub- basal, leaf- sheath reddish brown, membranous, acuminate, linear. Flowers terminal, solitary, 2-8 flowered, bracts 3 or 4, spreading. **Fl.:** Jul. - Aug. **Fr.:** Aug. - Sep.

Voucher specimen: Gorkha, Namrung, Karka, 3365m, Oct. 4, 2012, R. Tamang, RT 202 (TUCH).

LUZULA DC.

Luzula multiflora (Retz.) Lej., *Fl. Env. Spa* **1**: 169 (1811); Hara *et al.* in *Enu. Fl. Pl. Nep*. **1**: 85(1978); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 150 (2000).

A densely, tufted hairy herb. Stolons few. Lower leaves several, upper leaves few, leaf blade, linear-lanceolate, flat, acute. Flowers 4-10, subumbellate, borne on erect branches. **Fl.:** May- Jul. **Fr.:** Jul. - Aug.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3740m, May 31, 2012, S. Sapkota, SS 15 (TUCH).

LILIACEAE

Key to the genera:

1a. Rootstock a bulb……..…..2

1b. Rootstock not bulbous, but creeping or branched…….……...3

2a. Bulbs with a fleshy overlapping scales……...……..….**Lilium**

2b. Bulbs without scales…….**Fritillaria**

3a. Leaves scaly, cladodes present…….**Asparagus**

3b. Leaves not scaly, cladodes absent……...……4

4a. Leaves radical or subradical……5

4b. Leaves cauline……...……...7

5a. Flower borne at the apex of stem, surrounded by leaves……..**Trillidium**

5b. Flower not borne at apex of stem and not surrounded by leaves……....6

6a. Flowers with spreading petals……..…**Ophiopogon**

6b. Flowers without spreading petals…….…...**Theropogon**

7a. Corolla tubular…….....**Polygonatum**

7b. Corolla elliptic- acute……..……**Streptopus**

ASPARAGUS Tourn. ex. L.

Key to the species:

1a. Spines absent; leaflets curved…….*A. filicinus*

1b. Spines recurved; leaflets straight…….*A. racemosus*

Asparagus filicinus Buch.- Ham. ex D. Don, *Prodr. Fl. Nepal.*: 49 (1825); Hara *et al.* in *Enu. Fl. Pl. Nep.* **1**: 71(1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 184 (2000). 'Van Kurilo

A tall, erect plant. Roots tuberous. Stem variable. Spines absent. Leaves linear- subulate, much smaller, curved. **Fl.:** May- Jun.

Uses: Tender shoots eaten as vegetable.

Voucher specimen: Gorkha, Lho, 2800m, June 7, 2012, S. Sapkota, SS 78 (TUCH).

Asparagus racemosus Willd., *Sp. Pl.* **2:** 152 (1799); Hara *et al.* in *Enu. Fl. Pl. Nep*. **1**: 71(1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 184 (2000). 'Kurilo'

A tall woody, spinose much branched under-shrub, rootstock tuberous. Leaves linear-subulate. Spines recurved. Flowers white, on short pedicels. Fruit a berry, globose, shiny red. **Fl.:** Mar.

Uses: Tubers diuretic, aphrodisiac, tonic, appetizer, carminative.

Voucher specimen: Gorkha, Shyalla, 3050m, June 7, 2012, S. Sapkota, SS 74 (TUCH).

FRITILLARIA L.

Fritillaria cirrhosa D. Don, *Prod. Fl. Nep.*: 51 (1825)*;* Hara *et al. in Enu. Fl. Pl. Nep.* **1**: 72 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 185 (2000).

A bulbous herb, upto 45cm high. Leaves, lower opposite, upper whorled, uppermost with cirrhose tips, linear to narrowly oblong. Flowers 1-2, terminal, nodding, dull yellow with dull purple blotching. Capsules green. **Fl.:** May-Sep. **Fr.**: May-Sep.

Voucher specimen: Gorkha, Samagaun, Birendra Tal, 3610m, June 6, 2012, S. Sapkota, SS 77 (TUCH).

LILIUM L.

Key to the species:

1a. Flowers dull- purple in colour…….*L. nanum*

1b. Flowers creamy yellow with chocolate centres……*L. nepalense*

Lilium nanum Klotzsch, *Bot. Ergebn. Reise Waldemar*. 53 (1862); Hara *et al.* in *Enu. Fl. Pl. Nep.* **1**: 73 (1978); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 185 (2000).

A slender, bulbous herb. Leaves sessile, alternate, linear, obtuse, and uppermost much over topping the flower. Flowers, drooping, dull- purple, bell- shaped. **Fl.:** Jun. - Jul.

Voucher specimen: Gorkha, Samagaun, Birendra Tal, 3610m, June 6, 2012, S. Sapkota, SS 119 (TUCH).

Lilium nepalense D. Don, *Mem. Wern. Nat. Hist. Soc*. **3:** 412 (1831); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 74 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 185 (2000). 'Khiraula'

A tall, glabrous herb. Leaves many, broadly lanceolate, alternate, short- petioled, 5-7 nerved, acuminate. Flowers large, creamy yellow with chocolate centres, in drooping, solitary racemes.

Voucher specimen: Gorkha, Lho, 2800m, Oct. 7, 2012, R. Tamang, RT 237 (TUCH).

OPHIOPOGON Ker- Gawl.

Ophiopogon intermedius D. Don, *Prodr. Fl. Nepal.*: 48 (1825); Hara *et al.* in *Enu. Fl. Pl. Nep*. **1**: 75(1978); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 186 (2000). 'Ban kasur'

A small, tufted herb. Leaves linear, tufted, grass- like long, lanceolate, many. Flowers, small, white, in terminal spike- like clusters, drooping, borne on leafless stems. **Fl.:** May- Jul.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, June 4, 2012, S. Sapkota, SS 76 (TUCH).

Ophiopogon sp.

A small tufted herb. Leaves many, grass- like, long, lanceolate. Flowers white, drooping in spike- like clusters, borne on the leafless stems.

Voucher specimen: Gorkha, Namrung, 3365m, June 4, 2012, S. Sapkota, SS 75 (TUCH). .

POLYGONATUM Miller

Polygonatum cirrhifolium (Wall.) Royle, *III. Bot. Himal. Mts*. **1**(10): 380 (1839); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 77 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 187(2000).

A tall, glabrous herb. Stem densely purple spotted. Leaves in whorled, of 3-6, linear-lanceolate, circinate at the tip, membranous and glaucous beneath. Flowers, white tinged with green, in short- stalked clusters of 2-4, from the axils of the whorled leaves. **Fl.:** May-Sep. **Fr**: May-Sep.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3750m, May 31, 2012, S. Sapkota, SS 16 (TUCH).

STREPTOPUS Michx.

Streptopus simplex D. Don, *Prodr. Fl. Nepal.*: 48 (1825); Hara *et al.* in *Enu. Fl. Pl. Nep.* **1**: 80 (1978); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 188 (2000).

An erect plant with flexuous forked leafy stems. Leaves elliptic, acute with heart- shaped clasping base, glaucous beneath. Flowers, small white, solitary, pendulous, long- stalked, arising from the axils of most of the leaves. Fruit, a berry. **Fl.:** Jun. - Aug.

Voucher specimen: Gorkha, Namrung, 2430m, Oct. 6, 2012, R. Tamang, RT 238 (TUCH).

THEROPOGON Maxim.

Theropogon pallidus (Kunth) Maxim., *Bull. Acad. Imp. Sci. Saint- Petersbourg* **15:** 90 (1871); Hara *et al*. in *Enu. Fl. Pl. Nep.* **1**: 80(1978); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 188 (2000).

A tufted herb. Leaves grass- like, linear, out curved, sheathing at the base, radical, acuminate. Flowers, pink, in terminal racemes, drooping. Fruit green, mottled. **Fl.:** Jun. - Aug.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, Oct. 6, 2012, R. Tamang, RT 203 (TUCH).

TRILLIDIUM Kunth.

Trillidium govanianum (D. Don) Kunth, *Enum. Pl.* **5:** 120 (1850); Hara *et al.* in *Enu. Fl. Pl. Nep.* **1**: 80(1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 189 (2000).

An erect herb. Leaves 3, broadly ovate, acute, short- stalked. Flowers borne at the apex of the stem, solitary, brown- purple. **Fl.:** May- Jun.

Voucher specimen: Gorkha, Gap, 2230m, May 30, 2012, S. Sapkota (TUCH), Plate III (f)

SMILACACEAE

Key to the genera:

1a. Flowers in terminal spike- like or branched clusters……..**Smilacina**

1b. Flowers in axillary umbels……...……..**Smilax**

SMILACINA Desf.

Smilacina oleracea (Baker) Hook. f. in *Fl. Brit. India* **6 (18):** 323 (1892); Hara *et al*. in *Enu. Fl. Pl. Nep.* **1**: 78 (1978); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 187 (2000).

A leafy erect herb. Leaves alternate, broadly elliptic, in two ranks, distinctly ciliated on the margin, short- petioled, acuminate. Flowers, pure white, in spreading branched terminal spike- like clusters. **Fl.:** May- Jun.

Uses: Young plants make good boiled vegetables.

Voucher specimen: Gorkha, Above Samagaun, 3690m, June 7, 2012, S. Sapkota, SS 80 (TUCH).

SMILAX (Tourn.) L

Key to the species:

1a. Leaves ovate, deltoid, hastate……..……...*S. aspera*

1a. Leaves oblong, lanceolate……..……*S. ferox*

Smilax aspera L., *Sp. Pl.:* 1028 (1753); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 78 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 187 (2000).'Kuku Daaino'

A large climbing shrub. Leaves ovate, deltoid, base hastate, 5-9 nerved, acuminate, petioled, tendrils paired, arising from the base of the leaf- stalk. Fruit a blue- black berry. **Fl.:** Aug-Dec. **Fr.:** Aug.-Dec.

Voucher specimen: Gorkha, Samagaun, 3570m, June 8, 2012, S. Sapkota, SS 79 (TUCH).

Smilax ferox Wall. ex Kunth. *Enu. Pl*. **5**: 251 (1850); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 78 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 188 (2000).

A large climbing shrub, old stem with prickle. Leaves lanceolate to oblong, glaucous beneath, acuminate, petioled, tendrils few or absent. **Fl.:** Apr. - Nov. **Fr:** Apr. - Nov.

Voucher specimen: Gorkha, Gap, 2230m, May 30, 2012, S. Sapkota, SS 05 (TUCH).

AMARYLLIDACEAE

ALLIUM L.

Allium wallichii Kunth, *Enum. Pl*. **4:** 443 (1843); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 65 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 9 (2000).'Lasun saag'

A tall, stout herb. Leaves many, linear or spear- shaped, flat and keeled, acute, often as long as acutely 3- angled flowering stem. Flowers, purple, in many- flowered umbels, pedicel much longer than the flowers. **Fl.:** Aug. - Sep.

Uses: Young leaves eaten as vegetable. Roots used as 'jimbu', a kind of spice.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3710m, May 31, 2012, S. Sapkota, SS 117 (TUCH).

HYPOXIDACEAE

HYPOXIS L.

Hypoxis aurea Lour., *Fl. Cocchinch*.: 200 (1790); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 66 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 147 (2000).'Van siru'

A small, grass-like herb. Leaves linear, upper surface covered with white hairs, acute. Flowers, yellow, solitary, on a long peduncle. **Fl.:** June

Voucher specimen: Gorkha, Gap, 2230m, May 30, 2012, S. Sapkota, SS 04 (TUCH).

DIOSCOREACEAE

DIOSCOREA L.

Keys to the species

1a. Leaves simple……..……..…2

1b. Leaves palmately compound……...*D. hispida*

2a**.** Stem winged; surface rough…….*D. bulbifera*

2b.Stem unwinged; surface smooth……..*D. deltoidea*

Dioscorea bulbifera L., *Sp. Pl*.: 1033 (1753); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 67 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 98 (2000). 'Ban Tarul'

A herbaceous climber. Leaves deeply cordate, glabrous, alternate, dark- green, acuminate, broad. Petiole as long as the blade. Flowers minute, greenish- white. **Fl.**: Jun. - Jul. **Fr.**: Aug. - Sep.

Uses: Tubers used as vegetables.

Voucher specimen: Gorkha, Gap, 2230m, May 30, 2012, S. Sapkota, SS 33 (TUCH).

Dioscorea deltoidea Wall. ex Griseb., *Fl. Bras. (Martius)* **3(1):** 43 (1842), in nota; Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 67 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 98 (2000).'Bhyakur'

A herbaceous climber. Leaves alternate, membranous, broad, ovate, cordate, acuminate, upper surface glabrous, lower surface with small bristly. Capsules 4-6 on each matured spike. **Fl.:** May- Jun. **Fr.:** Jul. - Aug.

Uses: Tubers used as vegetables.

Voucher specimen: Gorkha, Namrung, 2860m, Oct. 5, 2012, R. Tamang (TUCH), Plate IV (f).

Dioscorea hispida Dennst., *Schlussel Hortus Malab.:* 33 (1818); Hara *et al.* in *Enu. Fl. Pl. Nep*. **1**: 67 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 98 (2000).

A herbaceous climber. Leaves alternate, palmately 3- foliate, leaflets ovate- elliptic, apex acuminate, margin entire. Capsule long, ellipsoid, leathery, winged. **Fl.:** Apr. - May **Fr.:** Jul. - Sep.

Uses: Tubers used as vegetables.

Voucher specimen: Gorkha, Namrung, 2860m, Oct. 5, 2012, R. Tamang (TUCH), Plate II (f).

IRIDACEAE

IRIS L.

Iris goniocarpa Baker, *Gard. Chron*, n.s. **6:** 479 (1876): Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 64 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 148 (2000).

An erect, rhizomatous herb. Leaves linear, acuminate, few, longer than the inflorescence. Flowers, liliac, usually solitary, shortly stalked, with a conspicuous and copius yellow beard. **Fl.:** Jun. - Jul.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3740m, May 31, 2012, S. Sapkota, SS 14 (TUCH).

ZINGIBERACEAE

Key to the genera:

1a. Flowers purple; dorsal petal broad, more or less hooded……...…….**Roscoea**

1b. Flowers yellow, orange or white; dorsal petal narrow……..….**Cautleya**

CAUTLEYA Royle ex. Hook. f.

Cautleya gracilis (Sm.) Dandy in *Journ. Bot*. **70:** 328 (1932); Hara *et al.* in *Enu. Fl. Pl. Nep*. **1**: 59 (1978); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 329 (2000).

A herbaceous plant. Leaves sessile, alternate, oblong- lanceolate, long- acuminate. Flowers small, few, distinct, in terminal spike. **Fl.:** July

Voucher specimen: Gorkha, Nearby Namrung, 2670m, Oct. 6, 2012, R. Tamang, RT 240 (TUCH).

ROSCOEA Sm.

Roscoea purpurea Sm., *Exot. Bot.***2**: 97, t. 108 (1806); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 61 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 331 (2000).'Kakoli'

A small leafy herb. Leaves sessile, oblong, leaf- sheaths broad, overlapping. Flowers purple, borne on a short leafy stem. **Fl.:** Jun. - Aug.

Uses: Roots used in veterinary medicine.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, June 10, 2012, S. Sapkota, SS 124 (TUCH).

ORCHIDACEAE

Key to the genera:

1a. Flowers with a spur or spurs……...2

1b. Flowers without a spur……6

2a. Flowers predominantly pink or purple……3

2b. Flowers predominantly white, green or yellow……...**Habenaria**

3a. Presence of pseudobulbs…… 4

3b. Presence of fleshy tubers…… 5

4a. Flowers in erect racemes……..…..... **Calanthe**

4b. Flowers in spike- like clusters…….. **Ponerorchis**

5a. Presence of a single conical spur……... **Eulophia**

5b. Presence of paired curved spurs……...…… **Satyrium**

6a. Flowers predominantly white…….…….. 7

6b. Flowers predominantly green…… 9

7a. Leaf solitary…….…….. **Nervilia**

7b. Leaves numerous……..…….. 8

8a. Anther terminal…….…..... **Cephalanthera**

8b. Anther posticous, vertical, but inverted……..…. **Goodyera**

9a. Lip divided into hypochile and epichile……**Epipactis**

9b. Lip not divided……..……**Herminium**

CALANTHE R. Br.

Keys to the species:

1a. Flowers in erect raceme……...*C. alpina*

1b. Flowers in terminal spike- like clusters……*C. tricarinata*

Calanthe alpine Hook. f., *Fol. Orchid., Calanthe*: 4 (1854); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 34 (1978); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:210 (2000).

A terrestrial orchid with pseudo-bulbous, pseudo-stem. Flowers in erect racemes, many- flowered. Floral bracts persistent, narrowly lanceolate.

Voucher specimen: Gorkha, Gap, 2230m, Oct. 6, 2012, R. Tamang, RT 204 (TUCH).

Calanthe tricarinata Lindl., *Gen. Sp. Orchid. Pl*.: 252 (1833); Hara *et al.* in *Enu. Fl. Pl. Nep*. **1**: 35 (1978); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:211 (2000).'Sungava'

A terrestrial orchid with pseudobulbs. Leaves broadly oblanceolate, acute, entire. Flowers in a terminal spike- like clusters, greenish yellow in colour. **Fl.:** Jun. - Jul.

Voucher specimen: Gorkha, Namrung, 2430m, June 10, 2012, S. Sapkota, SS 122 (TUCH).

CEPHALANTHERA Rich.

Cephalanthera longifolia (L.) Fritsch.,*Oesterr. Bot. Zeitschr*. **38**: 81 (1888); Hara *et al.* in *Enu. Fl. Pl. Nep*.**1:** 35 (1978); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:211 (2000).

A terrestrial leafy herb with fibrous roots. Leaves sessile, alternate, in two ranks, curved, lanceolate, clasping the stem. Flowers white in a terminal spike- like cluster. Epichile 4- ribbed, concave towards the apex. **Fl.:** May- Jun.

Voucher specimen: Gorkha, Lho, 3220m, Oct. 6, 2012, R. Tamang, RT 258 (TUCH).

EPIPACTIS Zinn.

Keys to the species:

1a. Flower color green……..*E. helleborine*

1b. Flower color green, veined with red……*E. royleana*

Epipactis helleborine (L.) Crantz., *Stirp. Austriac*. ed 2, **2**: 467 (1769); Hara *et al.* in *Enum. Fl. Pl. Nep*. **1**: 41 (1978); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:215 (2000).

A terrestrial orchid with fibrous roots. Leaves many, the lower elliptic, the upper narrower and grading into the linear bracts. Flowers greenish, numerous in dense spike. **Fl.:** Jul. - Aug.

Voucher specimen: Gorkha, Lho, 3220m, Oct. 6, 2012, R. Tamang, RT 257 (TUCH).

Epipactis royleana Lindl., *Gen. Sp. Orchid. Pl*.: 461 (1840); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 41 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*:215 (2000).'Chhasakrungai'

A terrestrial orchid with fibrous roots. Leaves linear- lanceolate, clasping the stem, acuminate. Flowers borne in a lax spike, green in color and veined with red. **Fl.:** Jun- Jul.

Voucher specimen: Gorkha, Lho, 3220m, Oct. 6, 2012, R. Tamang, RT 258 (TUCH).

EULOPHIA R. Br.

Eulophia sp.

A terrestrial orchid with fleshy tubers. Leaves 2, ovate, apex obtuse, appearing with flowering spikes. Flowers appearing before the leaves.

Voucher specimen: Gorkha, Lho, 2800m, Oct. 6, 2012, R. Tamang, RT 280 (TUCH).

GOODYERA R.Br.

Goodyera biflora (Lindl.) Hook. f., *Fl. Brit. India*. **6**: 114. 1890; Hara *et al*. in *Enum. Fl. Pl. Nep*. **1**: 44 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*:217 (2000).

A terrestrial leafy herb, with stem creeping below. Leaves thick, petioled, broad, ovate-lanceolate, acute. lower part pale- purplish red, upper part green with reticulate venation. **Fl.:** Jul.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3740m, June 8, 2012, S. Sapkota, SS 81 (TUCH).

HABENARIA Willd.

Habenaria pectinata D. Don, *Prodr. Fl. Nepal*.: 24 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 46 (1978); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:218 (2000).

A terrestrial orchid. Leaves sessile, lanceolate, clasping the stem, acute. Flowers white in racemes, dense, with many flowers, petals linear, glabrous, lip 3- lobed, side lobes deeply pectinate. **Fl.:** Jul. - Aug.

Voucher specimen: Gorkha, Samagaun, Birendra Tal, 3610m, Oct. 8, 2012, R. Tamang, RT 259 (TUCH).

HERMINIUM L.

Herminium mackinnonii Duthie.,*J. Asiat. Soc. Bengal* **71**(2): 44 (1902); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 46 (1978); *Press et al.* in *Ann. Check. Fl. Pl. Nep.*:218 (2000).

A terrestrial tuberous herbs. Tubers oblong. Leaves few, cauline, linear- oblong, acuminate, sheathing at the base. Flowers green, small, crowded in spikes. **Fl.:** Aug.

Voucher specimen: Gorkha, Lho, 3220m, Oct. 6, 2012, R. Tamang, RT 206 (TUCH).

NERVILIA Comm. ex Gaudich.

Nervilia aragoana Gaudich., *Voy. Uranie, Bot.* : 422. 1829; Hara *et al.* in *Enu. Fl. Pl. Nep*. **1**: 50 (1978); *Press et al.* in *Ann. Check. Fl. Pl. Nep.*:221 (2000).

A terrestrial tuberous orchid. Flowers solitary, few in racemes, nodding and opening widely. Floral bracts linear- lanceolate. **Fl.:** May

Voucher specimen: Gorkha, Samagaun, 3600m, Oct. 8, 2012, R. Tamang, RT 260 (TUCH).

PONERORCHIS Rchb.f.

Ponerorchis chusua (D. Don) Soo, *Acta Bot. Acad. Sci. Hung.* **12:** 352 (1966); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 55 (1978); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.:224 (2000).

A terrestrial orchid. Stem erect with tubular sheaths at base. Leaves linear- lanceolate, apex acute. Inflorescence erect with many flowers. Flowers purplish- red. **Fl.**: Jun. - Aug.

Voucher specimen: Gorkha, Samagaun, Birendra Tal, 3610m, June 8, 2012, S. Sapkota, SS 143 (TUCH).

SATYRIUM Sw.

Satyrium nepalense D. Don, *Prodr. Fl. Nep*.: 26 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **1**: 56 (1978); *Press et al.* in *Ann. Check. Fl. Pl. Nep*.: 225 (2000).

A terrestrial orchid with erect and glabrous stem. Tubers ovoid. Leaves basal, 3, oblanceolate, sub-basal, fleshy. Flowers, many, on terminal peduncle, pinkish white.

Voucher specimen: Gorkha, Nearby Namrung, 2670m, Oct. 6, 2012, R. Tamang, RT 239 (TUCH).

DICOTYLEDONS

PIPERACEAE

PEPEROMIA Ruiz and Pav.

Peperomia tetraphylla (Forst. F.) Hook. & Arn., *Bot. Bech. Voy.* **96** (1832); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 181 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:234 (2000).

A fleshy densely tufted epiphytic herb. Stem ridged. Leaves 4- nately whorled at each node, upper pair sometimes opposite, sessile, orbicular 3- nerved, coriaceious, pubescent beneath and glabrous above.

Uses: For ornamental purposes.

Voucher specimen: Gorkha, Above Namrung, 2225m, June 2, 2012, S. Sapkota, SS 56 (TUCH).

SALICACEAE

Key to the genera:

1a. Buds with several scales……..……..……**Populus**

1b. Buds with a single covering scale……..…**Salix**

POPULUS L.

Populus ciliata Wall. ex Royle, ; *Ill. B. Him*. 346, t. 98 (84a), f. 1 (1839); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 217 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:282 (2000).'Bhote pipal'

A large tree with smooth greenish bark. Leaves large, petioled, broadly ovate, heart- shaped, acuminate, toothed, pale and usually minutely hairy beneath. **Fl.**: Mar. - Apr.

Uses: Religious purpose.

Voucher purpose: Gorkha, Namrung, 2920m, Oct. 5, 2012, R. Tamang, RT 231 (TUCH).

SALIX Tourn. ex. L.

Key to the species:

1a. A tree…….*S. disperma*

1b. A prostrate shrub……..……2

2a. Leaves obovate, distantly serrulate……*S. hylematica*

2b. Leaves oblanceolate, entire……..…….*S. sikkimensis*

Salix disperma Roxb. ex D. Don, *Prodr. Fl. Nep.* 58 (1825); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*:283 (2000).

A tree upto 10m tall. Leaves oblong- lanceolate, margins entire, acute, petioled, lower surface with grey hairs. Catkins appearing before leaves, on stalks up to 1 cm long. **Fl.:** May- Jun.

Uses: Fuel wood, incense.

Voucher specimen: Gorkha, Lho, 3220m, June 9, 2012, S. Sapkota, SS 112 (TUCH).

Salix hylematica C. K. Schneid.*; Sarg., Pl. Wilson.* **3**: 456 (1917); Hara *et al.* in *Enu. Fl. Pl. Nep*. **3**: 218 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:282 (2000).

Salix fruticulosa Andersson

A small, prostrate shrub. Leaves small, alternate or sub- opposite, petioled, oblong- obovate, acute, distantly serrulate. Female catkins long- peduncled, terminal, many- flowered. **Fl.:** May- Jun.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 3050m, June 11, 2012, S. Sapkota, SS 111 (TUCH).

Salix sikkimensis Andersson, *Prodr*.**16 (2)**: 269 (1868) ; Hara *et al.* in *Enu. Fl. Pl. Nep*. **3**: 219 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 283 (2000).

A small shurb upto 4m. Leaves oblanceolate, entire, silky haired. Catkins appearing with young leaves, pendulous. **Fl**. May-Jun. **Fr**. Jul.-Sep.

Voucher specimen : Gorkha, Namrung, Namla Gumba, 3050m, June 11, 2012, S. Sapkota, SS 67 (TUCH).

JUGLANDACEAE

JUGLANS L.

Juglans regia L., *Ann. Sci. Nat.* ser. 4, **18:** 32 & 33 (1862); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 213 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 148 (2000).'Okhar'

A large deciduous tree. Leaves pinnate, leaflets 5- 13, elliptic to ovate pointed, entire, leathery. Fruit green, drupes, containing wrinkled nuts. **Fl.:** Feb. - Apr.

Uses: Nuts are edible. Bark paste of stem is applied in treating joint pain and swellling

Voucher specimen: Gorkha, Lho, 2800m, June 2, 2012, S. Sapkota, SS 09 (TUCH).

BETULACEAE

Key to the genera:

1a. Stamens 4, filaments not lobed……. **Alnus**

1b. Stamens 2, filaments bifid……..……**Betula**

ALNUS Miller

Alnus nepalensis D. Don, *Prodr.Fl. Nep.*: 58(1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 213(1982); Press *et al*. in *Ann. Check. F1. P1. Nep*.:27 (2000).'Utis'

A deciduous tree. Leaves broadly elliptic, acute, base cuneate, pubescent on veins, petiolate. Male catkins in terminal panicles to 10 cm long. Female catkins short, cone like. **Fl.:** Oct. - Dec.

Uses: Fuel wood and construction.

Voucher specimen: Gorkha, Namrung, 2430m, Oct. 6, 2012, R. Tamang, RT 217 (TUCH).

BETULA L.

Key to the species:

1a. Leaves lanceolate, apex acuminate……..……..….. *B. alnoides*

1b. Leaves ovate, apex acute……..…..…… *B. utilis*

Betula alnoides Buch.- Ham. ex D. Don, *Prodr. Fl. Nepal*: 58 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 213 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 27 (2000).'Lekh painu'

A large tree. Leaves petioled, lanceolate, acuminate, unequally doubly or trebly serrated, gland-dotted beneath. Female catkins long, slender in clusters. **Fl.:** Nov. - Dec.

Uses: Fuel wood and to make furnitures. Bark used to cure backpain and jointache and menstrual disorder.

Voucher specimen: Gorkha, Namrung, 2920m, Oct. 5, 2012, R. Tamang, RT 170 (TUCH).

Betula utilis D. Don, *Prodr. Fl. Nep.:* 58(1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **9**: 213 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 27(2000). 'Bhojpatra'

A tree up to 15m. Branchlets warty glandular. Leaves ovate, acute, coarsely toothed, short- petioled, pubescent on veins and glandular beneath. **Fl.:** Apr. - May

Uses: Fuel wood and leaves as incense.

Voucher specimen: Gorkha, Shyalla, 3690m, June 7, 2012, S. Sapkota, SS 33 (TUCH).

FAGACEAE

QUERCUS (Tourn.) L.

Quercus semecarpifolia Sm., *Cycl*. **29**: n. 20(1814); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 216(1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 112(2000).'Khasroo'

A big tree upto 20m. Leaves alternate, oblong- elliptic, margin revolute, spinuous toothed, glabrous on both sides. Acorn subglobose, 2-3cm, turbinate or mucronate, solitary. **Fl**: May-Jun. **Fr**: Jun.-Aug.

Uses: Fuel wood, fodder

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, June 4, 2012, S. Sapkota, SS 44 (TUCH).

URTICACEAE

Key to the genera:

1a. Plants with stinging hairs……..……..**Urtica**

1b. Plants without stinging hairs…….……..2

2a. Leaves alternate……. **Boehmeria**

2b. Leaves opposite…….……...3

3a. Flowers not on discoid fleshy receptacle…….…..**Pilea**

3b. Flowers on discoid fleshy receptacle……..……**Lecanthus**

BOEHMERIA Jacq.

Boehmeria platyphylla D.Don, *Prodr. Fl. Nepal.*: 60 (1825); Hara *et al.* in *Enu. Fl. Pl. Nep.* **3**: 201 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 319 (2000).'Gargalo'

A shrub. Leaves opposite, petioled, orbicular or broadly ovate, caudate, coarsely toothed, rough and wrinkled. Flower clusters, in long, simple, axillary spikes. **Fl.:** Jul. - Sep.

Uses: Root paste is used for bleeding.

Voucher specimen: Gorkha, Namrung, 2430m, Oct. 6, 2012, R. Tamang, RT 235 (TUCH).

LECANTHUS Wedd.

Lecanthus peduncularis (Royle) Wedd., *Prodr.***16** (1) : 164(1869); Hara *et al.* in *Enu. Fl. Pl. Nep.* **3**: 204 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 320 (2000).'Khole jhar'

A succulent decumbent herb. Leaves opposite, stipulate, petiolate, elliptic, base cuneate, margin coarsely toothed, apex acute, 3-nerved from the base and then penninerved. Flowers, pink, minute, borne on saucer- like receptacle. Achenes narrow- oblong, red. **Fl.**: Aug-Sep **Fr.**: Aug-Sep

Voucher specimen: Gorkha, Above Namrung, 2225m, Oct. 2, 2012, R. Tamang, RT 144 (TUCH).

PILEA Lindl.

Pilea scripta (Buch.-Ham. ex D. Don) Wedd., *Ann. Sci. Nat.*, ser. 4 1: 187 (1854); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 205 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 322 (2000).'Seto Gagleto'

Urtica scripta Buch.-Ham. ex D. Don, *Prodr. Fl. Nep*.: 59 (1825).

A hairless, erect herb. Leaves ovate-lanceolate, acuminate, with 3 fine veins, petioled; stipules lanceolate. Flowers pinkish- white, in much branched axillary clusters. **Fl**: Jul-Aug. **Fr**: Aug.-Sep.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, June 6, 2012, S. Sapkota, SS 141 (TUCH).

URTICA (Tourn.) L.

Urtica dioica L., *Sp. Pl.* 984(1753); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 207 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 322(2000).'Lekh Sisnu'

A stinging herbaceous plant. Leaves ovate-lanceolate, coarsely toothed, opposite; stipules lanceolate. Flowers, tiny, green, in long axillary tassel- like hanging or spreading clusters. **Fl.:** Aug. - Sep.

Uses: Young shoots and leaves eaten as vegetable. Roots considered curing mental disorder, fever and stomach disorder.

Voucher specimen: Gorkha, Above Namrung, 2225m, June 2, 2012, S. Sapkota, SS 142 (TUCH).

LORANTHACEAE

SCURRULA L.

Scurrula elata (Edgew.) Danser in *Bull. Jard. Bot. Buitenz*. Ser. 3, 10: 350 (1929); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 191(1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 190 (2000).'Ainjeru'

Loranthus elatus Edgew.; *Fl. Brit. Ind.* **5**:212 (1886).

A robust parasitic shrub growing on the branches of the tree. Leaves opposite, stalked, blade thick, hairless, youngest shoots and young leaves brown- hairy. **Fl.:** Mar. **Fr.:** Apr.

Uses: Sticky fruits used in capturing wild birds.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, Oct. 6, 2012, R. Tamang, RT 226 (TUCH).

POLYGONACEAE

Key to the genera:

1a. Perianth- segments 6……...… **Rumex**

1b. Perianth- segments 5……..……..2

2a. Flowers in terminal branched clusters…….**Aconogonum**

2b. Flowers in a spike- like cluster or globular head…… 3

3a. Stamens 6-8; nut 3- angled…….…… **Bistorta**

3b. Stamens 5-8; nut not 3- angled…… **Persicaria**

ACONOGONUM Rchb.

Aconogonum molle (D. Don) H. Hara in *Fl. East. Himal.* 68 (1966); Hara *et al.* in *Enu. Fl. Pl. Nep*. **3**: 187 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 236 (2000).'Thotne'

A robust, erect herb. Leaves large, lanceolate- elliptic, silky- hairy, acuminate, entire. Flowers, in large terminal, much- branched clusters, numerous tiny white flowers. **Fl.:** May- Oct.

Uses: Young shoots eaten for diarrhoea and dysentery.

Voucher specimen: Gorkha, Namrung, Mathilo Rupal, 4000m, June 4, 2102, S. Sapkota, SS 140 (TUCH).

BISTORTA Scop.

Key to the species:

1a. A low trailing herb……..…..*B. vaccinifolia*

1b. An erect, slender herb…….……..2

2a. Leaves mostly basal, petioled……..……*B. affinis*

2b. Leaves, lower long petioled, upper sessile……..*B. amplexicaulis*

Bistorta affinis (D. Don) Greene, *Leafl.***1**: 21 (1904); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 173 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 237 (2000).

Polygonum affine D. Don; *Fl. Brit. Ind.* **5:** 33 (18886).

A densely tufted mat- forming herb. Leaves mostly basal, petioled, oblong- lanceolate, acute, entire, glabrous; stipules brown, papery. Flowers bright pink, in dense- flowered, cylindric, terminal racemes. **Fl.:** Jun. - Sep.

Voucher specimen: Gorkha, Namrung, Mathilo Rupal, 4000m, June 4, 2102, S. Sapkota, SS 139 (TUCH).

Bistorta amplexicaulis (D.Don) Greene, *Leafl.***1**: 21(1904); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 173(1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 237(2000).

Polygonum amplexicaule D.Don, *Prodr.Fl. Nep.* 70(1825)

An erect, slender herb. Leaves ovate- lanceolate, lower long- petioled, upper sessile, clasping the stem, base cordate, margin entire, apex acuminate. Flowers scarlet, in dense- flowered, terminal raceme, pink in colour. **Fl**.: May-Sep. **Fr**: May-Sep.

Voucher specimen: Gorkha, Samagaun, 4000m, Oct. 9, 2012, R. Tamang, RT 251 (TUCH).

Bistorta vaccinifolia (Wall. ex Meisn.) Greene, *Leafl.***1:** 21 (1904); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 173(1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 237(2000).'Pulunge jhaar '

A low trailing woody- stemmed herb. Leaves ovate, small, entire, short- stalked, base rounded; stipules brown, rigid. Flowers, in erect, cylindrical clusters, pink in colour. **Fl.:** Aug. - Sep.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3490m, Oct. 4, 2012, R. Tamang, RT 159 (TUCH).

PERSICARIA Mill

Persicaria capitata (Buch.-Ham. ex D. Don) H. Gross, *Bot. Jahrb*. **49**: 277 (1913); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 175(1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 238 (2000). 'Ratnyaule jhar'

Polygonum repens Wall. ex Meisn., *Pl. As. Rar*. **3**: 60 (1832).

A creeping herb, with erect branches. Stem rooting at nodes. Leaves petioled, ovate- elliptic, acute, sparsely hairy. Flowers pinkish- white, in terminal heads. **Fl.:** Mar. - Nov.

Voucher specimen: Gorkha, Namrung, 3365m, Oct. 6, 2012, R. Tamang, RT 176 (TUCH).

RUMEX L.

Rumex nepalensis Spreng., *Syst. Veg.***2**: 159 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 179(1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 241 (2000).'Halhale Saag'

A tall, robust herb. Stem glabrous. Leaves petioled, ovate- oblong, acuminate, entire. Flowers red, in whorls forming long racemes. Fruit, with broad wings. **Fl.:** Apr. - Jul.

Uses: Leaves used as prickles, stems used for skin diseases, lung and liver problems, seeds in mouth disorder and roots to cure joint pains and wounds.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, June 3, 2012, S. Sapkota, SS 60 (TUCH).

AMARANTHACEAE

CYATHULA Blume

Cyathula capitata Moq. in DC., *Prodr.***13** (2): 329 (1849); Hara *et al.* in *Enu. Fl. Pl. Nep*. **3**: 169 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 8 (2000).

A herb, about 45cm high. Leaves thin, short- petioled, elliptic- ovate, acuminate, entire, hairy on both surfaces. Flowers green, in sub- solitary, terminal, pedunculate, globose heads.

Voucher specimen: Gorkha, Lho, 2800m, Oct. 2, 2012, R. Tamang, RT 143 (TUCH).

PHYTOLACCACEAE

PHYTOLACCA L.

Phytolacca acinosa Roxb., *Fl. Ind.* ed. 2, **2**: 458 (1832); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 171 (1982); Press et al. in *Ann. Check. Fl. Pl. Nep.*:233 (2000).'Jaringo saag'

A hairless herbaceous plant. Leaves lanceolate, acuminate, entire, marrowed to a short stalk. Flowers greenish- white, cylindrical, erect, dense, pedicellate. **Fl.:** Jun. - Sep.

Uses: Leaves eaten as vegetables and is taken for diarrhoea.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, Oct. 6, 2012, R. Tamang, RT 160 (TUCH).

CARYOPHYLLACEAE

Key to the genera:

1a. Petals entire…….. **Sagina**

1b. Petals bi- lobed……...……2

2a. Flowers solitary, pendulous, with brownish petals……...…..…**Silene**

2b. Flowers in terminal cymes, with whitish- green petals……...…..... **Stellaria**

SAGINA L.

Sagina saginoide*s* (L.) H. Karst, *Deut. Fl. (Karsten*): 539 (1882); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 55 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 41(2000).

A small, tufted herb, with slender branches. Leaves bright green, linear, glabrous. Flowers, solitary, axillary, pentamerous, white.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, Oct. 6, 2012, R. Tamang, RT 189 (TUCH).

SILENE L.

Silene setisperma Majumdar ; *J. Ind. B. S.***42:** 649 (1963); Hara *et al.* in *Enu. Fl. Pl. Nep.* **2**: 56 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 42 (2000).

An erect herb. Stem leafy with swollen nodes. Leaves elliptic-lanceolate, the lower stalked, upper sessile, clasping the stem. Flowers usually solitary and pendulous.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3490m, Oct. 4, 2012, R. Tamang, RT 172 (TUCH).

STELLARIA L.

Stellaria decumbens Edgew., *Trans. Linn. Soc. London* **20**: 35(1846); Hara *et al.* in *Enu. Fl. Pl. Nep.* **2**: 257(1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 43(2000).

A densely tufted herb. Stem pubescent up to 15cm. Leaves linear-lanceolate, acuminate, numerous, shining. Capsule red, shining, long pedicelled. **Fl**: Jun.-Jul. **Fr**: Jul.-Aug.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 3500m, June 2, 2012, S. Sapkota, SS 22 (TUCH).

RANUNCULACEAE

Key to the genera:

1a. Plant a climber……....**Clematis**

1b**.** Plant an erect herb……...……2

2a. Flower with involucral leaves……..**Anemone**

2b. Flowers without involucral leaves…….……..3

3a. A bushy herb……..……**Thalictrum**

3b. A robust and hairy herb……...……4

4a. Flowers yellow in colour…….. **Ranunculus**

4b. Flowers deep blue in colour……..……..……..……. 5

5a. Leaves palmately divided……...…. **Aconitum**

5b. Leaves orbicular……..…….… **Delphinium**

ACONITUM L.

Aconitum spicatum (Bruhl) Stapf, *Ann. Roy. Bot. Gard*. (*Calcutta*) **10**(2): 165 (1905); Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 11 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 249 (2000).'Bikh'

Aconitum ferox var. *spicata* Brühl in *Ann. B. G. Calc*. **5**: 110 (1895).

A tall erect herb upto 2m. Leaves palmately divided broadly ovate, 3-5 partite, pubescent. Racemes long and erect. Flowers deep purple, in dense terminal spike. **Fl:** Aug-Sep **Fr:** Sep. - Oct

Uses: Poisonous

Voucher specimen: Gorkha, Samagaun, 4000m, Oct.11, 2012, R. Tamang, RT 253 (TUCH).

ANEMONE L

Key to the species:

1a. Flowers white with violet streaks…….*A. rivularis*

1b. Flowers white without any streaks……..…….*A. vitifolia*

Anemone rivularis Buch.- Ham. ex DC., *Syst.***1:** 211 (1818; Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 12 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 251 (2000).'Patidhuk'

An erect herb. Radical leaves many, long- petioled, 3- partite, broadly ovate, silky pubescent, lobes further cut and shallowly toothed. Flowers in spreading, terminal cymes, white with violet streaks.

Uses: Fruit and seed used in liver disorders, indigestion, cold and cough.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3490m, June 4, 2012, S. Sapkota, SS 52 (TUCH).

Anemone vitifolia Buch.- Ham. ex DC., *Syst*. **1:**210 (1818); Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 13 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 251 (2000). 'Mauri Mulo'

A stout, robust herb, 1m tall. Leaves ovate, cordate, deeply 3-5 lobed, sharply toothed, petiole covered with white tomentum. Flowers white, in terminal cymes. **Fl**: Aug. **Fr**: Sep.-Oct.

Uses: Young fruits clustered used as fire starter.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3740m, May 31, 2012, S. Sapkota, SS 12 (TUCH).

CLEMATIS Dill. ex L.

Key to the species:

1a. Leaf apex acuminate……*C. acuminata*

1b. Leaf apex acute……... 2

2a. Flowers yellowish white…….……..…. *C. connata*

2b. Flowers white…….…….*C. montana*

Clematis acuminata DC., *Syst. Nat.***1:** 148 (1817); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 14 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 252 (2000).

A woody climber. Leaves ternate, leaflets lanceolate, membranous, surfaces glabrous, base rounded, margins serrate, apex acuminate.

Voucher specimen: Gorkha, Gap, 2230m, Oct. 5, 2012, R. Tamang, RT 149 (TUCH).

Clematis connata DC., *Prodr*. **1**: 4 (1824); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 14 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 252 (2000).

A woody climber. Leaves pinnate; leaflets 5-7, ovate, sparsely pubescent, margins serrately toothed. Flowers yellowish- white, in cymosely branched panicles. **Fl:** Sep.-Dec. **Fr**.: Sep.-Dec.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, Oct. 6, 2012, R. Tamang, RT 198 (TUCH).

Clematis montana Buch.-Ham. ex DC., *Syst. Nat.***1**: 164 (1817); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 15 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 252 (2000).'Junge lahara'

A woody climber. Leaves ternate; leaflets ovate, sparsely appressed, pubescent beneath, acute. Flower 2-3 in in axillary fasicles, white or pinkish. **Fl:** Jun.-Sep. **Fr.**: Jun.-Sep.

Voucher specimen: Gorkha, Gap, 2230m, May 30, 2012, S. Sapkota, SS 104 (TUCH).

DELPHINIUM L.

Delphinium kamaonense Huth., *Bull. Herb. Boiss*. **1**: 333 (1893); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 17 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 254 (2000).

An erect herb. Stem 8-35cm, almost glabrous above. Leaves orbicular, 5-7 partite, narrowly linear, upper surface puberulous, lower surface thinly hairy. Flowers deep blue. **Fl.:** Jul. - Aug.

Voucher specimen: Gorkha, Lho, 2800m, Oct.2, 2012, R. Tamang, RT 228 (TUCH).

RANUNCULUS L.

Ranunculus diffusus DC., *Prodr*. **1**: 38 (1824); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 19 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 255 (2000).'Brimo mendo'

A prostrate softly hairy herbs. Leaves deeply divided into 3 obovate lobes, toothed margins, pubescent beneath. Flowers solitary, axillary, yellow. **Fl.:** Apr. - May **Fr.:** July- Aug

Voucher specimen: Gorkha, Lho, 2800m, June 11, 2012, S. Sapkota, SS 105 (TUCH).

THALICTRUM L.

Key to the species:

1a. Leaves broadly ovate……*T. foliolosum*

1b. Leaves reniforme……..*T. reniforme*

Thalictrum foliolosum DC., *Syst. Nat.***1:** 175 (1817); Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 21 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 257 (2000).'Dampate'

A bushy herb. Leaflets broadly ovate, base cordate, margins bluntly toothed or lobed, apex acute. Flowers small, white, in much- branched dense clusters on tall leafy stems. **Fl:** July- Nov **Fr.:** July-Nov.

Uses: Root used for curing gastritis.

Voucher specimen: Gorkha, Shyalla, 3050m, Oct. 7, 2012, R. Tamang, RT 229 (TUCH).

Thalictrum reniforme Wall., *Pl. As. Rar*. **2:** 26 (1831); Hara *et al*. in *Enu. Fl. Pl. Nep.* **2**: 22 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 258 (2000).

A rigid herb, 1-2m tall. Leaf sheaths turning into adnate stipules; leaflets orbicular, slightly 3- lobed, densely pubescent, obtuse. **Fl.:** Jul. - Sep.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, Oct. 6, 2012, R. Tamang, RT 199 (TUCH).

BERBERIDACEAE

Key to the genera:

1a. Spiny stout shrub; leaves simple……..……..**Berberis**

1b. A distinctive herb; leaves compound…….…… **Podophyllum**

BERBERIS L.

Key to the species

1a. Stem brownish; leaves without spiny teeth…….……. *B. angulosa*

1b. Stem dark red; leaves with slender spines……..……. *B. erythroclada*

Berberis angulosa Wall. ex Hook f. & Thomson, *Fl. Ind.*: 227 (1855); Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 29 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 25 (2000).'Chutre kanda'

A stiff stout- stemmed- shrub. Stem brownish, spine 3-fid. Leaves elliptic- obovate, without spiny teeth, obtuse, entire. Flowers solitary or in fascicles of 2-3. Fruit ellipsoid, shining red. **Fl:** Aug-Sep. **Fr:** Sep.-Oct**.**

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3490m, Oct. 4, 2012, R. Tamang, RT 152 (TUCH).

Berberis erythroclada Ahrendt ; *J. B. 79 (Suppl.)*: 49 (1941); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 30 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 26 (2000).'Lekh chutro'

A densely branched shrub, deciduous. Branches shiny, dark red, glabrous. Leaves subsessile, obovate-elliptic, papery, obtuse, spines slender, orange red. Berries red, to 1.5cm. **Fl**: Jun-Jul

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3490m, Oct. 4, 2012, R. Tamang, RT 153 (TUCH).

PODOPHYLLUM L.

Podophyllum hexandrum Royle, *Ill. B. Him.* 64 (1834); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 31 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 27 (2000).'Laghu patra'

A distinctive herbaceous plant . Leaves glossy green, drooping, lobed on it few stiff branches. Flowers pale- pink, showy, terminal, solitary. Fruits bulbous, bright red- orange. **Fl.:** May- Aug.

Voucher specimen: Gorkha, Namrung, Mathilo Rupal, 3600m, May 31, 2012, S. Sapkota (TUCH), Plate IV (b).

SCHISANDRACEAE

SCHISANDRA Michaux

Schisandra grandiflora (Wall.) Hook. f. & Thomson, *Fl. Brit. Ind*. **1**(1): 44 (1872); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 26 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 291 (2000).'Theki phal'

Kadsura grandiflora Wall., *Tent. Fl. Ne*p. **10**: t. 14 (1824).

A hairless woody climbing shrub. Leave oblanceolate, long pointed, conspicuous veins beneath, distantly serrated, nearly glabrous, acuminate. Fruits fleshy, on drooping, axillary stalks. **Fl**: May-Jun

Fr: Jul.-Aug

Voucher specimen: Gorkha, Nearby Namrung, 2670m, Oct. 6, 2012, R. Tamang, RT 232 (TUCH).

LAURACEAE

Key to the genera:

1a. Flower bisexual……..……..**Cinnamomum**

1b. Flower unisexual……..2

2a. Perianth segments 4; leaves usually 3- nerved……...…**Neolitsea**

2b. Perianth segments 6; leaves usually penninerved……**Litsea**

CINNAMOMUM (Tourn.) L.

Cinnamomum camphora (L.) Sieb.,*Syn. Pel. Oec. Jap.* 23 (1830); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 183 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 160 (2000).'Kapoor'

A cultivated tree up to 9m high with spreading branches, evergreen, aromatic. Leaves alternate, petiolate, obovate, acuminate, entire. Flowers, in axillary panicles. Fruit obovoid, seated on a cup-shaped fleshy permanent perianth. **Fl.:** April **Fr.***:* July

Uses: Camphor is extracted from the plant.

Voucher specimen: Gorkha, Above Namrung, 2225m, June 12, 2012, S. Sapkota, SS 49 (TUCH).

NEOLITSEA Merrill

Neolitsea pallens (D. Don) Momiy & H. Hara., *J. Jap. B.***47:** 269 (1972); Hara *et al.* in *Enu. Fl. Pl. Nep*. **3**: 186 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 162 (2000).'Makai kaath'

A small medium- sized evergreen tree. Leaves oblong- elliptic, acuminate, pale and glaucous beneath, alternate, hairless, short- petioled. Fruit, globular, black, stalked. **Fl.:** Mar. - May

Uses: Fuel wood, fodder, fencing.

Voucher specimen: Gorkha, Above Namrung, 2225m, Oct. 2, 2012, R. Tamang, RT 139 (TUCH).

LITSEA Lam

Key to the species:

1a. Leaves lanceolate; fruits cylindrical……...……*L. doshia*

1b. Leaves oblong; fruits globose……..……*L. lancifolia*

Litsea doshia (Buch.- Ham. ex D. Don) Kosterm., *J. Sci. Res. Indonesia***1**: 90 (1952); Hara *et al.* in *Enu. Fl. Pl. Nep*. **3**: 185 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 162 (2000).

A hairless evergreen small tree. Leaves lanceolate, elliptic, pale brown, leathery, shining above, petioled. Fruit, cylindrical, dark purple, with a funnel- shaped base. **Fl.:** Oct. - Nov.

Voucher specimen: Gorkha, Shyalla, 3050m, June 10, 2012, S. Sapkota, SS 47 (TUCH).

Litsea lancifolia Roxb. ex Wall. sensu Hook.f., *Fl.Brit. Ind.***5**: 159 (1886); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 183 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 161 (2000).

A medium sized tree, young shoot and branches finely pubescent. Leaves alternate, short petiolate, oblong, base rounded, entire, acuminate. Flowers few, umbel. Fruit, globose, on funnel- shaped base. **Fl.:** Mar. – Apr.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, June 4, 2012, S. Sapkota, SS 46 (TUCH).

PAPAVERACEAE

Key to the genera:

1a. Leaf stalks ending in a tendril…….**Dicentra**

1b. Tendrils none…….……..2

2a. Flowers large, regular……..…….… **Meconopsis**

2b. Flowers small, irregular…….…….…. **Corydalis**

CORYDALIS Venterat

Corydalis cashmeriana Royle, *III. Bot. Himal. Mts*. **1**(2): 69, t. 16, f. 1 (1834); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 32 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 228 (2000).

A small delicate herb up to 15cm. Leaves few, delicate, glaucous, deeply cut, mostly basal, ternate, leaflets 3- lobed. Flowers yellow, in a lax terminal cluster, slightly own curved. **Fl**: Jun.-Jul. **Fr**: Jul.-Oct.

Uses: Plant used in chronic fever and burns.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3490m, Oct.4, 2012, R. Tamang, RT 158 (TUCH).

DICENTRA Bernh.

Dicentra scandens (D. Don) Walp**,** *Rep.* **1:** 118 (1842); Hara *et al.* in *Enu. Fl. Pl. Nep.* **2**: 35 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:231 (2000).'Jogi lahara'

A slender, climbing herb. Leaves alternate, decompound, petioled, with tendrils, leaflets elliptic-ovate, acute, entire, membranous. Flowers yellowish in leaf-opposed racemes. Capsule cylindrical, papery.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3740m, May 31, 2012, S. Sapkota, SS 101 (TUCH).

MECONOPSIS Viguier

Key to the species:

1a. Stem with golden hairs…….……*M. dhwojii*

1b. Stem without golden hairs……*M. horridula*

Meconopsis dhwojii G. Taylor ex. Hay, *Gard. Chron. Ser. III*, **92:** 41 (1932); Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 37 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:231 (2000).

A robust herb, upto 2m high. Stem hispid with golden hairs. Leaves lower petioled, upper sessile, pinnatifid, bristled.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3740m, May 31, 2012, S. Sapkota, SS 102 (TUCH).

Meconopsis horridula Hook. f. & Thomson; *Fl. Ind.*: 252 (1855); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 37 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*:231 (2000).

A bristly herb, 6-33cm tall. Bristles stiff, spiny. Leaves usually all radical, very rarely cauline, oblanceolate, sinutely crenate or slightly lobed. **Fl**.: Jun-Sep.

Voucher specimen: Gorkha, Above Samagaun, 3690m, June 7, 2012, S. Sapkota, SS 57 (TUCH).

BRASSICACEAE

Key to the genera:

1a. Pod short…….…..…. **Capsella**

1b. Pod long……...……2

2a. Leaves toothed; flowers yellow……. **Erysimum**

2b. Leaves compound; flowers white……..…..3

3a. Seeds in two rows…….……...….. **Rorippa**

3b. Seeds in one row…….……...……..4

4a. Seeds ovoid…….…… **Arabidopsis**

4b. Seeds long, narrow……...…….…….. **Cardamine**

ARABIDOPSIS Heynh.

Arabidopsis himalaica (Hook.f. &Thoms.) O. E. Schulz in *Pfl. –reich IV*- 105, Ht. **86:** 283; Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 38 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 78 (2000).

Sisymbrium himalaicum Hook. f. &Thoms.; *Fl. Brit. Ind.* **1:** 147 (1872).

An erect, hairy herb, 22cm high. Leaves radical, short-petioled, obovate-spathulate, sinuate-toothed, cauline sessile, clasping the stem. Flowers white, in sub-corymbose racemes. **Fl.:** Jun. - Aug.

Voucher specimen: Gorkha, Samagaun, 4000m, June 12, 2012, S. Sapkota, SS 90 (TUCH).

CAPSELLA Medik.

Capsella bursa- pastoris (L.) Medik, *Pfl.- Gatt*. **1:** 85 (1792); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 40 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 80 (2000).'Chamsure jhar'

An erect, hairy herb, upto 30 cm high. Leaves radical, rosulate, cauline auricled, serrate. Pods triangular, laterally compressed; seeds many.

Voucher specimen: Gorkha, Lho, 2800m, June 12, 2012, S. Sapkota, SS 92 (TUCH).

CARDAMINE L.

Cardamine sp.

An erect herb. Leaves odd- pinnate, leaflets 5-9, short- petioled, ovate, acute, coarsely toothed. Flowers small, white in terminal raceme.

Voucher specimen: Gorkha, Samagaun, 3600m, Oct. 9, 2012, R. Tamang, RT 272 (TUCH).

ERYSIMUM L.

Erysimum hierarciifolium L., *Cent. Pl*. **1**: 18 (1755); Fl. Suec ed. 2: 234 (1755); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 43 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 82 (2000).'Ban chansur'

Erysimum robustum D. Don

An erect, pubescent herb, 25-30 cm tall. Leaves, lower stalked, upper sessile, oblanceolate, acute, sinuate-toothed. Pods 2-4 cm, many seeded. **Fl.:** Jun. - Aug.

Voucher specimen: Gorkha, Lho, 2340m, Oct. 2, 2012, R. Tamang, RT 278 (TUCH).

RORIPPA Scop.

Rorippa nasturtium-aquaticum (L.) Hayek, *Sched. Fl. Stir. Exs.* 22 (1905); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 45 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 83 (2000).'Sim rayo'

A glossy, green, fleshy- stemmed herb. Lower leaves long- stalked, with 1-5 leaflets, upper leaves with eared bases, with 5-9 blunt leaflets. Flowers white, in lax terminal clusters. **Fl.:** Apr. - Jun.

Uses: Eaten as vegetable.Plant used as pot herb.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, Oct. 6, 2012, R, Tamang, RT 188 (TUCH).

CRASSULACEAE

SEDUM L.

Key to the species:

1a. A succulent herb……..……..*S. multicaule*

1b. A glabrous herb……..…….……2

2a. Leaves opposite, apex without bristles……..…*S. filipes*

2b. Leaves rosulate, apex with bristles……..*S. trullipetalum*

Sedum filipes Hemsl., *J. Linn. S. B.***23**: 284, t. 7a, f. 13 (1887); Hara *et al*. in *Enu. Fl. Pl. Nep.* **2**: 164 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 77 (2000).

An erect, glabrous herb. Leaves opposite, pseudo-petiolate , leaf blade broadly ovate , apex rounded, margin entire, base cuneate. Cymes terminal. Flowers unequally 5-merous. **Fl**.: Aug. - Oct. **Fr**.: Oct.

Voucher specimen: Gorkha, Above Samagaun, 3690m, June 7, 2012, S. Sapkota, SS 100 (TUCH).

Sedum multicaule Wall. ex Lindl., *Bot. Reg.***1840 :** Mist. 58 (1840); Hara *et al*. in *Enu. Fl. Pl. Nep.* **2**: 164 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 78 (2000).

A small, succulent herb. Stem much branched from the base. Leaves fleshy, nearly cylindrical, pointed, acute, numerous. Flowers, yellow, stalklesss, in terminal clusters. **Fl.:** Jun. –Aug

Voucher specimen: Gorkha, Shyalla, 3050m, Oct. 7, 2012, R. Tamang, RT 220 (TUCH).

Sedum trullipetalum Hook. & Thomson, *J. Linn. S. B.***2**: 102 (1858); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 165 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 78 (2000).

A small, glabrous herb, forming more or less cushion. Leaves rosulate, small, linear- lanceolate entire, tip bristly. Flowers yellow, in dense, branched terminal cymes.

Voucher specimen: Gorkha, Shyalla, 3050m, June 10, 2012, S. Sapkota, SS 89 (TUCH).

SAXIFRAGACEAE

Key to the genera:

1a. Leaves twice ternate……..…….**Astilbe**

1b. Leaves simple…….2

2a. Inforescence helicoid cyme…….. **Bergenia**

2b. Inflorescence corymb…….…….. **Saxifraga**

ASTILBE D. Don

Astilbe rivularis Buch.-Ham. ex D. Don, *Prodr.Fl. Nep.:* 211 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 149 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 286(2000). 'Thulo Ausadi'

An erect, hairy herb. Stems sparsely brown. Leaves 2- pinnate, leaflets usually 5 pinnules, ovate, slightly cordate, margin serrated, acuminate, hairy and brown. Peduncles pale brownish pubescent. **Fl.:** Jul. - Sep.

Uses: Root and leaf is used to cure cough, common cold and menstrual disorder.

Voucher specimen: Gorkha, Namrung, Kharka, 2920m, Oct. 5, 2012, R. Tamang, RT 179 (TUCH).

BERGENIA Moench

Key to the species:

1a. Leaves margin with bristly hairs……. *B. ciliata*

1b. Leaves margin without bristles…….. *B. purpurascens*

Bergenia ciliata (Haw.) Sternb., *Rev. Saxifr. Suppl.* **2**: 2 (1831); Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 150 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 286(2000).'Paashanabed'

A herb with very stout crepping rootstock. Leaves petioled, obovate, obtuse, margins fringed with bristly hairs, leaf stak short. **Fl**.: Mar. - Jul.

Uses: Root used as tonic in diarrhoea, lung and eye troubles, also applied to boils. Stem used for curing menstrual disorder.

Voucher specimen: Gorkha, Lho, 2800m, June 7, 2012, S. Sapkota, SS 69 (TUCH).

Bergenia purpurascens (Hook f. & Thomson) Engl. *Bot. Zeitung (Berlin)* **26**: 841 (1868); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 150 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 286 (2000).

Saxifraga purpurascens Hook. f. & Thoms. in *J. Linn. S. B.* **2**: 61 (1857).

A herb with stout creeping rootstock. Leaves obovate, ciliate near base, entire, hairless, stalked, margin without teeth or bristles. **Fl.:** May- Jul.

Voucher specimen: Gorkha, Samagaun, 4000m, Oct. 9, 2012, R. Tamang, RT 265 (TUCH).

SAXIFRAGA L.

Key to the species:

1a. Leaves glaucous, shining, sessile……..... *S. brachypoda*

1b. Leaves glabrous, upper amplexicaule and lower petioled……..…… *S. parnassifolia*

Saxifraga brachypoda D. Don, *Trans. Linn. Soc. London* **13**: 378 (1821); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 151 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 287 (2000).

A small herb, leafy through out. Leaves lanceolate, margin sparsely spinulose ciliate, glabrous, shining. Flowers solitary, yellow. **Fl.** May- Jun. **Fr.** Aug. - Sep.

Voucher specimen: Gorkha, Namrung, Kharka, 3365m, Oct. 9, 2012, R. Tamang, RT 270 (TUCH).

Saxifraga parnassifolia D. Don, *Tr. Linn. S.***13:** 405 (1821); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 154 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 289 (2000).

An erect, leafy herb. Leaves, lower petioled, upper sessile and amplexicaule, elliptic- lanceolate, acute, entire, pubescent, margin spiny- toothed. Flowers in terminal, solitary, yellow. **Fl:** Jul. - Aug.

Voucher specimen: Gorkha, Namrung, Kharka, 3365m, Oct. 4, 2012, R. Tamang, RT 180 (TUCH).

GROSSULARIACEAE

RIBES L.

Ribes takare D. Don., *Prodr. Fl. Nep.* 208 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 159 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 144 (2000).'Tanphu'

An erect epiphytic shrub. Leaves triangular, heart- shaped, long- petioled, 3- lobed, with central lobe much larger and longer, lobes double- toothed. **Fl.:** Apr. - Jun.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, Oct. 6, 2012, R. Tamang, RT 194 (TUCH).

HYDRANGEACEAE

Key to the genera:

1a. Flowers all alike……...……...……..**Deutzia**

1b. Outer flowers much larger than the others……...……..**Hydrangea**

DEUTZIA Thunb.

Key to the species:

1a. Leaves larger; flowers borne on lateral branches……..*D. compacta*

1b. Leaves smaller; flowers born on terminal corymbs……..*D. staminea*

Deutzia compacta Craibs., *Kew Bull.***1913:** 264 (1913); Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 157 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 147 (2000).

A shrub to 3m high. Leaves large, green beneath, opposite, acute, serrated, base rounded. Flowers borne on long lateral branches. Capsule rounded.

Uses: For fodder

Voucher specimen: Gorkha, Nearby Namrung, 2670m, Oct. 6, 2012, R. Tamang, RT 222 (TUCH).

Deutzia staminea R. Br. ex Wall., *Pl. As. Rar*. **2:** 82, t. 191 (1831); Hara *et al.* in *Enu. Fl. Pl. Nep.* **2**: 156 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 147 (2000).'Sun Taule'

A shrub to 2m high. Leaves shortly stalked, elliptic- lanceolate, minutely toothed, acuminate, hairy above, tomentose with hairs beneath. Flowers white, in axillary and terminal corymbs.

Local name: Voucher specimen: Gorkha, Nearby Namrung, 2670m, June 6, 2012, S. Sapkota, SS 94 (TUCH).

HYDRANGEA L.

Hydrangea heteromalla D. Don, *Prodr. Fl. Nep*.: 211 (1825); Hara *et al.* in *Enu. Fl. Pl. Nep.* **2**: 157 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 147 (2000).'Phusure kaath'

A small tree up to 10m. Leaves ovate, elliptic, petioled, acute, serrated, densely grey-tomentose beneath. Corymbs with dense flowers. Flowers reddish- white. Capsule ellipsoid. **Fl**: Jun.-Jul. **Fr**: Aug.-Sep.

Uses: Fuel wood, fodder.

Voucher specimen: Gorkha, Nearby Namrung, 2670m, June 12, 2012, S. Sapkota, SS 95 (TUCH).

PARNASSIACEAE

PARNASSIA L.

Parnassia nubicola Wall. ex Royle, *III. Bot. Himal. Mts*. **1**(7): 227, t. 50, f. 3 (1835); Hara *et al*. in *Enu. Fl. Pl. Nep.* **2**: 156 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 232 (2000).

An erect herbs up to 40cm. Basal leaves long petioled, blade elliptic- heart shaped, acute. Flowers solitary, creamy white, borne on a slender stem, with a single ovate leaf clasping. **Fl.:** Jun.-Sep. **Fr.**: Jun.-Sep.

Voucher specimen: Gorkha, Shyalla, 3050m, June 7, 2012, S. Sapkota, SS 125 (TUCH).

ROSACEAE

Key to the genera:

1a. Plants with spines…….…. 2

1b. Plants without spines…….…….. 4

2a. Fruit, the hip, with many hard one- seeded carpels……..…… **Rosa**

2b. Fruit, a drupe, with fleshy numerous carpels……. 3

3a. Fruit scarlet…….…..… **Rubus**

3b. Fruit oblong- cylindrical……....…….. **Prinsepia**

4a. Leaves entire……..……...……**Cotoneaster**

4b. Leaves toothed…….……5

5a. Leaves simple…….……. **Spiraea**

5b. Leaves compound…….…….…..6

6a. Fruit a pome……..……..... **Sorbus**

6b. Fruit a head of numerous achenes……..……..… **Potentilla**

COTONEASTER L.

Key to the species:

1a. A shrub of 20 cm high; leaves margin enrolled……..……..…..…..*C. microphyllus*

1b. A shrub of more than 2m high; leaves margin entire……..2

2a. Leaves apex acuminate; flowers few- flowered……...…….*C. acuminatus*

2b. Leaves apex acute; flowers many- flowered……..……*C. affinis*

Cotoneaster acuminatus Lindl. in *Trans. Linn. Soc*. **13:** 101, t. 9 (1821); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 134 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 261 (2000).'Dhalke phool'

A big, scandent shrub. Leaves crowded, short- petioled, elliptic, lanceolate, acuminate, margins entire, softly hairy on both surfaces. Flowers white, few flowered, in cymes. **Fl:** May

Uses: Fuel wood, weaving stick.

Voucher specimen: Gorkha, Namrung, Kharka, 2920m, Oct. 5, 2012, R. Tamang, RT 177 (TUCH).

Cotoneaster affinis Lindl. in *Trans. Linn. Soc*. **13:** 101 (1821); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 134 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 261 (2000).'Kause phool'

A shrub, 2m high. Leaves, elliptic-lanceolate, acute, margins flat, glabrous above, tomentose beneath. Flowers white, many- flowered, in loosely branched, stalked, cymes. **Fl:** May

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, June 4, 2012, S. Sapkota, SS 62 (TUCH).

Cotoneaster microphyllus Wall. ex Lindl. in *B. Reg*. **13**: t.1114 (1827); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 135 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 262 (2000).'Pirbi'

A low growing much branched shrub upto 20cm. Leaves elliptic, coriaceous, base cuneate, margin enrolled, smooth. Flower solitary, axillary, white. **Fl:** Apr.-May**.** **Fr:** June-July.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, June 4, 2012, S. Sapkota, SS 58 (TUCH).

POTENTILLA L.

Key to the species:

1a. A dwarf mat- forming herb……*P. microphylla*

1b. An erect shrub……..……..…..2

2a. Leaves pubescent on both surfaces…….…..*P. fructicosa*

2b. Leaves upper surface hairy, lower silvery tomentose…….……..….. *P. fulgens*

Potentilla fructicosa L., *Sp. Pl.:* 495 (1753); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 139 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 265 (2000).'Chinia phal'

An erect shrub up to 1.5m. Leaves up to 3-5 foliate; leaflets elliptic, margin entire, sparsely or densely silky pubescent on both surface. Flowers solitary, terminal, yellow. **Fl.:** May-Jun. **Fr.:** July-Aug.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, June 4, 2012, S. Sapkota, SS 106 (TUCH).

Potentilla fulgens Wall. in *Lehm., Rev. Pot.* : 54 (1856).'Bajra danti'

An erect, softly silky shrub, 15-30cm high. Leaves interruptedly pinnate; leaflets numerous , sessile, obovate- obtuse, sharply serrated, upper surface hairy, lower silvery tomentose. Flowers yellow, crowded in terminal corymbs. **Fl:** July **Fr.:** Sep.

Voucher specimen: Gorkha, Samagaun, 4000m, Oct. 9, 2012, R. Tamang, RT 264 (TUCH).

Potentilla microphylla D. Don., *Prodr. Fl. Nep.* 231 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 140 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 266 (2000).

A dwarf densely tufted mat- forming herb. Leaves pinnate, leaflets numerous, narrowly lobed, silky beneath. Flowers, yellow, solitary. **Fl.:** Jun. - Jul.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, June 10, 2012, S. Sapkota, SS 126 (TUCH).

PRINSEPIA Royle

Prinsepia utilis Royle. *III. Bot. Himal.* 206, t. 38, f .1 (1839); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 141 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 267 (2000).'Dhatela'

A spiny shrub, 3m high. Leaves petioled, alternate, lanceolate, glabrous, serrated, acute, mucronate.Fruit berry- like, obliquey oblong. **Fl:** Jan. - Feb. **Fr.:** Apr. - May

Uses: Fuel wood, fencing, fruit eaten.

Voucher specimen: Gorkha, Namrung, 2710m, June 4, 2012, S. Sapkota, SS 160 (TUCH).

ROSA L.

Key to the species:

1a. Leaflets oblong; flowers creamy white…….……*R. sericea*

1b. Leaflets rounded; flowers pink…….…...……..*R. webbiana*

Rosa sericea Lindl., *Monogr. Rosa*: 105, t. 12 (1820); Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 143 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 268 (2000).'Jangali gulab'

A prickly and bushy shrub. Leaves odd- pinnate, leaflets 7 or 9, elliptic- oblong, serrate near apex. Flowers solitary, axillary, creamy white. Fruit subglobose, orange red. **Fl**: May- Aug. **Fr**: Jul. - Oct.

Voucher specimen: Gorkha, Shyalla, 3050m, June 10, 2012, S. Sapkota, SS 121 (TUCH).

Rosa webbiana Wall. ex Royle, ; *Ill. B. Him.* t. 42, f. 2 (1834); 208 (1835); Hara *et al.* in *Enu.*

Fl. Pl. Nep. **2**: 143 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 268 (2000).

A common shrub with slender branches, Leaves, pinnate, leaflets 5-9, small, rounded, coarsely toothed, nearly hairless. Flowers pink, in rather dense clusters. Fruit red, ovoid to flask- shaped. **Fl.:** Jun. - Aug.

Voucher specimen: Gorkha, Samagaun, Birendra Tal, 3610m, June 6, 2012, S.Sapkota, SS 59 (TUCH).

RUBUS (Tourn.) L.

Rubus paniculatus Sm., *Cyclop*. **30**: Rubus n. 41 (1819); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 146 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 270 (2000).'Kalo Ainselu'

A climbing shrub with scattered, small and recurved prickles. Leaves simple, alternate, petioled, ovate, obscurely lobed, acuminate, serrate, whitish tomentose beneath. Flowers in tomentose panicles, white. Drupelets black. **Fl**: Apr. - Jun. **Fr**: Jun. - Sep.

Uses: Fodder, fruit edible

Voucher specimen: Gorkha, Shyalla, 3050m, June 10, 2012, S. Sapkota, SS 108 (TUCH).

SORBUS (Tourn.) L.

Key to the species:

1a. Tree; flowers white in corymbs……..……..……..*S. cuspidata*

1b. Herb; flowers pinkish- white in flat- topped clusters…….……*S. microphylla*

Sorbus cuspidata (Spach) Hedl. in *Svensk. Vet. Akad. Handl*. **35:** 89 (1901); Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 147 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 271 (2000).'Lekh Mayal'

A tree about 15m high. Leaves alternate, stipulate, petiolate, simple, oblong, acute, lobulated, serrate, woolly beneath. Flowers pedicellate, white, in corymbs. **Fl.:** May

Uses: Fuel wood, fruit edible

Voucher specimen: Gorkha, Namrung, Kharka, 2920m, Oct. 5, 2012, R. Tamang, RT 200 (TUCH).

Sorbus microphylla Wenz, *Linnaea* **38**: 76 (1873); Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 146 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 271 (2000).

A slender nearly hairless herb. Leaves pinnate, leaflets 12- 18 pairs, small, linear- oblong, acute, deeply toothed. Flowers pink to white, in lax- flowered flat- topped clusters. **Fl.:** Jun.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3800m, June 1, 2012, S. Sapkota, SS 18 (TUCH).

SPIRAEA L.

Spiraea bella Sims, *Bot. Mag*. **59**: t. 2426 (1823); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 149 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 272 (2000).'Seto khareto'

A rhizomatous shrub up to 2.5m, branched. Leaves narrowly ovate, base cuneate, margin serrate or doubly serrate. Flowers pink, in terminal compound corymbs. **Fl.**: June- July **Fr.:** Aug.-Sep.

Voucher specimen: Gorkha, Shyalla, 3050m, June 10, 2012, S. Sapkota, SS 63 (TUCH).

FABACEAE

Key to the genera:

1a. Plants with spines…….…….. **Caragana**

1b. Plants without spines…….……..2

2a. Leaves trifoliate…….....…5

2b. Leaves pinnate…….3

3a. Pods linear…….……. **Indigofera**

3b. Pods inflated……..…….…..….4

4a. Pods constricted between the seeds…….....**Hedysarum**

4b. Pods not constricted between the seeds……..……**Astragalus**

5a. Shrubs……..……..……..6

5b. Herbs……....7

6a. Pods flattened……..……..**Desmodium**

6b. Pods linear- lanceolate……..…….**Piptanthus**

7a. Presence of leafy stipules…….……**Thermopsis**

7b. Absence of leafy stipules…….……8

8a. Flowers violet- blue; pods swollen…….…….…. **Parochetus**

8b. Flowers yellow; pods flattened……..……..**Trigonella**

ASTRAGALUS L.

Key to the species:

1a. A prostrate herb; pods without a curved beak…….*A. donianus*

1b. A trailing herb; pods with a curved beak……...*A. himalayanus*

Astragalus donianus DC., *Prodr*. **2**: 283 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 106 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 166 (2000).

A prostrate perennial herb, Leaves small pinnated. Flowers one or several borne on stalks much longer than the subtending leaves, colour purple.

Voucher specimen: Gorkha, Samagaun, Birendra Tal, 3610m, June 6, 2012, S. Sapkota, SS 50 (TUCH).

Astragalus himalayanus Klotz., *Reise Pr. Wald. Bot.*: 160, t. 4 (1862); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 107 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 166 (2000).

A slender- trailing herb. Leaves odd- pinnated, leaf- rachis ending to a leaflet, small, oblong- blunt, entire, sub-sessile, finely hairy. Flowers drooping, purple. Pods narrowed to a stalk with a curved beak.

Voucher specimen: Gorkha, Above Samagaun, 3690m, Oct. 9, 2012, R. Tamang, RT 249 (TUCH).

CARAGANA Lam.

Caragana gerardiana Royle, *III. Bot. Himal. Mts.* **2:** t. 39, f. 1 (1833-1840); Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 110 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 169 (2000).

A densely branched, very spiny shrub, forming clumps. Leaves pinnated, leaflets small, 8- 12, oblanceolate, obtuse. Spines 4cm, formed from rahis of old leaves.

Voucher specimen: Gorkha, Lho, 2800m, June 7, 2012, S. Sapkota, SS 98 (TUCH).

DESMODIUM Desv.

Desmodium elegans DC., *Ann. Sci. Nat., ser.***1**(**4):** 100 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 117 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 172 (2000).'Chamle'

A deciduous shrub. Leaves trifoliate with broad leaflets, acuminate, obovate, base cuneate, short-petioled. Flowers borne in terminal spike- like clusters, pinkish-white flowers. **Fl**.: June- Aug.

Uses: Fuel wood and fodder.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, June 4, 2012, S. Sapkota, SS 51 (TUCH).

HEDYSARUM L.

Hedysarum sp.

A glabrous herb. Leaves odd- pinnated, leaflets 17-21, oblong, obtuse, entire, blunt, membranous, densely silvery haired.

Voucher specimen: Gorkha, Talo Rupal, 3490m, Oct. 4, 2012, R. Tamang, RT 156 (TUCH).

INDIGOFERA L.

Indigofera atropurpurea (Buch. - Ham.) ex Hornem., *Suppl. Hort. Bot. Hafn.*: 152 (1819); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 122 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 175 (2000).'Sakhinu'

A glabrous shrub. Leaves odd- pinnate, leaflets 9, ovate, obtuse, entire, base cuneate. Flowers in lax-flowered, axillary racemes. Pods cylindrical, glabrous.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, Oct. 6, 2012, R. Tamang, RT 195 (TUCH).

PAROCHETUS Buch.- Ham. ex D. Don

Parochetus communis Buch.- Ham. ex D. Don, *Prodr. Fl. Nepal:* 240 (1825; Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 127 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 178 (2000).'Jangli padame jhar'

A small trailing, hairy herb. Leaflets 3, sub-sessile, obovate, cuneate, upper part toothed, hairy beneath. Flowers deep blue. Pods linear, tapering towards apex. **Fl:** April **Fr:** Sep.

Voucher specimen: Gorkha, Nearby Namrung, 2670m, Oct. 6, 2012, R. Tamang, RT 225 (TUCH).

PIPTANTHUS D. Don

Piptanthus nepalensis (Hook.) D. Don in Sweet, *Brit. Fl. Gard*. **3:** t. 264 (1828); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 128 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 179 (2000).'Suga phul'

A shrub, 1-3m tall. Leaves 3-foliate; leaflets sessile, lanceolate, entire, acuminate, hairy. Flowers bright yellow, in dense terminal raceme. Pod flat, long- stalked. **Fl:** April- May

Voucher specimen: Gorkha, Namrung, Kharka, 3490m, Oct. 6, 2012, R. Tamang, RT 157 (TUCH).

THERMOPSIS R.Br.

Thermopsis barbata Royle, *Ill. B. Him.* t. 32 (1834); 196 (1835); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 131 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 181 (2000).'Pelche mendo'

An erect, densely villose herb with thick root- stock. Leaf sessile, 3- foliate; leaflets lanceolate, acute, entire. Flowers short- stalked, dark purple.

Voucher specimen: Gorkha, Above Samagaun, 3690m, June 7, 2012, S. Sapkota, SS 54 (TUCH).

TRIGONELLA L.

Trigonella emodi Benth., *III. Bot. Himal. Mts.***1 (6)**: 197 (1835); Hara *et al*. in *Enu. Fl. Pl. Nep.* **2**: 131 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 181 (2000).

An erect, tufted herb. Stem several. Leaves 3- foliate, leaflets obovate, obtuse, denticulate, glabrous above, sparsely hairy beneath. **Fl**.: June- Sep.

Voucher specimen: Gorkha, Shyalla, 3050m, June 10, 2012, S. Sapkota, SS 53 (TUCH).

GERANIACEAE

GERANIUM (Tourn.) L

Key to the species:

1a. Leaves with stiff hairs on veins……..…….…….*G. donianum*

1b. Leaves without hairs on veins…….2

2a. Leaves palmately dissected……..……..…*G. nepalense*

2b. Leaves rhombic in outline……..…….……3

3a. Leaves 7-9 lobed……..*G. nakaonum*

3b. Leaves 3-5 lobed…….…..…. *G. wallichianum*

Geranium donianum Sweet, *Geran*. **4**: sub t. 338 (1827); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2:** 76 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 119 (2000).

A slender herb. Leaves with long stiff hairs on veins beneath, leaf segments more acute. Flowers pinkish- purple, paired, on a long pedicel. **Fl.:** Jun. - Aug.

Uses: Root used in fever, cough and body ache.

Voucher specimen: Gorkha, Above Samagaun, 3690m, Oct. 9, 2012, R. Tamang, RT 248 (TUCH).

Geranium nepalense Sweet, *Geran* **1**: t.12 (1820); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2:** 76 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 119 (2000).'Chunetro Ghans'

A slender, diffused herb. Leaves opposite, palmately dissected, palmately veined, 2 flowers in loose cyme, borne on long pedicel. Capsules less than 2cm long. **Fl**: July

Uses: Red coloring matter in root used for coloring oils.

Voucher specimen: Gorkha, Lho, 2800m, Oct. 7, 2012, R. Tamang, RT 136 (TUCH).

Geranium nakaonum H. Hara. in *F. & Fl. Nep. Him.* 276, f. 83 (1955); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2:** 76 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 119 (2000).

A herbaceous slender plant. Leaves rounded in outline, deeply 7-9 lobed, lobes deeply cut into linear rather blunt segments. Fruit hairless, rounded, on the long pedicels. **Fl.:** Jun. - Aug.

Voucher specimen: Gorkha, Samagaun, 4000m, Oct. 9, 2012, R. Tamang, RT 269 (TUCH).

Geranium wallichianum D. Don ex Sweet. *Geran.***1**: t. 90 (1821); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2:** 77 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 120 (2000).'Rakalamul'

A herbaceous plant. Leaves mostly 3-5 lobed, lobes broad- rhombic often with a fine point and further lobed and toothed. Flowers white, paired, on a long pedicel. **Fl.:** Jun. - Sep.

Voucher specimen: Gorkha, Namrung, Kharka, 3365m, Oct. 4, 2012, R. Tamang, RT 173 (TUCH).

RUTACEAE

Key to the genera:

1a. A perennial herb, without spines……..……...**Boenninghausenia**

1b. Shrubs or trees, with spines……..…….…….**Zanthoxylum**

BOENNINGHAUSENIA Reichb.

Boenninghausenia albiflora (Hook) Meisner, *Pl. Vasc. Gen*. **2**:44(1836); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2:** 81 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 279 (2000).'Karna'

An erect, glabrous herb, 30-60 cm high. Leaves 2-3 pinnate; leaflets obovate, entire, gland-dotted. Flowers white in terminal leafy cyme. Fruit several- seeded unit. **Fl:** Aug. - Sep.

Voucher specimen: Gorkha, Namrung, Kharka, 3365m, Oct. 4, 2012, R. Tamang, RT 178 (TUCH).

ZANTHOXYLUM L.Hort.

Key to the species:

1a. Leaflets 5-11, pubescent on both surfaces……..…….*Z. acanthopodium*

1b. Leaflets usualy 7, glabrous……..…..……..2

2a. A small tree; petiole winged with 2 prickly stipules…….……. *Z. armatum*

2b. A shrub; petiole not winged……..….. 3

3a. Leaf with gland- dotted beneath, apex acuminate……...*Z. oxyphyllum*

3b. Leaf without gland- dots, apex acute…….*Z. nepalense*

Zanthoxylum acanthopodium DC., *Prodr*. **1:** 727 (1824); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2:** 83 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 281 (2000).'Jangali Timur'

A prickly shrub. Leaves odd- pinnate, leaflets 5-11, sessile, oblong- lanceolate, acuminate, crenate, pubescent on both surfaces with 1 or 2 spines on the mid- vein.

Voucher specimen: Gorkha, Lho, 2800m, June 6, 2012, S. Sapkota, SS 267 (TUCH).

Zanthoxylum armatum DC., *Prodr*.**1:** 727 (1824); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2:** 83 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 281 (2000).'Parpare Timur'

A small tree with prickles. Leaves odd- pinnate; petiole winged with 2 prickly stipule at the base; leaflets 3-7, lanceolate, acuminate, entire, glabrous. Seeds shiny, black. **Fr:** March- April

Uses: For fuel wood, fruit used for prickles and to treat abdominal pain, headache, indigestion and for appetite.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 3365m, June 2, 2012, S. Sapkota, SS 110 (TUCH).

Zanthoxylum nepalense Babu, *Bull. B. Surv. Ind*. **16**: 60 (1974); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2:** 83 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 281 (2000).'Timur'

A shrub with numerous long straight spines on branchlets. Leaves pinnate, leaflets 7, lanceolate, apex acute, margin serrated, petiole short. Capsule globular, wrinkled.

Uses: For making prickles and leaves contain volatile oil.

Voucher specimen: Gorkha, Samagaun, 3300m, June 10, 2012, S. Sapkota, SS 274 (TUCH).

Zanthoxylum oxyphyllum Edgew. in *Trans. Linn. Soc*. **20:** 42 (1851); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2:** 83 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 281 (2000).'Ban Timur'

A shrub with hooked prickles. Leaves odd- pinnate; leaflets usually 7 in number, elliptic-lanceolate, acuminate, serrulate, gland-dotted beneath. Capsule globular, wrinkled.

Voucher specimen: Gorkha, Shyalla, 3300m, June 10, 2012, S. Sapkota, SS 277 (TUCH).

MELIACEAE

TRICHILIA P. Browne

Trichilia connaroides (Wight & Arn.) Bentv., *Acta Bot. Neerl.* **11**: 13 (1962); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 86 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 196 (2000).'Ankha taruwa'

A small glabrous tree. Leaves alternate, leaflets odd- pinnate, ovate- oblong, acuminate, entire,

base cuneate, glabrous above and glaucous beneath. **Fl.**: April- Dec. **Fr.**: April- Dec.

Voucher specimen: Gorkha, Lho, 3220m, June 9, 2012, S. Sapkota, SS 55 (TUCH).

CORIARIACEAE

CORIARIA L.

Coriaria nepalensis Wall., *Pl. Asiat. Rar.***3**, t. 289(1832**);** Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 102 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 75 (2000).'Macchaino'

A large glabrous shrub. Leaves sub-sessile, opposite, ovate- lanceolate, entire, acute, 3-nerved glabrous. Flowers dark red, in lateral clustered racemes. Fruit black. **Fl:** March **Fr:** May

Uses: Fuel wood, fruit eaten

Voucher specimen: Gorkha, Nearby Namrung, 2670m, June 5, 2012, S. Sapkota, SS 36 (TUCH).

ANACARDIACEAE

RHUS (Tourn.) L.

Key to the species:

1a. Leaflets 7-13, glabrous……..……..……..*R. succedana*

1b. Leaflets 7-11, tomentose beneath……..……..…… *R. wallichianum*

Rhus succedanea L., *Mant. Pl*. **2**: 221 (1771); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2:** 102 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 10 (2000).'Rani Bhalayo'

Rhus acuminata DC., *Prodr*. **2**: 68 (1825).

A medium- sized tree. Leaves odd- pinnate; leaflets 7-13, oblong-lanceolate, long- acuminate, entire, membranous, shining, petiole & lamina glabrous. **Fl.:** May – Jun **Fr.:** Jul.

Uses: Fruit yields wax, which is used in lacquer work and for candles.

Voucher specimen: Gorkha, Lho, 2340m, June 2, 2012, S. Sapkota, SS 133 (TUCH).

Rhus wallichii Hook.f., *Fl. Brit. Ind* **2:**11 (1876); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 102 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 10 (2000).'Thulo Bhalayo'

A small tree, 3m high. Leaves odd- pinnate; leaflets 7-11, ovate-oblong, entire, acuminate, densely tomentose, beneath. Flowers creamy white, in dense axillary tomentose panicles. **Fl:** June

Uses: A varnish is made from the juice.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, June 10, 2012, S. Sapkota, SS 30 (TUCH).

BUXACEAE

SARCOCOCCA Lindl.

Sarcococca saligna (D. Don) Mull. *Arg., Prodr*.**16 (2):** 11 (1864); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 200 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 32 (2000).'Phitphiya'

A small, evergreen shrub. Stem green. Leaves shining, leathery, lanceolate, entire, acute, hairless. Flowers white, in short dense axillary clusters. **Fl.:** Sep. - May

Uses: Fodder for animals, acts as hallucinogenic

Voucher specimen: Gorkha, Gap, 2230m, May 30, 2012, S. Sapkota, SS 06 (TUCH).

AQUIFOLIACEAE

ILEX (Tourn.)L.

Ilex dipyrena Wall. *Fl. Ind. (Roxburgh)***1**: 473 (1820); Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 87 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 12 (2000).'Seto khasru'

A tree with stout branches. Leaves elliptic- lanceolate, spinose- serrated, coriaceous, glabrous. leathery, glossy green. Fruit red, when ripe, globular, grooved. **Fl.:** Apr.-May **Fr.:** Jun.-Jul.

Uses: For fuel wood, fodder.

Voucher specimen: Gorkha, Namrung, 2430m, June 10, 2012, S. Sapkota, SS 31 (TUCH).

ACERACEAE

ACER L.

Key to the species:

1a. Leaves apex acuminate with a tail- like point……..…….…….*A. acuminatum*

1b. Leaves apex acute……2

2a. Leaves with 5- unequal lobes, broader than longer……..……..…..*A. caesium*

2b. Leaves with 3-5 equal lobes, longer than broader……..….*A. pectinatum*

Acer acuminatum Wall. ex D. Don, *Prodr. Fl. Nepal*: 249 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 97 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 5 (2000).'Kanchiro'

An elegant tree with hairless branchlets. Leaves 5- lobed, lobes triangular, sharply, coarsely and toothed, prolonged at the apex into a conspicuous tail- like point. **Fl.:** Mar. - Apr.

Voucher specimen: Gorkha, Namrung, Kharka, 3365m, June 2, 2012, S. Sapkota, SS 24 (TUCH).

Acer caesium Wall. ex Brandis, *Forest Fl. N. W.India:* 111, t 21 (1874); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 97 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 5 (2000).'Kanchiro'

A fairly large deciduous tree. Leaves rather large, broader than longer, with a heart- shaped base, with 5- unequal broad long- pointed coarsely toothed lobes. **Fl.:** Mar. - May

Uses: Fuel wood

Voucher specimen: Gorkha, Namrung, Kharka, 3365m, June 4, 2012, S. Sapkota, SS 132 (TUCH).

Acer pectinatum Wall. ex Pax, *Bot. Jahrb*. **7**: 249 (1886); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 98 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 5 (2000).'Thusi pangree'

A deciduous tree. Leaves 3-5 lobed, lobes triangular to ovate, finely and sharply saw- toothed. Flowers, in long pendulous spike- like clusters. Fruit red, wings spreading, nutlets flat. **Fl.:** May- Jun.

Uses: For fuel wood.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, June 10, 2012, S. Sapkota, SS 29 (TUCH).

BALSAMINACEAE

IMPATIENS L.

Impatiens racemosa DC., *Prodr*.**1:** 688 (1824); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 79 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 23 (2000).'Anchirna'

A glabrous, much- branched herb. Leaves petioled, alternate, elliptic, acuminate, crenate. Flowers small, yellow, in uninterrupted racemes, arising from the axils of the upper leaves. **Fl.:** Jul. - Oct.

Voucher specimen: Gorkha, Namrung, Kharka, 3490m, Oct. 4, 2012, R. Tamang, RT 151 (TUCH).

VITACEAE

Key to the genera:

1a. Leaf simple, rarely compound…….……. **Ampelocissus**

1b. Leaves palmate or digitate……..……..……..… **Tetrastigma**

AMPELOCISSUS Planch.

Ampelocissus sikkimensis (M. A. Lawsonl) Planch., *Monogr. Phan*.**5:** 371 (1887); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 93 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 327 (2000).'Pureni'

A large woody vine- like, tendril- climber. Stem quadrangular. Leaves large, petioled, ovate, heart-shaped, finely toothed, conspicuously wolly beneath, acuminate. **Fl.:** May- June

Voucher specimen: Gorkha, Above Namrung, 2225m, June 12, 2012, S. Sapkota, SS 73 (TUCH).

TETRASTIGMA Planch.

Tetrastigma serrulatum (Roxb.) Planch., *Monogr. Phan*. **5:** 432 (1887); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 95 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 328 (2000).'Pani lahara'

A woody climber. Leaves usually 5- foliate; leaflets, lateral smaller than the central, elliptic-lanceolate, acuminate, bristly serrated in the notches, glabrous; tendrils slender, forked. **Fl.:** May-Jun. **Fr.:** Jun-Oct.

Uses: Fodder, ropes are made from stem & branches

Voucher specimen: Gorkha, Gap, 2230m, June 4, 2012, S. Sapkota, SS 127 (TUCH).

MALVACEAE

MALVA L.

Malva verticillata L., *Sp. Pl*. 689 (1753); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 68(1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 194 (2000).'Laphe sag'

An erect, downy herb. Leaves ong- petioled, sub- orbicular, cordate, 3- 5 lobed, lobes rounded, crenate. Flowers sub- sessile, pinkish white, crowded in the axils. **Fl.:** Jun. - Sep.

Uses: Cultivated as a salad plant.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, Oct. 6, 2012, R. Tamang, RT 196 (TUCH).

THEACEAE

Eurya Thunb.

Eurya acuminata DC., *Mem. Soc. Phys. Geneve* **1**: 418 (1822); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 64 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 308(2000).'Bilaune'

An evergreen shrub with villose young branches. Leaves elliptic- lanceolate, serrated, sparsely pubescent, beneath, acuminate. **Fl**: Aug.-Sep. **Fr**: Oct.-Nov.

Uses: Fuel wood, fodder.

Voucher specimen: Gorkha, Gap, 2230m, May 30, 2012, S. Sapkota, SS 02 (TUCH).

CLUSIACEAE

HYPERICUM L.

Ket to the species:

1a. Leaves shortly petioled…… 2

1b. Leaves sessile, clasping the stem……3

2a. Leaves smaller, apex sub- acute……*H. choisianum*

2b. Leaves larger, apex blunt……..*H. oblongifolium*

3a. Leaves with gland- dotted beneath……..*H. elodeoides*

3b. Leaves with conspicuous venation beneath…….*H. hookeranum*

Hypericum choisianum Wall. ex N. Robson, *Fl. W. Pakistan* **32**: 6 (1973); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 61 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 145 (2000).

A bushy shrub of 1-2m tall. Leaves lanceolate or narrowly ovate, tapering to subacute, short- stalked. Flowers in solitary or in three, yellow. **Fl**: Jun.-Sep. **Fr**: Oct.

Voucher specimen: Gorkha, Lho, 2800m, June 11, 2012, S. Sapkota, SS 38 (TUCH).

Hypericum elodeoides Choisy in DC., *Prodr*. **1**: 552 (1824); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 61 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 145 (2000).'Jibre ghans'

An annual herb of 30cm. Leaves oblong, claping the stem, apex blunt, gland- dotted. Flowers small, custard yellow, on a terminal cyme, with a long pedicel. **Fl.:** Jul. - Sep.

Voucher specimen: Gorkha, Lho, 2800m, Oct. 6, 2012, R. Tamang, RT 219 (TUCH).

Hypericum hookeranum Wight & Arn., *Prodr. Fl. Ind. Orient*. **1**: 99 (1834); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 61 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 145 (2000).'Doli phool'

A bushy shrub up to 2 m. Leaves ovate- lanceolate, few, acute, clasping the stem, conspicuous venation beneath. Flowers sometimes solitary but, often in 3-9 flowered cymes. **Fl**: Jun.-Jul. **Fr**: Aug.-Sep.

Uses: For fuel wood.

Voucher specimen: Gorkha, Namrung, 2920m, June 3, 2012, S. Sapkota, SS 25 (TUCH).

Hypericum oblongifolium Choisy, *Prodr. Monogr. Hyper*. **42,** t. 4 (1821); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 62 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 145 (2000).'Kalan'

A much- branched pendent shrub. Leaves short- stalked, elliptic- lanceolate, blunt, entire, dense network of veins on underside. Flowers, few, large, terminal. **Fl.:** Feb. - Apr.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, Oct. 6, 2012, R. Tamang, RT 190 (TUCH).

VIOLACEAE

VIOLA Tourn. ex L.

Viola biflora L., *Sp. Pl.*: 936(1753); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 47 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 326 (2000).'Pahenle Ghatte Phool'

Viola manaslensis F. Maek., *Acta Phyt. Geobot*. 15: 173 (1954)

A slender erect herb up to 15cm high. Leaf blade reniforme, pubescent especially on upper surface. Flowers yellow with browm streaks on petals.

Voucher specimen: Gorkha, Namrung, Kharka, 3490m, Oct. 4, 2012, R. Tamang, RT 163 (TUCH).

ONAGRACEAE

Key to the genera:

1a. Flowers dimerous; seeds 1 or 2……**Circaea**

1b. Flowers tetramerous; seeds many……**Epilobium**

CIRCAEA L.

Circaea alpina L., *Sp. Pl.* 9 (1753); Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 174 (1979); Press et al. in *Ann. Check. Fl. Pl. Nep.*:206 (2000).

A small herb. Leaves opposite, petioled, ovate, acute, toothed, base rounded, minutely hairy on veins, membranous. Flowers small, white, in terminal, glandular- hairy, racemes.

Voucher specimen: Gorkha, Lho, 3220m, Oct. 9, 2012, R. Tamang, RT 175 (TUCH).

EPILOBIUM L.

Key to the species:

1a. Stem triangular; leaves broader, short- petioled……*E. wallichianum*

1b. Stem simple; leaves not broader, clasping the stem……..*E. hirsutum*

Epilobium hirsutum L., *Sp. Pl.* 347 (1753); Hara *et al.* in *Enu. Fl. Pl. Nep.* **2**: 175 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:206 (2000).

An erect robust herb. Stem branched below. Leaves opposite, ovate- lanceolate, clasping the stem, margin finely toothed, softly hairy, acute. Flowers in a terminal leafy spike- like clusters. **Fl.:** Aug. - Oct.

Voucher specimen: Gorkha, Namrung, Kharka, 2920m, Oct. 2, 2012, R. Tamang, RT 250 (TUCH).

Epilobium wallichianum Hausskn., *Oesterr. B. Zeits*.**29:** 54 (1879; Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 175 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:207 (2000).

An erect herb. Stem triangular. Leaves usually opposite, upper alternate, broader, lanceolate, margin finely toothed, shortly- petioled, acute. Flowers purple, in raceme towards the end of branches. **Fl.:** Jul. - Sep.

Voucher specimen: Gorkha, Gap, 2230m, May 31, 2012, S. Sapkota, SS 17 (TUCH).

ARALIACEAE

HEDERA Tourn. ex. L.

Key to the genera:

1a. Woody vines; leaves simple or pinnate……..……...….**Hedera**

1b. Herbs; leaves mostly palmately compound…….…… **Panax**

Hedera nepalensis K. Koch, *Hort. Dendr*.: 284 (1853); Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 191 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 16 (2000).'Kathe laharo'

A climbing shrub. Leaves coriaceous, ovate-lanceolate, acuminate, base cuneate, entire, glabrous, long- petioled. Flowers, umbels in terminal panicles. Fruit, globular. **Fl:** Oct**.**-Nov**.** **Fr:** Nov.-Dec.

Uses: Leaves and berries are reported to be stimulant.

Voucher specimen: Gorkha, Namrung, Kharka, 3490m, June2, 2012, S. Sapkota, SS 86 (TUCH).

PANAX L.

Panax pseudo-ginseng Wall., *Trans. Med. Soc. Cal*. **4**: 117 (1829); Hara *et al.* in *Enu. Fl. Pl. Nep*. **2**: 192 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 16 (2000).

A rhizomatous herbs with simple unbranched stem up to 80cm. Leaves palmate, whorled in upper part of stem, leaflets 3-6, lanceloate, margin serrated, membranous, acuminate. Flowers in umbel, greenish yellow. Fruit globose. **Fl**: May-Jul. **Fr**: Jul.-Sep.

Voucher specimen: Gorkha, Lho, 2800m, June 11, 2012, S. Sapkota, SS 85 (TUCH).

APIACEAE

Key to the genera:

1a. Leaves simple, entire……..**Bupleurum**

1b. Leaves compound…….……..……..2

2a. Fruits with uncinate bristles……..……..**Sanicula**

2b. Fruits without uncinate bristles……..……..……3

3a. Seed face plane……..……..……**Selinum**

3b. Seed face slightly concave…….……..……**Cortia**

BUPLEURUM L.

Bupleurum hamiltonii Balak., *J. Bombay Nat. Hist. S.***63**: 328 (1967); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 185 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 312 (2000).'Ban Sampu'

Bupleurum tenue Buch.-Ham. ex D. Don

A glabrous herb of 40cm high. Stem erect, usually solitary. Leaves simple, sessile, linear, acute. Flowers small, yellow, on short lateral and terminal branches. **Fl.:** Sep. - Oct. **Fr.:** Sep- Oct.

Voucher specimen: Gorkha, Lho, 2800m, Oct. 7, 2012, R. Tamang, RT 143 (TUCH).

CORTIA DC.

Cortia depressa (D. Don) C. Norman, *J. Bot.***75**: 96 (1937); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 185 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 312 (2000).'Bhutkesh'

A deep- rooted, stemless herb. Rootstock stout, covered with old leaf- sheaths. Leaves 2- 3 pinnate, linear- lanceolate, glabrous, deeply cut into linear bristles- like segments. **Fl.:** Jun. - Aug.

Voucher specimen: Gorkha, Samagaun, Birendra Tal, 3610m, Oct. 8, 2012, R. Tamang, RT 256 (TUCH).

SANICULA (Tourn.) L.

Sanicula elata Hamilt. ex D. Don, *Prodr. Fl. Nep*. 183(1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 189 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 316 (2000).'Kanchurne'

An erect herb, 20-50 cm high. Leaves palmately 3-5- partite, segments toothed or lobed, glabrous, long petioled. Flowers in compound umbels, whitish. **Fl.:** May- Oct. **Fr.:** May- Oct.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, Oct. 6, 2012, R. Tamang, RT 215 (TUCH).

SELINUM L.

Selinum sp.

A tall herb. Leaves glabrous, lanceolate, acute. Bracts long, linear, elliptic- lanceolate, acuminate. Flowers in compound umbels.

Voucher specimen: Gorkha, Samagaun, 3600m, 10 June, 2012, S. Sapkota, SS 266 (TUCH).

CORNACEAE

BENTHAMIDIA Spach.

Benthamidia capitata (Wall.) H. Hara in *Journ. Arn. Arb.***29:** 115 (1948); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 193 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 75 (2000).'Dimur'

Cornus capitata Wall.; *Fl. Brit. Ind.* **2:** 745 (1879).

A small tree. Leaves opposite, petioled, elliptic, acute, entire, leathery, glaucous. Flowers greenish-yellow, small, crowded in hemispherical heads.Fruits very small, in a globose head. **Fl:** May- June

Voucher specimen: Gorkha, Gap, 2230m, May 30, 2012, S. Sapkota, SS 88 (TUCH).

ERICACEAE

Key to the genera:

1a. Leaves sessile; flowers solitary…… **Cassiope**

1b. Leaves petiolate; flowers in clusters……..……..2

2a. Flowers in domed clusters……...….. **Rhododendron**

2b. Flowers in raceme…….…….……..3

3a. Capsule in fruit succulent……**Gaultheria**

3b. Capsule in fruit unaltered……..……..…….4

4a. Valves of capsule not thickened on the margin……..…….……**Pieris**

4b. Valves of capsule thickened and hardened on the margin…….……**Lyonia**

CASSIOPE D. Don

Cassiope fastigiata (Wall.) D. Don, *Edinburgh New Philos. J.***17**: 157 (1834); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 55 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 101 (2000).

Andromeda fastigiata Wall. in *As. Research*. **13**: 394 (1820).

An erect shrub up to 30cm. Leaves ovate-oblong, small, 4- fariously imbricate, acuminate, margin membranous. Flowers white, bell- shaped, solitary, axillary. **Fl**: May-Jul. **Fr**: Jul.-Sep.

Voucher specimen: Gorkha, Above Samagaun, 3690m, June 7, 2012, S. Sapkota, SS 39 (TUCH).

GAULTHERIA L.

Gaultheria trichophylla Royle, *III Bot. Himal. Mts*. **1(6):** 200, 260 (1835); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 55 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 102 (2000).

A dwarf shrub with creeping leafless stem and short bristly leafy shoots up to 15cm. Leaves elliptic-oblanceolate, hairless, conspicuous bristles on margin, acute. Flowers solitary, axillary, white. **Fl**: Aug.-Sep. **Fr**: Sep.

Uses: Fruit edible.

Voucher specimen: Gorkha, Samagaun, 4000m, June 9, 2012, S. Sapkota, SS 137 (TUCH).

LYONIA Nuttalla

Lyonia ovalifolia (Wall.) Drude, *Pflanzenfam*. **4**(1): 44 (1889): Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 55 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 102 (2000).'Angeri'

A small tree upto 20m. Leaves ovate, apex acuminate, base rounded hairless above, short- stalked. Flowers white, in long horizontal axillary clusters. **Fl:** Apr.-May **Fr**: Nov.-Dec.

Uses: Fuel wood, leaves used as a roll for smoking. Leaf used for curing boils and pimples.

Voucher specimen: Gorkha, Lho, 3390m, June 9, 2012, S. Sapkota, SS 41 (TUCH).

PIERIS D.Don

Pieris formosa (Wall.) D. Don in *Edinb. New Philos. Journ.* **17:** 159 (1834); Hara *et al. in Enu. Fl. Pl. Nep.* **3**: 159 (1982); Press *et al. in Ann. Check. Fl.Pl. Nep.:* 102 (2000).'Lek Angeri'

A small tree with glabrous branches. Leaves short- petioled, lanceolate, short- acuminate, serrate, glabrous. Flowers white, in terminal branched panicles. **Fl.:** Mar. - May

Uses: Leaf extract used as anthelminthic

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, June 4, 2012, S. Sapkota, SS 40 (TUCH).

RHODODENDRON L.

Key to the species:

1a. Leaves with hairy petiole……..…….*R. barbatum*

1b. Leaves without hairy petiole……..……..2

2a. Leaves margin entire……..……..4

2b. Leaves margin not entire……...……. 3

3a. Leaves margin recurved, setose beneath……..*R. setosum*

3b. Leaves margin with conspicuous bristles…….*R. ciliatum*

4a. Lower surface of leaf densely brown……...…….*R. campanulatum*

4b. Lower surface of leaf scaly…….…..5

5a. Flower color white…… *R. anthopogon*

5b. Flower color pink……...……*R. lepidotum*

Rhododendron anthopogon D. Don, *Mem. Wern. Nat. Hist. Soc*. **3**: 409 (1821); Hara *et al.* in *Enu. Fl. Pl. Nep*. **3**: 56 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 102 (2000).'Sunapate'

An aromatic shrub up to 70cm. Leaves ovate- lanceolate, densely scaly beneath, mucronate at the apex. Flowers white, in terminal fascicles. **Fl**: May-Jul. **Fr**: Jul.-Aug.

Uses: Used mixed with Juniper for incense in Buddhist monasteries. Leaves and flowers used in indigestion, liver and lung troubles and as local tea.

Voucher specimen: Gorkha, Namrung, Kharka, 3490m, June 2, 2012, S. Sapkota, SS 20 (TUCH).

Rhododendron barbatum Wall. ex G. Don, *Gen. Syst.* **3**: 844 (1834); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 57(1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 102 (2000).'Rato Chimal'

A small tree up to 10m. Leaves elliptic-oblanceolate, dendroid hairs and stalked, glands beneath, acute, margin reflexed, glabrous; petiole covered with bristles. **Fl**: Apr.-May **Fr**: May

Uses: Fuel wood, timber, flower ornamental.

Voucher specimen: Gorkha, Lho, 3390m, June 9, 2012, S. Sapkota, SS 43 (TUCH).

Rhododendron campanulatum D.Don, *Mem. Wern. Nat. Hist. Soc*. **3**: 410 (1821); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 57 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 103 (2000).'Cheriala'

A large shrub upto 5m, branchlets glabrous. Leaves thinly coriaceous, elliptic, acute, base cuneate, glabrous, with fine, pale brown on lower surface. Petioles glabrous. **Fl:** May Jun. **Fr:** Jun**.**

Uses: Fuel wood, leaves and flowers poisonous.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3800m, June 1, 2012, S, Sapkota, SS 19 (TUCH).

Rhododendron ciliatum Hook.f., *Rhod. Sik. Him.*: n. 26, t.24 (1851); Hara *et al. in Enu. Fl. Pl. Nep.* **3**: 57 (1982); Press *et al. in Ann. Check. Fl.Pl. Nep.:* 103 (2000).

A widely- branched shrub. Leaves elliptic, with conspicuous bristly margins and scaly beneath. Flowers, funnel- shaped, pink in colour, gradually turning white. **Fl.:** May- Jun.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3800m, June 1, 2012, S. Sapkota, SS 93 (TUCH).

Rhododendron lepidotum Wall. ex G. Don, *Gen. Syst.* **3**: 845 (1834); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 58 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 103 (2000).'Bhale Sunapati'

A low shrublet about 15-60cm, branchlets scaly. Leaves oblanceolate, acute, base cuneate, shortly petiolate. Flowers pink, 1-2 flowered, in terminal fascicles. **Fl:** May-Jun. **Fr:** Jun.-Jul.

Uses: Incense, flowers used on wounds

Voucher specimen: Gorkha, Lho, 3390m, June 9, 2012, S. Sapkota, SS 42 (TUCH).

Rhododendron setosum D. Don, *Mem. Wern. Nat. Hist. Soc*. **3**: 408 (1821); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 59 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 104 (2000).'Jhuse sunpati'

A strongly aromatic shrub up to 70cm. Leaves oblong-obovate, red brown scales, margin recurved, glandular, scaly above and densely scaly and setose beneath. Flowers 2-5, in raceme, pale to deep purple. **Fl**: Jun.-Jul. **Fr**: Jul.-Aug.

Voucher specimen: Gorkha, Samagaun, 4000m, Oct. 9, 2012, R. Tamang, RT 263 (TUCH).

PRIMULACEAE

Key to the genera:

1a. Corolla tube longer than the calyx…….……..…….**Primula**

1b. Corolla tube shorter than the calyx…….…….……**Androsace**

ANDROSACE (Tourn.) L.

Key to the species:

1a. Leaves petioled, without hairs……...…….2

1b. Leaves sessile, villous with silvery grey hairs…….*A. sarmentosa*

2a. Flowers pinkish- white on wooly stem……...…..……*A. lanuginosa*

2b. Flowers pink on hairy pedicels…….……*A. strigillosa*

Androsace lanuginosa Wall. ex Hook.f., *Fl. Br. Ind.***3**: 499 (1882); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 63 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 242 (2000).

A herb with densely silky- haired spreading stem. Leaves narrow elliptic, acute, rosette, petioled. Flowers pinkish- white, in compact umbels, borne on wooly- haired stem. **Fl.:** May- Aug.

Voucher specimen: Gorkha, Samagaun, Birendra Tal, 3610m, June 6, 2012, S. Sapkota, SS 61 (TUCH).

Androsace sarmentosa Wall., in Roxb., *Fl. Ind*. **2**: 14 (1824); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 63 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 243 (2000).

A herb with trailing stolons. Leaves sessile, rosette, elliptic- lanceolate, villous with silvery grey hairs. Flowers umbellate, pinkish, borne on long flowering stems. **Fl.:** May- Jul.

Voucher specimen: Gorkha, Lho, 3390m, June 9, 2012, S. Sapkota, SS 103 (TUCH).

Androsace sp.

A pubescent herb. Leaves palmate, broad, ovate, glabrous, long-petioled. Flowers small, white, on slender pedicels, in terminal umbels.

Voucher specimen: Gorkha, Lho, 3000m, June 6, 2012, S. Sapkota, SS 276 (TUCH).

Androsace strigillosa Franch., *Bull. S. B. Fr*. **32**: 10 (1885); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 64 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 243 (2000).'Khalyu'

An erect rather tufted herb. Leaves ovate- lanceolate, obtuse, petioled, base cuneate. Flowers pink, in a lax umbel, borne on slender hairy pedicels. **Fl.:** May- Jul.

Voucher specimen: Gorkha, Above Samagaun, 3690m, Oct. 9, 2012, R. Tamang, RT 252 (TUCH).

PRIMULA L.

Primula sikkimensis Hook.f., *B. Mag.***77:** t. 4597 (1851); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 74 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 247 (2000).'Medosero'

A robust herb. Leaves oblong- lanceolate, obtuse, petioled. Flowers yellow, numerous, in superposed umbels. **Fl.:** May- Jul.

Uses: Flowers used in fever and diarrhoea.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3740m, May 31, 2012, S. Sapkota, SS 11 (TUCH).

OLEACEAE

JASMINUM L.

Jasminum humile L., *Sp. Pl*.: 7 (1753)**;** Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 80 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.:205 (2000).'Masino Jai'

A puberulous, erect shrub. Leaves alternate, pinnated leaflets, sub- sessile, oblong, elliptic, acuminate. Flowers yellow, in axillary and terminal cymes. Fruit succulent, globose and black.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, Oct. 6, 2012, R. Tamang, RT 197 (TUCH).

GENTIANACEAE

Key to the genera:

1a. Calyx and corolla tube of equal length……3

1b. Calyx and corolla tube of variable length……..……..……2

2a. Presence of nectaries at the bae of ovary…….. **Gentiana**

2b. Absence of nectaries……...……...……. **Halenia**

3a. Calyx without intracalycular membrane…….…..…….. **Gentianella**

3b. Calyx with intracalycular membrane…….…...……**Swertia**

GENTIANA Tourn. ex L.

Key to the species:

1a. Flowers blue without any marks……..…*G. capitata*

1b. Flowers blue marked with green and white……..…..*G. depressa*

Gentiana capitata Buch.-Ham. ex D. Don., *Prodr. Fl. Nep.* 126 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 92 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:114 (2000).'Haans phool'

A small erect herb. Leaves sessile, ovate closely clustered under flower head, acute, entire, basal leaves soon disappearing. Flowers blue in a rounded terminal leafy head. **Fl.:** Dec. - Apr.

Voucher specimen: Gorkha, Shyalla, 3054m, June 10, 2012, S. Sapkota, SS 48 (TUCH).

Gentiana depressa D. Don, *Prodr.Fl. Nep.* 125 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 92 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:114 (2000).'Glagengaga'

A decumbent herb with spreading stems. Branch very short with densely embricated leaves. Leaves sessile, elliptic, acute. Flower blue marked with green and white, solitary, terminal, sessile. **Fl.:** Sep. - Nov.

Voucher specimen: Gorkha, Namrung, Kharka, 3490m, Oct. 4, 2012, R. Tamang, RT 155 (TUCH).

GENTIANELLA Moench.

Gentianella moorcroftiana (Wall. ex G. Don) Airy Shaw, in Hook., *Icon. Pl*. **35:** sub t. 3431 (1943); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 94 (1982); Press et al. in *Ann. Check. Fl. Pl. Nep.*:116 (2000).'Dhumpu'

A much- branched herb. Leaves lanceolate, opposite, clasping the stem ,acute, entire. Flowers tubular in a lax cluster, pale blue. **Fl.:** Aug. - Oct.

Voucher specimen: Gorkha, Above Samagaun, 3690m, Oct. 9, 2012, R. Tamang, RT 245 (TUCH).

HALENIA Borkh.

Halenia elliptica D. Don, *London Edinb. Philos. Mag. J. Sci.* **8:** 77 (1836); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 95 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:114 (2000).'Tikta'

An erect, hairless herb. Leaves opposite, lower short- stalked, upper sessile, ovate, acute, entire. Flowers light blue, small, in axillary and terminal branched clusters. **Fl:** Jul. - Oct.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, June 10, 2012, S. Sapkota, SS 138 (TUCH).

SWERTIA L.

Key to the species:

1a. Leaves sub- sessile; corolla with brown spots……..……. *S. angustifolia*

1b. Leaves sessile; corolla without brown spots……..…….2

2a. Flowers greenish yellow in colour…….…….*S. chirayita*

2b. Flowers bluish in colour……..……*S. petiolata*

Swertia angustifolia Buch.-Ham. ex D. Don, *Prodr. Fl. Nep.* 127 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 96 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:115 (2000).'Chirayito'

An erect branched herb. Leaves linear- lanceolate, acute, opposite, sub- sessile, entire, glabrous. Flowers in lax- flowered, spreading, terminal panicles, corolla white with brown spots. **Fl.:** Sep. - Oct.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, Oct. 6, 2012, R. Tamang, RT 192 (TUCH).

Swertia chirayita (Roxb. ex Fleming) H. Karst., *Deutche Fl.:* 1025(1883); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 96(1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.:118(2000).'Chirayito'

Gentiana chirayita Roxb. ex Fleming in *As. Res.***11**: 167(1812).

An erect herb. Stem quadrangular. Leaves elliptic, sessile, acute, slightly serrated. Flowers 4-merous, in numerous small clusters on branches of panicles with bracts, greenish yellow. **Fl:** Sep.-Oct
Fr: Oct.-Nov.

Uses: Whole plant is used for curing fever.

Voucher specimen: Gorkha, Above Samagaun, 3690m, Oct. 9, 2012, R. Tamang, RT 246 (TUCH).

Swertia petiolata D. Don, *London Edinb. Philos. Mag. J. Sci.***8**: 77 (1836); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 97 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.:118 (2000).

An erect branched herb. Leaves narrow- lanceolate, long- stalked, clasping the stem at the base, acute. Flowers in lax spike- like terminal clusters, small, blue in colour. **Fl.**: Jul. - Aug.

Voucher specimen: Gorkha, Above Samagaun, 3690m, Oct. 9, 2012, R. Tamang, RT 247 (TUCH).

ASCLEPIADACEAE

VINCETOXICUM N. M. Wolf

Vincetoxicum hirundinaria Medik., *Hist. Comm. Acad. Elect. Theod.-Palat. Phys.* **6**: 404 (1790).

An erect herb. Leaves opposite, short- stalked, with rounded base, lower leaves blunt, upper acuminate. Capsules cylindrical, broader at the base, tapering gradually to apex. **Fl.:** May. - Jul.

Uses: Poisonous not grazed by animals.

Voucher specimen: Gorkha, Shyalla, 3050m, Oct. 7, 2012, R. Tamang, RT 209 (TUCH).

CONVOLVULACEAE

CUSCUTA L.

Cuscuta reflexa Roxb., *Pl. Corom.* **2**: 3, t. 104 (1798); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 106 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.:73 (2000).'Aakasbeli'

A leafless stem parasite, forming dense interlacing masses of stout yellow stem. Flowers, bell-shaped, milky white in lax clusters. **Fl.:** Aug. - Oct.

Uses: Plant juice is given in jaundice, body pain.

Voucher specimen: Gorkha, samagaun, Birendra Tal, 3610m, June 8, 2012, S. Sapkota, SS 37 (TUCH).

BORAGINACEAE.

CYNOGLOSSUM (Tourn.) L.

Cynoglossum zeylanicum Thunb. ex Lehm. in *Neue Sehr. Nat. Ges. Halle* **3(2)**: 20 (1817); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 100 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 29 (2000).'Kanike kuro'

C. furcatum Wall.ex. Roxb.; *Fl. Brit. Ind.* **4**: 155 (1883).

An erect herb with depreesed strigose hairs. Leaves long petiolate, oblong- lancealate, margin entire, apex acute, cauline leaves sessile. Flower small, blue, pedicellate, in furcated scorpoid racemes. **Fl.:** May- Aug.

Uses: Plant used as antiseptic and healing for cuts.

Voucher specimen: Gorkha, Lho, 2800m, June 7, 2012, S. Sapkota, SS 135 (TUCH).

VERBENACEAE

Caryopteris Bunge.

Caryopteris odorata (D. Don) B. L. Rob.'Nilo ghusure'

A shrub upto 1m high. Leaves elliptic, short- stalked, entire, acuminate. Flowers pale mauve, in axillary and terminal dense spike- like clusters. **Fl.:** Feb. - May.

Voucher specimen: Gorkha, Nearby Namrung, 2710m, June 6, 2012, S. Sapkota, SS 71 (TUCH).

LABIATAE

Key to the genera:

1a. Corolla with 4- 5 nearly, equal lobes…….……..……..**Elsholtzia**

1b. Corolla two- lipped.……..2

2a. Calyx with 5 or 10 more or less equal lobes…….……...……..**Colquhounia**

2b. Calyx two- lipped.……...……3

3a. Corolla tube straight……...……4

3b. Corolla tube hooded.……..……..5

4a. Lips of calyx not divided into lobes…….……**Glechoma**

4b. Upper lip of calyx 3- lobed, lower lip two- lobed…….……..……**Clinopodium**

5a. Calyx lip entire; bracts inconspicuous…….……**Scutellaria**

5b. Calyx lip toothed or lobed; bracts conspicuous……..**Prunella**

CLINOPODIUM L.

Clinopodium umbrosum (M. Bieb.) C. Koch, *Linnea.***21**: 673 (1848); Hara *et al.* in *Enu. Fl. Pl. Nep*. **3**: 150 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 152(2000).'Bilajor'

Melissa umbrosa M. Beeb., *Fl. Taur.-Cauc*. **2**: 63 (1808)

A softly hairy herb. Leaves ovate, opposite, acute, base cuneate, margin serrate, petioled. Flowers pink, in dense, axillary and terminal whorls. **Fl**: May-Aug. **Fr**: Aug.-Sep.

Voucher specimen: Gorkha, Lho, 2800m, Oct. 7, 2012, R. Tamang, RT 137 (TUCH).

COLQUHOUNIA Wall**.**

Colquhounia coccinea Wall., *Tr. Linn. S. London* **13**: 609 (1822); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 151 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 152(2000).'Phulpat'

A tall tomentose shrub. Leaves ovate acuminate, base rounded, margins serrulate, both surface hairy, lower surface whitish.Flowers tubular bright red, whorled, in axillary spikes. **Fr**: Nov.-Dec. **Fl**: Dec.-Jan.

Uses: Fuel wood. Sweet nectar of flower is sucked.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, June 10, 2012, S. Sapkota, SS 45 (TUCH).

ELSHOLTZIA Willd.

Key to the species:

1a. Herbs with short- petioled leaves; flowers yellow…….……..…. *E. eriostachya*

1b. Shrubs with sessile leaves; flowers creamy……..……..*E. fruticosa*

Elsholtzia eriostachya (Benth.) Benth., *Lab. Gen. Sp.* 163 (1833); Hara *et al.* in *Enu. Fl. Pl. Nep*. **3**: 153 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 153(2000).'Lenja'

A small, hairy herb. Leaves broad, short- petioled, oblong, toothed, softly hairy. Flowers yellow, in cylindric shaggy- haired spikes. **Fl:** Jul. - Aug.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2710m, Oct.6, 2012, R. Tamang, RT 223 (TUCH).

Elsholtzia fruticosa (D. Don) Rehder, *Pl. Wilson.* **3**: 381 (1916); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 153 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 153 (2000).'Chhinki'

Shrub about 1m. Stems pubescent, subterete. Leaves sessile, margin serrate or crenate-serrate, both surfaces pubescent and densely sessile glandular. Spikes pubescent. Bracts lanceolate, c5mm. Corolla creamy. Nutlets oblong. **Fl**: Aug.-Sep. **Fr**: Sep.-Oct.

Uses: Stems and leaves for covering theki.

Voucher specimen: Gorkha, Namrung, Kharka, 2920m, Oct. 5, 2012, R. Tamang, RT 174 (TUCH).

GLECHOMA L.

Glechoma nivalis (Benth.) Press; H. Hara *et al., Enu. Flow. Pl. Nep.***3**: 155 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 153 (2000).'Dhyarin'

A dwarf hairy herb. Leaves, aromatic, rounded, crowded, grey- green, wrinkled. Flowers, axillary, up-curved pale mauve. **Fl.:** Jun. - Jul.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, Oct. 5, 2012, R. Tamang, RT 186 (TUCH).

PRUNELLA L.

Prunella vulgaris L., *Sp. Pl.* 600 (1753); Hara *et al.* in *Enu. Fl. Pl. Nep*. **3**: 162 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 158 (2000).

A small hairy herb. Stems many, spreading Leaves petioled, oblong, acute, toothed, base cuneate. Flowers blue, crowded in an erect, cylindric, terminal spikes. **Fl:** May- Sep.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3740m, Oct. 4, 2012, R. Tamang, RT 249 (TUCH).

SCUTELLARIA Riv. ex L.

Scutellaria prostrata Jacq. ex Benth., *Lab. Gen. Sp.* 733 (1835); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 165 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 159 (2000).

A dwarf spreading herb. Leaves opposite, ovate, deeply coarsely toothed, softly hairy on both sides, base cuneate, acuminate, long petioled. Flowers yellowish white, in short dense terminal clusters. **Fl**: June- Sep.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3740m, May 31, 2012, S. Sapkota, SS 96(TUCH).

SOLANACEAE

SOLANUM (Tourn.) L.

Solanum nigrum L., *Sp. P1*. 186 (1753); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 111 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 304 (2000).'Jangali bihi'

A weedy herb, glabrous. Leaves ovate- oblong, entire, base cuneate, glabrous. Flowers white, nodding in axillary umbelled cymes. Fruit, a purple black berry. **Fl:** May.

Uses: Plant sedative, alternative, diuretic, and expectorant.

Voucher specimen: Gorkha, Lho, 2340m, Oct.2, 2012, R. Tamang, RT 142 (TUCH).

SCROPHULARIACEAE

Key to the genera:

1a. Stamens two in number……..……**Veronica**

1b. Stamens 4 in number……..…….2

2a. Corolla regular, not two- lipped……**Hemiphragma**

2b. Corolla two- lipped……...……..…….3

3a. Flowers yellow, or white or green……...……4

3b. Flowers pink, purple or blue……...……..5

4a. Leaves pinnatisect……...……**Pedicularis**

4b. Leaves not pinnatisect…….……**Euphrasia**

5a. Fruit splitting into two valves……...……..……**Mazus**

5b. Fruit not splitting……..……..……**Lancea**

MAZUS Lour. Fl. Cochich.

Mazus japonicas (Thunb.) O. Kuntze.

A small, tufted hairy herb. Leaves, petioled, obovate- spathulate, crenate, acute. Flowers, in terminal lax- flowered racemes, white, minutely bracteate. Fruit capsular. **Fl.:** Mar. - Nov. **Fr.:** Oct. - Nov.

Voucher specimen: Gorkha, Shyalla, 3050m, June 10, 2012, S. Sapkota, SS 114 (TUCH).

EUPHRASIA L.

Euphrasia himalayica Wettst., *Monogr. Euphrasia* 180, t. 4, f. 291-295 (1896); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 113 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 292 (2000).'Hare'

A small erect herb. Stem slender with erect branches. Flowers in terminal spike- like clusters of small white, 2- lipped flowers with yellow throats.

Voucher specimen: Gorkha, Samagaun, 4000m, Oct. 9, 2012, R. Tamang, RT 254 (TUCH).

HEMIPHRAGMA Wall.

Hemiphragma heterophyllum Wall. In *Trans.L.Soc.Lond.* **13:** 611 (1822); Hara *et al.* in *Enu. Fl. Pl. Nep*. **3**: 114 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 292 (2000).

A prostrate trailing pubescent herb. Leaves opposite, orbicular-cordate, ovate, obtuse, crenate, short petioled. Fruit capsular, berry-like, globose red, shining. **Fl:** March.

Voucher specimen: Gorkha, Lho, 2840m, June 6, 2012, S. Sapkota, SS 113 (TUCH).

LANCEA Hook.f. & Thomson.

Lancea tibetica Hook. f. & Thomson, *Hooker's J. Bot. Kew Gard. Misc*. **9:** 244, t. 7 (1857); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 114 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 293 (2000).

A small stemless herb. Leaves spathulate, entire, narrowed to a short half- clasping petiole. Flowers bright mauve, in a central cluster. **Fl.:** May. - Aug.

Voucher specimen: Gorkha, Gap, 2230m, May 30, 2012, S. Sapkota, SS 10 (TUCH).

PEDICULARIS L.

Key to the species:

1a. Upper lip of corolla sharply bent and beaked……..……*P. bifida*

1b. Lip of corolla without beak……. 2

2a. Leaves opposite; capsule ovate- oblong…….……. *P. gracilis*

2b. Leaves alternate; capsule lanceolate……...……..…3

3a. Flowers purplish- pink in colour……..……..*P. megalantha*

3b. Flowers rose- purple, with white throat……...…..……*P. siphonantha*

Pedicularis bifida (Buch.-Ham. ex D. Don) Pennell, *Monogr. Acad. Nat. Sci. Philad.***5:** 144 (1943); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 122 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 295 (2000).

An erect herb. Stem hairy, branched at base. Leaves petioled, elliptic, obovate, obtuse, crenate, hairy. Flowers in short terminal racemes, upper lip of corolla sharply bent and beaked.

Voucher specimen: Gorkha, Shyalla, 3050m, Oct. 7, 2012, R. Tamang, RT 233 (TUCH).

Pedicularis gracilis Wall. ex Benth., *Scroph. Ind.*: 52 (1835); Hara *et al*. in *Enu. Fl. Pl. Nep.* **3**: 123 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 296 (2000).

A hemiparasitic herb up to 1m. Leaves opposite, whorled of 4, petioled, lamina lanceolate-oblong, pinatifid, 4-8 pairs of oblong-linear. Flowers pink, in a lax terminal raceme. Capsule ovate-oblong. **Fl**: Jun.-Jul. **Fr**: Jul.-Aug.

Voucher specimen: Gorkha, Shyalla, 3050m, Oct. 7, 2012, R. Tamang, RT 234 (TUCH) **.**

Pedicularis megalantha D. Don, *Prodr. Fl. Nep.:* 94 (1825); Hara *et al.* in *Enu. Fl. Pl. Nep*. **3**: 124 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 297 (2000).

A hemiparasitic herb up to 90cm. Leaves alternate, petioled, lamina pinnatified. Flowers solitary axillary, pale purplish to pink, in a dense terminal head. Capsule lanceolate. **Fl**: Jun.-Jul. **Fr**: Aug.-Sep.

Voucher specimen: Gorkha, Above Samagaun, 3690m, Oct. 9, 2012, R. Tamang, RT 255 (TUCH).

Pedicularis siphonantha D. Don, *Prodr. Fl. Nep.*: 95 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 125 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 299 (2000).'Ponki'

A hemiparasitic up to 35cm. Leaves alternate, mostly radical, petioled, lamina linear-oblong, pinnatified, 5-8 pairs, ovate. Inflorescence axillary. Flowers rose-purple, with white throat. Capsule lanceolate, ellipsoid. **Fl**: May-Aug. **Fr**: Aug.-Sep.

Uses: Plant used for antidote to poisoning, liver disorder, fever and headache.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3490m, Oct. 4, 2012, R. Tamang, RT161 (TUCH).

VERONICA L.

Key to the species:

1a. Leaves opposite, petioled; flowers blue in colour…….……..*V. canna*

1b. Leaves sessile; flowers white in colour……..…..*V. himalensis*

Veronica canna Wall. ex Benth.,*Scroph. Ind.* 45 (1835); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 129 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 300 (2000).

An erect, pubescent herb. Stem simple, rarely branched. Leaves opposite, petioled, ovate, acute, crenate. Flowers blue, in axillary and terminal racemes.

Voucher specimen: Gorkha, Lho, 2340 m, June 10, 2012, S. Sapkota, SS 116 (TUCH).

Veronica himalensis D. Don, *Prodr. Fl. Nepal*.: 92 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 129 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*:301 (2000).

A stout- stemmed herb. Leaves, sessile, ovate, acute, rounded base, coarsely sharp- toothed. Flowers, white, in long pedicellate terminal and axillary clusters. **Fl.:** Jun. - Aug.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3490m, Oct. 4, 2012, R. Tamang, RT 162 (TUCH).

OROBANCHACEAE

Key to the genera:

1a. Upper lip of corolla 2- lobed lower lip 3- lobed…….…… **Orobanche**

1b. Upper lip of corolla erect, hooded, lower very short…….…. **Boschniakia**

BOSCHNIAKIA C. A. Mey.

Boschniakia himalaica Hook. & Thomson ex Hook. f. ; *Fl. Br. Ind.* **4 (11**: 327 (1884); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 130 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:227 (2000).'Bese Gano'

A robust, black, leafless parasite. Rootstock globose. Stem simple, unbranched, erect. Flowers greyish- purple, in stout, dense- flowered racemes. **Fl.:** Apr. - Jun. **Fr.:** Jun.-Sep.

Uses: Whole plant is used medicinally for regulating vital energy, alleviating pain and relieving cough.

Voucher specimen: Gorkha, Namrung, Mathilo Rupal, 3800m, June 4, 2012, S. Sapkota, SS 99 (TUCH).

OROBANCHE L.

Keys to the species:

1a. Stem branched in middle; flowers sub- sessile……..……..*O. aegyptiaca*

1b. Stem unbranched; flowers pedicellate……...……..…..*O. cernua*

Orobanche aegyptiaca Pers., *Syn. Pl.* 2: 181 (1807); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 130 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*:227 (2000).'Thokra jhar'

A parasitic, glandular, pubescent herb. Stem branched above middle. Leaves ovate- lanceolate, sessile, along with bracts, acute. Flowers sub- sessile, in spicate. **Fl.:** Apr.- Jun. **Fr.:** Jun.- Aug.

Voucher specimen: Gorkha, Gap, 2230m, May 30, 2012, S. Sapkota, SS 01 (TUCH).

Orobanche cernua Loefl., *Iter Hisp.* 152 (1758); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 130 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*:227 (2000).

A parasitic , densely glandular, herb. Stems unbranched. Leaves lanceolate, pointed. Flowers, pedicellate, in a dense spike, borne on a stout brown stem. Seeds long, ellipsoid. **Fl.:** Jun. - Aug.

Voucher specimen: Gorkha, Shyalla, 3050m, Oct. 7, 2012, R. Tamang, RT 227 (TUCH).

GESNERIACEAE

DIDYMOCARPUS Wall.

Didymocarpus aromaticus Wall. ex D. Don., *Prodr. Fl. Nep.* 123 (1825), 'aromatica'; Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 134 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 121 (2000).'Pakhanbetta'

An erect, slender herb. Leaves, several on the stem, broadly elliptic, petioled, finely toothed, woolly-haired. Flowers, deep purple, axillary. Fruit, a capule. **Fl.:** Jun. - Aug.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, Oct. 6, 2012, R. Tamang, RT 193 (TUCH).

ACANTHACEAE

Key to the genera:

1a. Leaf sessile, margin crenulate……...……..……..**Ruellia**

1b. Leaf petioled, margin entire……..…….…….**Strobilanthes**

STROBILANTHES Bl.

Key to the species:

1a. Flowers with persistent bracts…….…….…….. *S. wallichi*

1b. Bracts fall before flowers expand……...…….. *S. alatus*

Strobilanthes wallichi Nees; Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 4 (2000).

Pteracanthus alatus Wall. ex Nees

An under shrub. Stem weak, quadrangular. Leaves entire, ovate- lanceolate, lower petioled, upper stalkless. Flowers blue, in lax branched leafy clusters, with persistent bracts. **Fl.:** Jun. - Jul.

Voucher specimen: Gorkha, Namrung, Kharka, 3365m, June 4, 2012, S. Sapkota, SS 131 (TUCH).

Strobilanthes alatus Nees.; Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 4 (2000).

Pteracanthus urticifolius (Kuntze) Bremek

An undershrub. Leaves, oblong- lanceolate, acuminate, lower long- petioled, upper sessile. Flowers blue, in glandular- hairy inflorescence, bracts fall before flowers expand. **Fl.:** Jul. - Oct.

Voucher specimen: Gorkha, Namrung, Kharka, 3365m, June 4, 2012, S. Sapkota , SS 130 (TUCH).

RUELLIA L.

Ruellia sp.

A prostrate herb with. Leaves sessile. leaf blade margin crenulate. Inflorescences axillary or terminal, forming dichasiate spikes, thyrses, or panicles, sometimes reduced to a solitary flower Flowers subsessile.

Voucher specimen: Gorkha, Lho, 2800m, June 7, 2012, S. Sapkota, SS 275 (TUCH).

PLANTAGINACEAE

PLANTAGO (Tourn.) L.

Plantago himalaica Pilg., in *Engl., Pflreich* IV-269 (Ht. 102): 62 (1937); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 167 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 235 (2000).

A small, scapigerous herb. Leaves petioled, oblong- ovate, acute, crenate. Flowers white, crowded in short slender, cylindric spikes.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3490m, June 4, 2012, S. Sapkota, SS 21 (TUCH).

RUBIACEAE

Key to the genera:

1a. Trees or shrubs; fruit an elongate capsule…….**Hymenopogon**

1b. Herbaceous plants; fruits globose……...…….2

2a. Leaves sessile; fruit fleshy…….…..…..**Galium**

2b. Leaves petiolate; fruit dry……..….**Rubia**

GALIUM L.

Key to the species

1a. Leaves in whorl of 4, without recurved margins……...…..….*G. hirtiflorum*

1b. Leaves in whorls of 6-8, with recurved margins……..…..*G. verum*

Galium hirtiflorum Req. ex DC., *Prodr.***4**: 600 (1830); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 201 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 274 (2000).'Lute jhar'

A scrambling, herbs of 40cm. Leaves in whorls of 4, thin & membranous, linear-lanceolate, surface hirsute all over. Flowers pale yellow, in terminal and axillary cymes. **Fl**: Jul.-Sep. **Fr**: Sep.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, June 3, 2012, S. Sapkota, SS 65 (TUCH).

Galium verum L., *Sp. Pl.***1**: 107 (1753).

A prostrate herb. Leaves 6-8 in each whorl, linear, acute, shining, hairy above, densely hairy beneath, margins recurved. Flowers yellow, numerous, in rather dense branched terminal cluster. **Fl.:** Jun. - Aug. **Fr.**: May- Oct.

Voucher specimen: Gorkha, Lho, 2340m, Oct. 2, 2012, R. Tamang, RT 141 (TUCH).

HYMENOPOGON Wall.

Hymenopogon parasiticus Wall., in Roxb., *Fl. Ind.* **2**: 157 (1824); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 203 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 275 (2000).'Gobre kath'

A small epiphytic shrub. Leaves crowded towards the end of the branches, short- petioled, elliptic-lanceolate, acute, pubescent on both surfaces, entire. Capsule cylindrical, on flat- topped clusters. **Fl.:** Jun. - Jul.

Voucher specimen: Gorkha, Nearby Namrung, 2670m, Oct. 5, 2012, R. Tamang, RT 230 (TUCH).

RUBIA L.

Rubia manjith Roxb. ex Fleming; *As. Research*. **11**: 177 (1810); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 207 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*: 278 (2000).'Manjitho'

A climbing herb. Leaves in whorl of 4, long- petioled, ovate, cordate, acuminate, basal nerves 3-7, prominent, hooked prickles on the nerves. Flowers small, brown, in cymes forming panicles. **Fl.:** Jun. - Nov.

Uses: A valuable dye, manjith is obtained from roots and stems.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, June 4, 2012, S. Sapkota, SS 64 (TUCH).

CAPRIFOLIACEAE

Key to the genera:

1a. Stems hollow; flowers in clusters……...……..… **Leycesteria**

1b. Stems not hollow; flowers in stalked pairs…….…..…… **Lonicera**

LEYCESTERIA Wall.

Leycesteria formosa Wall., *Fl. Ind*. (Roxburgh) ed. 2, **2**: 182 (1824); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 195 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 37 (2000).

A deciduous half- woody shrub. Leaves broadly lanceolate, opposite, acuminate, entire. Flowers drooping, purple- tinged, axillary, borne on the conspicuous purple leafy bracts. **Fl.:** May- Jul.

Voucher specimen: Gorkha, Gap, 2230m, May 30, 2012, S. Sapkota, SS 87 (TUCH).

LONICERA L.

Lonicera hispida (Royle) Rheder ex Airy- Shaw, *Bot. Mag*. **157:**t. 9360 (1934); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 195 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 38 (2000).

An erect shrub upto 2m high. Leaves lanceolate- oblong, dark green above, petiole very short. Flowers yellow, nodding, paired, borne on long pedicel, encircled by two large, ovate bracts. **Fl.:** May- Jul.

Voucher specimen: Gorkha, Shyalla, 3050m, June 9, 2012, S. Sapkota, SS 35 (TUCH).

SAMBUCACEAE

Key to the genera:

1a. Leaves odd- pinnate; stamens inserted at the base of corolla…….……..**Sambucus**

1b. Leaves simple; stamen inserted on corolla tube……..……**Viburnum**

SAMBUCUS L

Sambucus hookeri Rehder, in *Sarg., Pl. Wilson* 1: 308 (1913); Hara *et al.* in *Enu. Fl. Pl. Nep.* **2**: 197 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:284 (2000).'Kanike phool'

A shrub, about 2m high. Leaves odd- pinnate, leaflets 8, long, shortly- petioles, toothed, acuminate, oblong- lanceolate. Flowers white, in spreading, terminal corymbs.

Uses: For fodder.

Voucher specimen: Gorkha, Above Namrung, 2225m, June 12, 2012, S. Sapkota, SS 68 (TUCH).

VIBURNUM L.

Key to the species:

1a. A small tree; lower part of leaves with white markings……...……...*V. cylindricum*

1b. A shrub; leaves without white markings……...……..2

2a. Leaves apex acute; flowers in terminal corymbs……..*V. cotinifolium*

2b. Leaves apex acuminate; flowers in umbelliform.……....….3

3a. Venation prominent in both surface; drupe oblong- ellipsoid……..*V. mullaha*

3b. Venation prominent on lower surface; drupe ellipsoid……..……..….*V. nervosum*

Viburnum cotinifolium D. Don, *Prodr. Fl. Nepal.:* 141 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 198 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep.*:284 (2000).

A large deciduous shrub. Corymb- branches stellately tomentose. Leaves opposite, petioled, ovate-lanceolate, acute, crenate, softly pubescent above and grey, tomentose beneath. Corymbs terminal, dense. Flowers white. **Fl.:** Apr. - May

Voucher specimen: Gorkha, Above Namrung, 2225m, June 12, 2012, S. Sapkota, SS 120 (TUCH).

Viburnum cylindricum Buch.-Ham. ex D. Don, *Prodr. Fl. Nepal.*: 142 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 198 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*:284 (2000).'Ghode khari'

A shrub or small tree. Leaves entire, leathery, glossy hairless, oblong- lanceolate, acute, on the lower part white markings. Flowers, in stalked flat- topped clusters, numerous white. Fruit ovoid, succulent black. **Fl.:** Jul. - Sep.

Uses: For fuel wood.

Voucher specimen: Gorkha, Namrung, 2920m, June 3, 2012, S. Sapkota, SS 66 (TUCH).

Viburnum mullaha Buch.-Ham. ex D. Don, *Prodr. Fl. Nepal*.: 141 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 199 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 284 (2000).'Molo'

A large deciduous shrub. Leaves broadly ovate- lanceolate, crenulate-dentate, acuminate, opposite, petioled . Flowers in umbeliiform corymbs. Drupe oblong-ellipsoid, bright- red. **Fl**: Jul.-Sep.

Fr: Sep.-Oct.

Uses: For fuel wood, fooder, ripe fruits eaten.

Voucher specimen: Gorkha, Namrung, 2920m, June 3, 2012, S. Sapkota, SS 70 (TUCH).

Viburnum nervosum D. Don, *Prodr. Fl. Nep*.: 141(1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 199 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 284 (2000).

A deciduous shrub. Leaves ovate- lanceolate, serrulate, venation prominent on lower surface, acuminate, petioled. Flowers in compact compound umbels, white. Drupe ellipsoid. **Fl**: Apr.-Jul. **Fr**: Jul.-Sep.

Voucher specimen: Gorkha, Namrung, 2920m, June 3, 2012, S. Sapkota, SS 115 (TUCH.

VALERIANACEAE

VALERIANA L.

Valeriana hardwickii Wall. in Roxb., *Fl. Ind*. **1**: 166 (1826); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 209 (1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 323 (2000).'Nakali Jatamansi'

An erect herb up to 1m. Leaves pinnate, 3-7 leaflets, lanceolate, acute, petioled. Flowers white in axillary, stalked compound corymbs forming a long terminal panicles. **Fl:** Jun.-Jul. **Fr:** Aug.-Sep.

Voucher specimen: Gorkha, Namrung, Kharka, 3365m, Oct. 4, 2012, R. Tamang, RT 181 (TUCH).

DIPSACACEAE

Key to the genera:

1a. Flowers in whorls, forming a spike……..……**Morina**

1b. Flowers not whorled, in dense heads surrounded by involucral bracts……**Dipsacus**

DIPSACUS L.

Dipsacus inermis Wall.in Roxb., *Fl. Ind*. **1**: 367 (1820); Hara *et al. in Enu.Fl.Pl.Nep*. **2**: 210 (1979); Press *et al. in Ann. Check. Fl.Pl. Nep.:* 99 (2000).'Ban Karyal'

An erect, robust herb. Leaves opposite, pinnatifid, hairy on both surfaces, ovate- lanceolate, acuminate, coarsely toothed, terminal lobe largest. Flowers white, numerous, crowded in long-stalked, terminal heads; bracts linear- lanceolate, leaf- like, hairy. **Fl.:** Jun. - Sep.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, Oct. 6, 2012, R. Tamang, RT 191 (TUCH).

MORINA L.

Morina nepalensis D. Don, *Prodr. Fl. Nep.:* 161(1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **2**: 210(1979); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 99(2000).

A herb with woody tap root. Leaves linear- lanceolate, with a distinct mid- rib, glabrous, margin always spiny, acuminate, sessile, with pale sheathing base. **Fl**: May-Jul. **Fr**: Jul.-Aug.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, June 3, 2012, S. Sapkota, SS 91 (TUCH).

CUCURBITACEAE

Key to the genera:

1a. Tendrils simple; fruit ovoid……...……..**Coccinia**

1b. Tendrils bifid; fruit fibrous……...……..… **Herpetospermum**

COCCINIA Wight & Arn.

Coccinia grandis (L.)Voight, *Hort. Suburb. Calcutt*: 59 (1845); Hara *et al. in Enu.Fl.Pl.Nep.* **2**: 177 (1979); Press *et al. in Ann. Check. Fl.Pl. Nep.:* 84(2000).'Gol kakri'

A climber. Stem slender, slightly woody, many branched, angular, glabrous. Tendrils filiform, glabrous, simple. Leaf blade broadly cordate, usually 5-angled or 5-lobed, base with several glands, apex obtuse. **Fl.:** Jun.

Uses: Juice of the stem is dripped into the eyes to treat cataract.

Voucher specimen: Gorkha, Namrung, 2430m, Oct. 6, 2012, R.Tamang, RT 221 (TUCH).

HERPETOSPERMUM Wall.

Herpetospermum pedunculosum (Ser.) Bail., *Hist. Pl.* **8:** 445 (1886); Hara *et al. in Enu.Fl.Pl.Nep.* **2**: 179 (1979); Press *et al. in Ann. Check. Fl.Pl. Nep.:* 85 (2000).

A large climber with branched tendrils. Leaves ovate, deeply heart- shaped, stalked, with marginal tooth- like projections, acuminate, rough and bristly haired. Fruit, ellipsoid, finely hairy **Fl.:** Jul. - Oct.

Voucher specimen: Gorkha, Lho, 3200, June 5, 2012, S. Sapkota, SS 136 (TUCH).

CAMPANULACEAE

Key to the genera:

1a. Capsule splitting by lateral pores……..…….**Campanula**

1b. Capsule splitting by terminal pores……...…….…….2

2a. Capsule splitting into 3 valves……..…….**Codonopsis**

2b. Capsule spiltting into 4-5 valves……..…….**Cyananthus**

CAMPANULA L.

Campanula nakaoi Kitam., *Acta Phyt. Geobot.* 15: 108 (1954); Hara *et al*. in *Enu. Fl. Pl. Nep.* **3**: 50 (1979); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 33 (2000).

A slender leafy herb. Leaves alternate, simple, without stipules, ovate, apex acute, margin derrated, base cuneate. Flowers large, axillary, funnel- shaped, showy, blue in colour.

Voucher specimen: Gorkha, Shyalla, 3050m, Oct. 7, 2012, R. Tamang, RT 218 (TUCH).

CODONOPSIS Wall.

Codonopsis dicentrifolia (C. B. Clarke) W. W. Sm.; *Rec. B. Surv. Ind.* 4: 388 (1913); Hara *et al*. in *Enu. Fl. Pl. Nep.* **3**: 51 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 34(2000).

A hairless herb with slender branched stem. Leaves broadly elliptic, acuminate, short- stalked, entire. Flowers, funnel- shaped, milky blue, solitary. Capsule elliptic, nodding. **Fl.:** Jul. - Sep.

Voucher specimen: Gorkha, Namrung, 2920m, Oct. 5, 2012, R. Tamang, RT 171 (TUCH).

CYANANTHUS Wall ex Benth.

Cyananthus lobatus Wall. ex Benth., *III. Bot. Himal. Mts.***2**: t. 69.f. 1 (1833-1840); Hara *et al*. in *Enu. Fl. Pl. Nep.* **3**: 52 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 35 (2000).'Nirbisi'

A low spreading herb. Stems trailing. Leaves deeply lobed, alternate, elliptic, acute, entire. Flowers bright blue- purple in colour, large, funnel-shaped.

Voucher specimen: Gorkha, Above Samagaun, 3690m, Oct. 7, 2012, R. Tamang, RT 244 (TUCH).

ASTERACEAE

Key to the genera:

1a. Pappus absent…… 2

1b. Pappus present…… 4

2a. Achenes not beaked…… **Tanacetum**

2b. Achenes beaked…… 3

3a. Anther cells tailed below…… **Carpesium**

3b. Anther cells 2- lobed below…… **Rhynchospermum**

4a. Receptacle paleaceous……**Bidens**

4b. Receptacle not paleaceous……5

5a. Presence of both ray and disk florets……10

5b.Presence of only one floret……6

6a. Presence of disk florets……7

6b. Presence of ray florets……9

7a. Pappus of hairs……**Anaphalis**

7b. Pappus of bristles……8

8a. Pappus of rigid bristles……**Saussurea**

8b. Pappus feathery……**Ainsliaea**

9a. Fruit with a pale slender beak……**Lactuca**

9b. Fruit without beak……**Cremanthodium**

10a. Pappus of simple type……11

10a. Pappus of complex type……14

11a. Florets yellow……12

11a. Florets not yellow……13

12a. Fruit ribbed……**Solidago**

12b. Fruit angled……**Inula**

13a. Pappus in two rows……..…… **Prenanthes**

13b. Pappus not in rows……...…….**Gerbera**

14a. Pappus in rows……...……..15

14b. Pappus not in rows…….……...18

15a. Pappus in one row……...…….**Erigeron**

15b. Pappus in more than one row…….…….16

16a. Pappus in two rows……..…...…**Ligularia**

16b. Pappus in many rows……..……..…17

17a. Pappus of feathery hairs……..…….**Cirsium**

17b. Pappus of scabrid bristles…….**Tricholepis**

18a. Pappus of bristles……..…...…19

18b. Pappus of rough hairs ……...…. **Senecio**

19a. Involucre with two distinct series of phyllaries……. **Taraxacum**

19b. Involucre with many series of phyllaries…….……. 20

20a. Capitula with 7- 70 florets……... **Dubyaea**

20b. Capitula with 5- 20 florets……..…...…**Launaea**

AINSLIAEA DC.

Key to the species:

1a. Leaves heart- shaped; petiole not winged…….…..*A. aptera*

1b. Leaves ovate; petiole broadly winged……. *A. latifolia*

Ainsliaea aptera DC., *Prodr*.**7(1):** 14 (1838); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 9 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 49 (2000).

An erect herb. Leaves rounded, heart- shaped, acute, toothed, long- petioled, hairless. Flowers, numerous, cylindrical, with lanceolate bracts. **Fl.:** Mar. - Jun.

Voucher specimen: Gorkha, Namrung, Kharka, 3365m, Oct. 4, 2012, R. Tamang, RT 165 (TUCH).

Ainsliaea latifolia (D.Don) Sch. Bip., *Jahresber. Pollichia* **18-19:** 169 (1861); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 9 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 49(2000).'Sahadeva-sahadevee'

An erect, hairy herb. Leaves, ovate, petioles broadly winged. Flowering spikes in stalk and branched lateral clusters of flower- heads. **Fl.:** Mar. - Jun.

Voucher specimen: Gorkha, Gap, 2230m, May 31, 2012, S. Sapkota, SS 21(TUCH).

ANAPHALIS DC.

Key to the species:

1a. Leaves tip without any point; flowers in dense domed clusters…… *A. margaritacea*

1b. Leaves tipped with black point; flowers in terminal clusters……..*A. triplinervis*

Anaphalis margaritacea (L.) Benth., *Gen. Pl*. **2**: 303 (1873); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 10 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep.*: 50 (2000).'Bukiphool'

Gnaphalium margaritaceum L., *Sp. Pl.*: 850 (1735).

An erect herb about 20-40cm. Stems grayish tomentose. Leaves narrowly lanceolate, acuminate, sessile, thinly tomentose. Flowers white, in terminal, dense domed clusters. **Fl**: Jul.-Sep. **Fr**: Sep.-Dec.

Voucher specimen: Gorkha, Namrung, 2710m, Oct. 6, 2012, R. Tamang, RT 183 (TUCH).

Anaphalis triplinervis (Sims) C. B. Clarke, *Comp. Ind*: 105 (1876); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 11(1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 50 (2000).'Buki phool'

An erect, robust plant. Leaves obovate, acute, clasping the stem, 3-5 nerved, tipped with a black

point, cobwebby above, white wooly beneath. Flowers white, in terminal corymbs. **Fl.:** Jul. - Oct.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3740m, Oct. 4, 2012, R. Tamang, RT 144 (TUCH).

BIDENS (Tourn.) L.

Bidens bipinnata L., *Sp. Pl. ed*. **1**: 832 (1735).'Kuro'

B. pilosa L. var. *bipinnata* Hook.f., *Fl. Brit. Ind*. **3:** 309 (1881).

A herb with square grooved stem. Leaves bipinnate, glabrous; leaflets also petiolate with distinct nerves. Flowers on long, stout, variable peduncles. **Fl.:** almost all year

Voucher specimen: Gorkha, Lho, 2340m, Oct. 2, 2012, R. Tamang, RT 145 (TUCH).

CARPESIUM L.

Carpesium nepalense Less., *Linnaea* 234 (1831); Hara *et al. in Enu.Fl.Pl.Nep.* **3**: 18(1982); Press *et al. in Ann. Check. Fl.Pl. Nep.:* 54(2000).'Padke ghans'

A hairy herb, about 40 cm tall. Leaves petioled, ovate, acuminate, hairy. Flowers yellow, axillary with large leafy bracts subtended at the base.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, Oct.6, 2012, R. Tamang, RT 184 (TUCH).

CIRSIUM Mill.

Cirsium verutum (D. Don) Spreng., *Syst. Veg*. **3:** 370 (1826); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 20 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 55 (2000).'Sungure kanda'

An erect thistle herb. Lower leaves petioled, pinnatifid, upper leaves shorter, sessile, nearly glabrous on both surfaces margins beset with long, rigid spines. Flowers, shortly peduncled, crowded in terminal or axillary clusters. **Fl.:** Mar. - May.

Fr.: July- Sep.

Uses: Root piece is chewed to treat abdominal pain, and water brash, and chest pain.

Voucher specimen: Gorkha, Namrung, Kharka, 3365m, Oct. 4, 2012, R. Tamang, RT 166 (TUCH).

CREMANTHODIUM Benth.

Key to the species:

1a. Leaves sessile, oblong- elliptic…….. *C. arnicoides*

1b. Leaves long- petioled, heart- shaped…….*C. reniforme*

Cremanthodium arnicoides (DC. ex. Royle) R. Good, *J. Linn. S.B.* **48:** 288 (1929); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 22 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 56 (2000).

A glabrous, erect herb. Leaves oblong to elliptic, large, blunt, clasping the stem. Flower heads nodding, in a spike- like terminal clusters. **Fl.:** Jul. - Sep.

Voucher specimen: Gorkha, Above Samagaun, 3690m, Oct. 7, 2012, R. Tamang, RT 241 (TUCH).

Cremanthodium reniforme (DC.) Benth., *Icon. Pl.***12**: 37, t. 1141 (1873); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 23 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 57 (2000).

Ligularia reniformis DC., *Prodr*. **6**: 315 (1838).

A glabrous herb upto 45cm high. Leaves long- petioled, reniforme or heart- shaped, sinuate- toothed, base deeply cordate. **Fl**: Jun.-Jul. **Fr**: Aug.-Sep.

Voucher specimen: Gorkha, Samagaun, 4000m, Oct. 9, 2012, R. Tamang, RT 262 (TUCH).

DUBYAEA DC.

Dubaeya hispida DC., *Prodr*. **7(1):** 247 (1838); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 25 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 58 (2000).

A herb, with milky sap. Lower leaves, petioled, upper leaves oblong- ovate, petiole winged. Flowers, yellow, few, nodding, peduncles with black glandular hairs. **Fl.:** Jul. - Sep.

Voucher specimen: Gorkha, Shyalla, 3390m, Oct. 7, 2012, R. Tamang, RT 242 (TUCH).

ERIGERON L.

Erigeron bellidioides (Buch.- Ham. ex D. Don) Benth ex C. B. Clarke, *Comp. Ind.*: 55 (1876); Hara *et al*. in *Enu. Fl. Pl. Nep.* **3**: 26 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 58 (2000).

A small, hairy herb. Lower leaves petioled, oblanceolate, acute, base cuneate, upper leaves sessile, linear- oblong. Flowers few, long- peduncled, white in colour. **Fl.:** Apr. - Oct.

Voucher specimen: Gorkha, Namrung, 2710m, Oct. 6, 2012, R. Tamang, RT 210 (TUCH).

GERBERA L.

Gerbera gossypina (Royle) Beauverd, *Bull. S. B. Geneve ser*.**2, 2**: 40 (1910); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 28 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 59 (2000).

An erect herb. Leaves entire, toothed to pinnately lobed near the base, with long petiole, white wooly beneath, acute. Flower- heads white tinged with pink, solitary, borne on cottony leafless stem. **Fl.**: Mar. - May

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, Oct. 5, 2012, R. Tamang, RT 185 (TUCH).

INULA L**.**

Inula cappa DC. *Prodr*.**5**:469 (1836); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 29 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 61 (2000).'Gaaitihare'

A shrub with branches densely silky villous. Leaves short petioled, oblong- lanceolate, acute, distantly toothed, narrowed at base, hirsute above, silky tomentose beneath. Petioles short, tomentose. **Fl.:** Jan. –Nov. **Fr.:** Jan. - Nov.

Voucher specimen: Gorkha, Samagaun, Birendra Tal, 3610m, May 30, 2012, S. Sapkota, SS 32 (TUCH).

LACTUCA L.

Lactuca bracteata Hook.f. & Thomson ex C.B. Clarke, *Comp. Ind*.: 270 (1876); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 32 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 61 (2000).

A bristly- haired herb. Leaves oblong- ovate, toothed, with a heart- shaped clasping base. Flowers bell- shaped, blue, subtended by rather conspicuous oblong- ovate bracts. **Fl.:** Aug. - Sep.

Voucher specimen: Gorkha, Lho, 2800m, Oct. 7, 2012, R. Tamang, RT 211 (TUCH).

LAUNAEA Cass.

Launaea secunda (C.B. Clarke) Hook.f., *Fl. Br. Ind.***3**: 416 (1881); Hara *et al.* in *Enu. Fl. Pl. Nep*. **3**: 33 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 62 (2000).

A sparsely hairy herb. Leaves ovate- lanceolate, acute, rounded base, entire. Flowers yellow, stalked, in clusters, arranged on only one side of the stem.

Voucher specimen: Gorkha, Namrung, Kharka, 3365m, Oct. 4, 2012, R. Tamang, RT 167 (TUCH).

LIGULARIA Cass.

Ligularia amplexicaulis DC., *Prodr.***6:** 314 (1982); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 34 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 63 (2000).

A tall, robust herb. Leaves orbicular- reniform, cordate, irregularly toothed, lower leaves long-petioled with interrupted wings, upper sessile with broad sheathing wings. Flowers yellow, in corymbose racemes. **Fl.:** Jul. - Sep.

Voucher specimen: Gorkha, Shyalla, 3050m, Oct. 7, 2012, R. Tamang, RT 212 (TUCH).

PRENANTHES L.

Key to the species:

1a. Leaves not dissected, with winged petioles……..*P.violaefolia*

1b. Leaves variously dissected, without winged petioles……...…..*P. brunoniana*

Prenanthes brunoniana Wall. ex DC., *Prodr.***7(1):** 195 (1838); Hara *et al.* in *Enu. Fl. Pl. Nep*. **3**: 36 (1982); Press *et al.* in *Ann. Check. Fl. Pl. Nep*.: 64 (2000).

An erect herb. Leaves, variously dissected, triangular heart- shaped, pinnately lobed, the lobes further toothed. Flowers blue, in terminal branched clusters. **Fl.:** Jul. - Oct.

Voucher specimen: Gorkha, Namrung, Kharka, 3365m, Oct.4, 2012, R. Tamang, RT 168 (TUCH).

Prenanthes violaefolia Decne., in *Jacquem., Voy*. **4** (Bot.): 100, t. 108 (1844); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 36 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 64 (2000).

An erect herb. Leaves not dissected, ovate, heart- shaped, with winged petioles, acuminate, toothed. Flowers bue, in terminal branched clusters.

Voucher specimen: Gorkha, Lho, 2800m, Oct. 7, 2012, R. Tamang, RT 213 (TUCH).

SAUSSUREA DC.

Saussurea fastuosa *(*Decne.) Sch. Bip., *Linnaea* **19:** 331 (1846); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 38 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 65 (2000).

A herb, upto 1m high. Leves alternate, sub- sessile, oblong- lanceolate, serrated, glabrous beneath. Flowers, white, solitary, on long peduncles.

Voucher specimen: Gorkha, Lho, 3220m, Oct. 7, 2012, R. Tamang, RT 243 (TUCH).

SENECIO L.

Key to the species:

1a. A shrub; leaves margin with hooked teeth……..…….……*S. cappa*

1b. Herbs; leaves margin without teeth……...…….……..2

2a. Leaves bases broad eared……..…….*S. diversifolius*

2b. Leaves bases cuneate……...……3

3a. A climber with zig- zag branches……*S. scandens*

3b. Herbs with simple branches…….……..…..4

4a. Leaves lyrate- pinnatified; petioles auricled…….*S. chrysanthemoides*

4b. Leaves ovate, heart- shaped; petioles simple…….....…….*S. wallichii*

Senecio cappa Buch. - Ham. ex D. Don, *Prodr. Fl. Nepal*: 179 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 41 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 67 (2000).'Marcha'

A shrub. Stem stout, somewhat woody. Leaves narrowly to broadly elliptic, petioled, hairy above, margin often with hooked teeth. Flowers yellow, in terminal branched clusters. **Fl.:** Sep. - Nov.

Uses: Flowers offered to gods and Mani.

Voucher specimen: Gorkha, Lho, 2340m, Oct.2, 2012, R. Tamang, RT 146 (TUCH).

Senecio chrysanthemoides DC., *Prodr*. **6**:365 (1838); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 48 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 71(2000).

An erect branched herb. Lower leaves lyrate- pinnatifid with an auricled petiole, upper leaves sessile, pinnatifid, white pubescent. Flowers, numerous, yellow, in terminal branched flat- topped clusters. **Fl.:** Mar. - Nov. **Fr.:** June- Nov.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3490m, Oct. 4, 2012, R. Tamang, RT 279 (TUCH).

Senecio diversifolius Wall. ex DC., *Prodr*. **6**: 366 (1838); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 42 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 67 (2000).

A glabrous herb about 60 cm high. Leaves lyrate- pinnatifid, deeply and irregularly lobed, toothed, bases broad eared. Flowers, yellow, in terminal branched flat- topped clusters. **Fl.:** Jul. - Oct.

Voucher specimen: Gorkha, Namrung, Talo Rupal, 3490m, Oct. 4, 20120, R. Tamang, RT 150 (TUCH).

Senecio scandens Buch. - Ham ex D. Don, *Prodr. Fl. Nepal*.: 178 (1825); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 42 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 67 (2000).'Paheli lahara'

A climber with zig- zag branches. Leaves, lanceolate, acuminate, coarsely- toothed, petioled, glabrous. Flowers, yellow, in lax terminal and lateral domed branched clusters. **Fl.:** Sep. - Dec.

Voucher specimen: Gorkha, Lho, 2340m, Oct. 2, 2012, R. Tamang, RT 147 (TUCH).

Senecio sp.

A prostrate herb. Leaves ovate- lanceolate, apex acute, margin entire, base cuneate, long petiole. Yellow flowers in head like.

Voucher specimen: Gorkha, Lho, 2800m, Oct. 7, 2012, R. Tamang, RT 273 (TUCH).

Senecio wallichii DC., *Prodr*. **6**: 364 (1838); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 43 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 68 (2000).

A woody herb up to 50cm with leafless flowering stem. Leaves ovate or heart- shaped, petiole long, wavy and toothed margin. Flowers yellow, in dense spike- like. **Fl**: Jun.-Aug. **Fr**: Aug.-Sep.

Voucher specimen: Gorkha, Namrung, Namla Gumba, 2760m, Oct. 6, 2012, R. Tamang, RT 187 (TUCH).

SOLIDAGO L.

Solidago virga- aurea L., *Sp. Pl.:* 880 (1753); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 43 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 68 (2000).

An erect, unbranched herb. Lower leaves stalked, toothed, upper stalkless, smaller, narrower, toothed. Flowers, yellow, crowded, in a terminal leafy spike- like cluster. **Fl.**: Jul. - Sep.

Voucher specimen: Gorkha, Lho, 2800m, Oct. 7, 2012, R. Tamang, RT 214 (TUCH).

RHYNCHOSPERMUM Reinw.

Rhynchospermum verticillatum Reinw., *Syll. Pl. Nov. Ratisbon*. **2:** 8 (1826); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 36 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 64 (2000).

A puberulous herb with slender branches. Leaves broad, alternate, shortly stalked, lanceolat, acuminate, distantly toothed, membranous. Flowers, axillary, shortly stalked, solitary. **Fl.:** Aug. - Oct. **Fr.:** Sep. - Oct.

Voucher specimen: Gorkha, Namrung, 2920m, Oct. 5, 2012, R. Tamang, RT 169 (TUCH).

TANACETUM L.

Tanacetum dolichophyllum (Kitam.) Kitam. ex Kitam. & Gould; Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 45 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 69 (2000).'Baayejari'

An erect herb. Leaves much dissected, usually grey- green, aromatic, oblong in outline, twice cut into linear- pointed segments, basal leaves long stalked. Flowers, yellow, in rounded terminal clusters. **Fl.:** Jul. - Sep.

Voucher specimen: Gorkha, Shyalla, 3050m, June 10, 2012, S. Sapkota, SS 134 (TUCH).

TARAXACUM Weber.

Taraxacum eriopodum DC., *Prodr*.**7(1):** 147 (1838); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 46 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 69 (2000).

A scapigerous herb. Leaves, irregularly pinnatifid, lobes triangular, acute, glabrous. Flowers, yellow, solitary, on a leafless stem.

Voucher specimen: Gorkha, Shyalla, 3050m, June 10, 2012, S. Sapkota, SS 34 (TUCH).

TRICHOLEPIS DC.

Tricholepis furcata DC., *Prodr*. **6**: 563 (1838); Hara *et al*. in *Enu. Fl. Pl. Nep*. **3**: 47 (1982); Press *et al*. in *Ann. Check. Fl. Pl. Nep*.: 70 (2000).

A tall, erect herb, with stem branched from base. Lower stem leaves shortly petiolate, leaf blade elliptic to lanceolate, yellowish gland-dotted, base cuneate, margin serrate, apex acuminate, upper stem leaves sessile. Flowers nodding, solitary, terminal. **Fl.:** Oct. **Fr.:** Oct.

Voucher specimen: Gorkha, Lho, 2800m, Oct. 7, 2012, R. Tamang, RT 216 (TUCH).

5. DISCUSSION

5.1 Floristic Composition

The floristic study of the Manaslu area has been made to enumerate and document the trees, shrubs, herbs and climbers following the Engler and Prantl system of classification (1887-1915), from the Nubri Valley (Jagat to Larke pass). Altogether, 81 families have been recorded, out of which 4 families belong to gymnosperms, 65 families belong to dicotyledons and 12 families belong to monocotyledons.

The total enumerated plant species (286 species) from the research plots comprises 3.14% of gymnosperms, 80.06% of dicotyledons and 16.78% of monocotyledons. Among the recorded dicotyledons, the largest families are Asteraceae (21 genera and 30 species), followed by Fabaceae (9 genera and 10 species), and Rosaceae (7 genera and 12 species). Similarly, in monocotyledons, Liliaceae is the largest family (11 genera and 15 species), followed by Orchidaceae (10 genera and 12 species).

An Enumeration of Flowering Plant of Nepal (Hara *et al.* 1978, 1979 and 1982) and Annotated Checklist of the Flowering Plants of Nepal (Press *et al.* 2000) enumerated the plants found in Nepal in which Asteraceae represents the largest family which is followed by Gramineae, Orchidaceae, Fabaceae, Rosaceae, Cyperaceae, Scrophulariaceae, Labiatae, Ranunculaceae, Umbelliferae. Most of the top ten families of present study lie within top ten largest families of Nepal according to Press *et al.* (2000).

Most of the species of *Senecio* of Nepal Himalaya are confirmed to the Eastern and Central region rather than the Western region (ICBLCC 2010). This statement is found to be true after completion of this research work. A total of six species of this genera are recorded, inspite of the limited study area, which takes the 1st position in terms of largest genera of collected species.

Chhetri (2011) reported 118 species of herbs, 26 species of shrubs and 17 species of trees from the Manaslu Conservation Area. Similarly, NTNC/ MCAP (2013) revealed 336 species of herbs, 111 species of shrubs and 74 species of trees from the MCA.

From the present study, 192 species of herbs, 65 species of shrubs and 29 species of trees are reported. So, the study area is dominated by herbaceous plants, and the number of trees found is very few in comparison to the NTNC floral list which gives a list of 74 species of trees. The less number of trees might be due to the limited exploration of the study area. The reason for enormous occurrence of herbaceous plants in the study area is because of the open environment, which usually supports the growth of the plants in comparison to the forested areas (Vetaas 1997).

5.2 Species within and outside the plots

Within the plots, a total of 286 species are enumerated taxonomically. Outside the plots, 120 species of flowering plants from Arughat (500 m) to Jagat (1400 m) along the trail and 31 species of flowering plants were listed from Jagat to Larke Pass (5500 m). These species could not be collected due to the difficulty in preservation.

5.3 New addition to the flora of Manaslu Conservation Area

Kitamura (1953), while exploring the Central Nepal, described 437 species of plants from Gorkha district (Arughat to Larke pass), which include 7 species of gymnosperms, 53 species of monocotyledons, and 377 species of dicotyledons. Chhetri (2011) recorded 161 species of plants from the Nubri Valley of Manaslu Conservation Area (Namrung to Samagaun), which includes 10 species of gymnosperms, 24 species of monocotyledons and 127 species of dicotyledons for studying species richness. Shrestha (2012) reported 10 species of gymnosperms, 17 species of monocotyledons, and 189 species of dicotyledons from Nubri Valley of Manaslu Conseration Area (Ghatte Khola to Samagaun). NTNC- MCAP (2013) has recorded 508 species of angiosperms from the Manaslu Conservation Area (Nubri Valley and Tsum Valley), among which 108 species are monocotyledons and 410 species are dicotyledons. Similarly, the area comprises of 13 species of gymnosperms, 37 species of pteridophytes, and 3 species of lichens in the *Five years management plan* of MCAP. Bhattarai (2013) reported 105 species of Pteridophytes belonging to 45 genera and 20 families from the Nubri valley of Manaslu Conservation Area.

Based on all these reports, this research work had confirmed 48 species as new addition from the plots of Gap to Samagaum, and from the listed species number 79 species are new addition to the result of Kitamura (1953) along the trail from Arughat to Jagat, 11 species are new addition to the flora of Manaslu Conservation Area along the trail from Jagat to Samagaun and 4 species are new addition along the trail from Samagaun to Larke Pass. Altogether 63 species are new addition to the flora of Manaslu Conservation Area as comparing with available references from this study.

5.4 Distribution of species along altitudinal gradient

Altitude, one of the major factors determining the climatic condition, affects directly the vegetation of an area. Majority of the species cannot adapt the major change in climatic conditions and become restricted to a limited elevation. The species richnesss pattern of flowering plants of Nepal Himalaya is found to be maximum between the range of 1500- 2500m (Grytness and Vetaas 2002). Similarly, for pteridophytes and medicinal plants, the maximum species richness was found at altitude of 2000m (Bhattarai 2004) and 1100m (Acharya 2009) respectively. Chhetri (2011) found maximum species richness for dicotyledons and monocotyledons from 3400- 3600m, and for the gymnosperms 3100m; whereas Sharma (2012) found maximum number of species at an altitude of 2200m and lowest number of species at 3800m in MCA.

In the present study, most of the species are recorded from the range of 2200m-2800m which is similar to the result given by Grytness and Vetaas (2002) and Sharma (2012). The maximum species richness at this range might be due to the suitable and favorable climatic conditions, rainfall, temperature and adapting capacity of most of the plant species in that range. At an altitude ranging from 3400- 4200m, only few species were present. It might be due to the very cold temperature, overgrazing and deforestation.

5.5 Threatened species

Threatened species are any species (including animals, plants, fungi etc.) which are vulnerable to endangerment in the near future. IUCN (1994) prioritized 60 plant species for conservation with categorizing species in different red list catogories (Shrestha and Joshi 1996) in Nepal. Seven species of flowering plants are found to be threatened in their natural habitat from the present study area, which covers 11.66% of the total threatened species in Nepal. It might be due to their over- exploitation and unsustainable use for domestic and commercial purpose. These seven threatened species are *Aconitum spicatum, Bergenia ciliata, Dioscorea deltoidea, Swertia chirayita, Larix himalaica, Podophyllum hexandrum* and *Fritillaria cirrhosa*. Tubers of *Dioscorea deltoidea* is threatened because of its high nutritive value. Other five species except *Larix himalaica* are exploited due to its medicinal value, whereas, *Larix himalaica* is deforested for the excessive consumption for fuel wood, fodder and construction purposes.

5.6 Comparison of results of Kitamura and NTNC

Kitamura (1953) revealed a total of 454 species of flowering plants from Arughat to Larke Pass but thorough study revealed only 437 species, of which 17 species become synonyms (Appendix II). Similarly, NTNC had also reported 595 species of flowering plants from MCA, but only 521 species could be listed, among which 74 species are either identified up to generic level which had been repeated or are unidentified.

5.7 Economically Important Plants

The database of medicinal and aromatic plants of Nepal include 1, 624 species of wild, domesticated and naturalized plants (cffn.ca/about-nepal/plant-of-nepal). Being in same physiographic conditions, the study from Parbat district reveals 28 plant species under 22 families and 27 genera of medicinal values (Malla and Chhetri 2012) and Khaptad National Park reveals 51 species for medicinal purposes, 11 species as vegetables, 6 species for ornamental purposes, 18 species for construction, furniture and 10 species for miscellaneous purposes (Kunwar and Dunwadee 2003). Similarly, ethnobotanical study from Kavrepalanchowk district reveals 68 species of plants belonging to 59 genera under 37 families useful in day- to- day life (Malla and Chhetri 2009).

Edwards (1996) estimated approximately 100 species of plants being exported from Nepal. Olsen (1998) reported 48 species of medicinal and aromatic plants traded from Gorkha district to elsewhere. Due to very little information about medicinal and aromatic plants from Gorkha district, for the study of trade, Olsen used the insufficient data given by Amatya and Amatya 1995 (Olsen 1996). Shrestha *et al.* (2011) explored 51 species of high values of medicinal and aromatic plants biodiversity of MCA region. Popular medicinal plants for domestic use and trade include *Nardostachys grandiflora, Swertia chirayita, Bergenia ciliata, Rheum australe* etc. Similarly, Shrestha (2012) documented 127 important species for fuel wood and fodder and 19 species of plants of medicinal values from MCA. Popular medicinal plants for domestic use and trade include *Rosa sericea, Juniperus squamata, Zanthoxylum armatum* etc. Bhattarai (2013) reported 14 species of economically important pteridophytes from Nubri valley, out of which, 5 species of pteridophytes are edible, 2 species have medicinal values, one species exported commercially, one species for ornamental purpose and 5 species of pteridophytes used for agriculture composting, animal fodder and litters. From the present research, popular medicinal plants for the domestic use and trade include *Fritillaria cirrhosa, Astilbe rivularis, Hydrocotyle himalaica, Tagetes patula, Cuscuta reflexa* etc. (Appendix VIII).

In the present study, a total of 165 species has been reported to be of economic values from MCA and adjoining areas. Among them, 81 species are used for medicinal purpose, 34 species for fuel wood, 22 species for fodder, 29 species are edible, 9 species are for religious purpose, 9 species for construction purpose, 10 for ornamental and 14 species are for miscellaneous uses (Appendix VII, VIII, IX). This result covers 10.16% in context of Nepal and reveals maximum number of economically important plants in comparison to previous studies. Among six traded species from Gorkha district as reported by Olsen, three species namely *Nardostachys grandiflora, Swertia chirayita, Neopicrorhiza scrophulariiflora* are the highly traded flowering plant species. Among these three also, *Nardostachys grandiflora* and *Swertia chirayita* have less price value whereas roots of *Neopicrorhiza scrophulariiflora* has significantly high value due to the high demand in India (Olsen 1996).

Conservation practices

Olsen (1996) reported *Dactylorhiza hatagirea* banned from collection and trade. During our field visits; we found *Fritillaria cirrhosa* banned for haphazard collection and trade. Only once a year, the collection of *Fritillaria* was allowed for local medicinal practices. The different parts used for medicinal purposes include roots, leaf, flowers, stem, bark and fruits. Out of 81 medicinal plants, roots of 40 species of flowering plants, bark of 25 species and leaf of 16 species of flowering plants are found to be used for medicinal purposes. Due to high value of roots for commercial purpose, the plants are being uprooted and dig out before maturity of the plants for eg. *Fritillaria cirrhosa*, which may cause decrease population and regeneration of such commercially threatened species in natural habitat.

This shows that maximum number of plants is being destroyed in their pristine habitat which could even cause their extinction. However, this is not a complete figure. The research work has been

conducted only in the Nubri Valley of MCA, another valley i.e. Tsum (Chum) valley is still under explored. Therefore, data from Tsum Valley is equally important for the conservation and documentation of the economically important plants as well as other natural resources before they become extinct.

Similarly, due to lack of public awareness, and low income status of the local communities, majority of the local communities of remote villages in northern part of MCA harvest the NTFPs, especially the medicinal plants, in unsustainable manner. Amatya and Amatya (1995), Olsen (1996) and Shrestha (2011) have also reported similar trend of harvesting MAPs in this region.

Domestication of high value NTFPs in the community forests and marginal lands is also less practiced in this region. Although MCAP and some local community based organizations have initiated mobilizing local communities for the cultivation of some commercially valuable species such as *Asparagus racemosus* (Kurilo), *Swertia chirayita* (Chiraito), etc., but the level of such practices is not adequate.

Similarly, it has been realized that a short-term and long-term training to local communities focusing on the use value of NTFPs, sustainable utilization, sustainable harvesting practices, cultivation of high value NTFPs, trade value and market channel would be quite effective for the conservation of high value tree species, and NTFPs in Manaslu region.

6 CONCLUSION AND RECOMMENDATIONS

It can be concluded that Manaslu Conservation Area is a homeland of different and diverse plant species with medicinal and economic values, providing a suitable environmental, climatic and favorable rainfall for germination and growth of flowering plants. Moreover, it provides a good settlement for the rare, threatened and endangered species.

Manaslu Conservation Area is the youngest Conservation Area where tourism sector is in developing phase. Most of the botanical work has been conducted in the Nubri Valley and another valley of MCA i.e. Tsum (Chum) Valley is under explored. The present study is also done only on Nubri Valley so; Tsum Valley must be extensively explored for the enumeration of medicinal, threatened and rare plants, the traditional knowledge and distribution of the plants within the altitudinal variations.

People settlement is found mainly on the southern part of MCA. From this area, the exportation of the economically important plants is being done through buffer zone to different parts which is unsustainable. These types of illegal works should be stopped for the conservation of the natural resources.

Most of the plants in the region are over- exploited for medicinal, fuel wood and construction purposes haphazardly due to less aware of sustainable use of local resources. So, public awareness related with this topic must be conducted in order to preserve and conserve the biodiversity for the future generations. Several species of medicinal plants are commercially threatened, so people should be motivated for the domestication of such commercially valuable and threatened species in the community forests and marginalized lands.

It has become an important matter of research for Nepal to understand these economically important plants and to utilize them in a sustainable and ethical manner and bring benefit to the currently poor people of Nepal and the medical need of the people around the world.

The present study has also highlighted the status of floral exploration in Nubri Valley of Manaslu Conservation Area of Central Nepal necessitating similar explorations and floristic studies in these areas. It is thought that this study would be beneficial to future floristic studies in the present study area as well as other adjoining areas.

As, a single effort can’t give a good result, local people must co-operate and work friendly with NTNC group for the protection and conservation of natural resources of Manaslu Conservation Area.

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APPENDICES

Appendix I: List of Flowering Plants collected for species richness pattern

S. N.	Family	Latin name	Local name	Habit	Locality	Altitude (m)	Altitudinal range	References
GYMNOSPERMS								
1	Cupressaceae	*Juniperus indica* Bertol.	Dhupi	Shrub	Rupal	3740	3700-4100	2, 3, 4, 5, 6
2	Cupressaceae	*Juniperus squamata* Buch. - Ham. ex D. Don	Dhupi	Shrub	Rupal	3740	3300-4400	1, 2, 3, 4, 5, 6
3	Ephedraceae	*Ephedra gerardiana* Wall. ex Stapf	Somlata, Bhutkesh	Shrub	Lho	2800	3700-5200	1, 2, 3, 4, 5, 6
4	Pinaceae	*Abies spectabilis* (D. Don) Mirb.	Talish patra	Tree	Above Samagaun	3690	2400-4400	1, 2, 3, 4, 5, 6
5	Pinaceae	*Larix himalaica* W. C. Cheng & L. K. Fu	Langtang Sallo	Tree	Lho	2805	2400-3600	2, 3, 4, 5, 6
6	Pinaceae	*Picea smithiana* (Wall.) Boiss	Jhule sallo	Tree	Gap	2230	2300-3600	1, 3, 4, 5, 6
7	Pinaceae	*Pinus wallichiana* A. B. Jacks	Gobre sallo	Tree	Namla Gumba	2720	1800-3300	2, 3, 4, 5, 6
8	Pinaceae	*Tsuga dumosa* (D. Don) Eichler	Thinge salla	Tree	Lho	3230	2100-3600	1, 2, 3, 4, 5, 6
9	Taxaceae	*Taxus wallichiana* Zucc.	Dhegre salla	Tree	Lho	2805	2300-3400	2, 3, 4, 6
DICOTYLEDONS								
1	Acanthaceae	*Strobilanthes alatus* (Nees) Nees		Herb	Kharka, Namrung	3365	2700-3500	1, 3. 4.
2	Acanthaceae	*Strobilanthes wallichii* Nees.		Herb	Kharka, Namrung	3365	2700-3500	6
3	Acanthaceae	*Ruellia* sp.		Herb	Lho	2805		3
4	Aceraceae	*Acer acuminatum* Wall. ex D. Don	Kanchiro	Tree	Kharka, Namrung	3365	2200-3200	1,2, 3, 4, 5, 6
5	Aceraceae	*Acer caesium* Wall. ex Brandis	Kanchiro	Tree	Kharka, Namrung	3365	2200-3000	3, 4, 5.
6	Aceraceae	*Acer pectinatum* Wall. ex Pax.	Thusi pangree	Tree	Namla Gumba	2770	2700-3800	1, 3, 4, 5.
7	Amaranthaceae	*Cyathula capitata* Moq.		Herb	Lho	2805	1300-2900	1, 2, 3, 4.
8	Anacardiaceae	*Rhus succedanea* L.	Rani bhalayo	Tree	Lho	2340	1300-2400	3, 4, 5, 6
9	Anacardiaceae	*Rhus wallichii* Hook. f.	Bhalayo	Shrub	Namla Gumba	2720	300-2800	3, 4, 5, 6.
10	Apiaceae	*Bupleurum hamiltonii* Balak.		Shrub	Lho	2805	1300-3200	3, 4.
11	Apiaceae	*Cortia depressa* (D. Don) C. Norman		Herb	Birendra tal	3610	3600-4900	3, 4, 6.
12	Apiaceae	*Sanicula elata* (Buch.-Ham.) ex D. Don		Herb	Namla Gumba	2770	1600-3500	1, 3, 4.
13	Apiaceae	*Selinum* sp.		Herb	Samagaun	3600		3
14	Aquifoliaceae	*Ilex dipyrena* Wall.	Seto khasru	Tree	Namrung	2440	2500-3000	3, 4, 5, 6
15	Araliaceae	Hedera nepalensis K. Koch	Kathe laharo	Climber	Kharka, Namrung	3495	2000-3200	1, 3, 4, 5, 6.
16	Araliaceae	*Panax pseudo- ginseng* Wall.		Herb	Lho	2805	2100-2500	1,3, 4, 6.
17	Araliaceae	*Trevesia palmata* (Roxb.) Vis.		Shrub	Lho	2805	250-2500	3, 4.
18	Asclepiadaceae	*Vincetoxicum hirundinaria* Medik.		Shrub	Shyalla	3055	2300-3600	3, 4, 6
19	Asteraceae	*Ainsliaea aptera* DC.		Herb	Kharka, Namrung	3365	1600-3500	3, 4, 6
20	Asteraceae	*Ainsliaea latifolia* (D.Don) Sch. Bip	Sahadeva-sahadevee	Herb	Gap	2230	1700-3500	1, 3, 4.

21	Asteraceae	*Anaphalis margaritacea* (L.) Benth.	Bhuki phool	Herb	Namrung	2720	1800-3100	1, 3, 4, 5.
22	Asteraceae	*Anaphalis triplinervis* (Sims) C. B. Clarke	Buki phool	Herb	Talo Rupal	3740	1800-3300	1, 2, 3, 4, 5, 6
23	Asteraceae	*Bidens bipinnata* L.	Kuro	Herb	Lho	2340	900-2300	3, 4.
24	Asteraceae	*Carpesium nepalense* Less	Padake ghans	Herb	Namla Gumba	2770	1900-3900	1, 3, 4.
25	Asteraceae	*Cirsium verutum* (D. Don) Spreng	Sungure kanda	Herb	Kharka, Namrung	3365	750-2200	1, 3, 4.
26	Asteraceae	*Cremanthodium arnicoides* DC. ex. Royle		Herb	Above Samagaun	3690	3100-4900	3, 4, 6
27	Asteraceae	*Cremanthodium reniforme* (DC.) Benth.		Herb	Samagaun	4000	3000-4600	2, 3, 4, 6
28	Asteraceae	*Dubaeya hispida* DC.		Herb	Shyalla	3390	2700-4300	3, 4.
29	Asteraceae	*Erigeron bellidioides (*Buch.- Ham. ex D. Don) Benth. ex C. B. Clarke		Herb	Namrung	2720	1400-4300	3, 4.
30	Asteraceae	*Gerbera gossypina* (Royle) Beauverd		Herb	Namla Gumba	2770	1400-2000	3, 4.
31	Asteraceae	*Inula cappa* (Buch.- Ham. ex D. Don) DC.	Gaaitihaare	Shrub	Birendra tal	3610	2600-3400	3, 4, 6
32	Asteraceae	*Lactuca bracteata* Hook.f. & Thomson ex C.B. Clarke		Herb	Lho	2805	2200-3600	3, 4.
33	Asteraceae	*Launaea secunda* (C.B. Clarke) Hook.f.		Herb	Kharka, Namrung	3365	1700-3400	1, 3, 4.
34	Asteraceae	*Ligularia amplexicaulis* DC.		Herb	Shyalla	3055	2900-3300	3, 6
35	Asteraceae	*Prenanthes brunoniana* Wall.		Herb	Kharka, Namrung	3365	2300-3800	1, 3, 4.
36	Asteraceae	*Prenanthes violaefolia* Decne.		Herb	Lho	2805	2200-4600	3
37	Asteraceae	*Rhynchospermum verticillatum* Reinw.		Herb	Namrung	2930	2000-2500	3, 4.
38	Asteraceae	*Saussurea fastuosa (*Decne.) Sch. Bip		Herb	Lho	3230	2900-3800	1, 3, 4, 6
39	Asteraceae	*Senecio cappa* Buch.- Ham ex D. Don	Marcha	Herb	Lho	2340	1300-2900	3, 4, 5, 6
40	Asteraceae	*Senecio chrysanthemoides* DC.		Herb	Tallo Rupal	3495	1400-4000	1, 3, 4.
41	Asteraceae	*Senecio diversifolius* Wall.		Herb	Tallo Rupal	3495	2300-4000	3, 4, 6
42	Asteraceae	*Senecio scandens* Buch.- Ham. ex D. Don	Paheli lahara	Climber	Lho	2340	2100-2800	1, 3, 4.
43	Asteraceae	*Senecio* sp.		Herb	Lho	2805		3
44	Asteraceae	*Senecio wallichi* DC.		Shrub	Namla Gumba	2770	2400-3300	3, 6
45	Asteraceae	*Solidago virga- aurea* L.		Herb	Lho	2805	2300-3400	3, 4.
46	Asteraceae	*Tanacetum dolichophyllum* (Kitam.) Kitam. ex Kitam. & Gould	Baayejari	Herb	Shyalla	3055	3000-4400	3, 4.
47	Asteraceae	*Taraxacum eriopodum* DC.		Herb	Shyalla	3055	3300-4600	3, 4.
48	Asteraceae	*Tricholepsis furcata* DC.			Lho	2805	1400-2800	3, 4.
49	Balsaminaceae	*Impatiens racemosa* DC.	Anchirna	Herb	Kharka, Namrung	3495	1300-3900	1, 3, 4.
50	Berberidaceae	*Berberis angulosa* Wall. ex Hook. f. & Thomson	Chutre kanda	Shrub	Talo Rupal	3495	3400-4500	1, 3, 4.
51	Berberidaceae	*Berberis erythroclada* Ahrendt.	Lekh chutro	Shrub	Talo Rupal	3495	3000-4000	2, 3, 4, 6
52	Berberidaceae	*Podophyllum hexandraum* Royle	Laghu patra	Herb	Mathilo Rupal	3600	3000-4500	2, 3, 6

53	Berberidaceae	*Alnus nepalensis* D. Don	Utis	Tree	Namrung	2440	500-2600	1, 3, 4, 5, 6
54	Betulaceae	*Betula alnoides* Buch.-Ham. ex D. Don	Lekh painu	Tree	Namrung	2930	1200-2600	1,3, 4, 5, 6
55	Betulaceae	*Betula utilis* D. Don	Bhoj patra	Tree	Shyalla	3690	2700-4300	2, 3, 4, 5, 6
56	Boraginaceae	*Cynoglossum zeylanicum* (Vahl ex Hornem.) Thunb. ex Lehm	Kanike kuro	Herb	Lho	2805	1200-4100	1, 3, 4, 6
57	Brassicaceae	*Rorippa nastracium-aquaticum (*L.) Hayek	Sim rayo	Herb	Namla Gumba	2770	1400-2100	3, 6
58	Buxaceae	*Sarcococca saligna* (D. Don) Mull. Arg	Phitphiya	Shrub	Gap	2230	1900-2300	1, 3, 4, 5.
59	Campanulaceae	*Campanula pallida* Wall.	Gaanobuti	Herb	Shyalla	3055	1000-4500	3, 4.
60	Campanulaceae	*Codonopsis dicentrifolia* (C.B. Clarke) W.W. Sm		Herb	Namrung	2930	3000-4000	1, 3, 4.
61	Campanulaceae	*Cyananthus lobatus* Wall. ex Benth.	Nirbisi	Herb	Above Samagaun	3690	3300-4700	2, 3, 4, 5, 6
62	Caprifoliaceae	*Leycesteria formosa* Wall.		Shrub	Gap	2230	2000-3200	1, 3, 4, 6
63	Caprifoliaceae	*Lonicera hispida* (Royle) Rheder ex Airy- Shaw		Shrub	Shyalla	3055	2900-4500	1, 3, 4.
64	Caryophyllaceae	*Sagina saginoides* (L.) H. Karst		Herb	Namla Gumba	2770	2000-3600	3
65	Caryophyllaceae	*Silene setisperma* Majumdar		Herb	Talo Rupal	3495	3400-4700	3
66	Caryophyllaceae	*Stellaria decumbens* Edew.		Herb	Namla Gumba	3500	3200-4000	1, 3, 4, 6
67	Clusiaceae	*Hypericum choisyanum* Wall. ex N. Robson		Shrub	Lho	2805	2400-3600	3,4.
68	Clusiaceae	*Hypericum elodeoides* Choisy	Jibre ghans	Shrub	Lho	2805	1200-3300	2, 3, 4.
69	Clusiaceae	*Hypericum hookeranum* Wight & Arn.	Doli phul	Shrub	Namrung	2930	1500-3000	3, 4, 5, 6
70	Clusiaceae	*Hypericum oblongifolium* Choisy		Shrub	Namla Gumba	2720	800-2100	3
71	Convolvulaceae	*Cuscuta reflexa* Roxb.	Aakasbeli	Parasite	Birendra Tal	3610	1100-3100	3, 4.
72	Coriariaceae	*Coriaria napalensis* Wall.	Macchaino	Shrub	Nearby Namrung	2670	1200-2400	1, 3, 4, 5, 6
73	Cornaceae	*Benthamidia capitata* (Wall.) H. Hara	Dimar	Tree	Gap	2230	2100-3400	1,3, 4, 5, 6
74	Crassulaceae	*Sedum filipes* Hemsl.		Herb	Above Samagaun	3690	2400	3, 4.
75	Crassulaceae	*Sedum multicaule* Wall. ex Lindl.		Herb	Shyalla	3055	1500-3200	1, 3, 4, 6
76	Crassulaceae	*Sedum trullipetalum* Hook. & Thomson		Herb	Shyalla	3055	3600-4700	3, 4.
77	Cruciferae	*Arabidopsis himalaica* (Edgew.) O.E. Schulz.		Herb	Samagaun	4000	3000-3800	3, 4, 6
78	Cruciferae	*Capsella bursa-pastoris* (L.) Medik	Chamsure jhar	Herb	Lho	2805	1800-4500	3, 4, 6
79	Cruciferae	*Cardamine* sp.			Samagaun	3600		3
80	Cruciferae	*Erysimum hierarciifolium* L.	Ban Chansur	Herb	Lho	2340	1600-3800	1, 3, 4.
81	Cucurbitaceae	*Coccinia grandis* (L.) Voig		Herbaceous climber	Namrung	2440	200-900	3, 4, 6
82	Cucurbitaceae	*Herpetospermum pedunculosum* (Ser.) Bail		Climber	Lho	2340	1500-3600	3, 4, 6
83	Dipsacaceae	*Dipsacus inermis* Wall.		Shrub	Namla Gumba	2770	1500	3, 4, 6
84	Dipsacaceae	*Morina nepalensis* D. Don		Herb	Namla Gumba	2770	3000-4500	3, 4, 6
85	Ericaceae	*Cassiope fastigiata* (Wall.) D. Don		Shrub	Above Samagaun	3690	2800-5000	1, 2,, 3, 4, 6

86	Ericaceae	*Gaultheria trichophylla* Royle		Shrub	Samagaun	4000	2700-4500	1, 3, 4, 6
87	Ericaceae	*Lyonia ovalifolia* (Wall.) Drude	Angeri	Shrub	Lho	3390	1300-3300	1, 3, 4, 5, 6
88	Ericaceae	*Pieris formosa* (Wall.) Drude	Lek Angeri	Tree	Namla Gumba	2720	2000-3000	1, 3, 5, 6
89	Ericaceae	*Rhododendron anthopogon* D. Don	Sunapati	Shrub	Kharka, Namrung	3495	3300-5100	1,2, 3, 4, 5, 6
90	Ericaceae	*Rhododendron barbatum* Wall. ex G. Don	Rato Chimal	Tree	Lho	3390	2700-3600	1, 2, 3, 4, 5, 6
91	Ericaceae	*Rhododendron campanulatum* D. Don	Cheriala	Shrub	Talo Rupal	3805	2800-4400	1, 2, 3, 4, 5, 6
92	Ericaceae	*Rhododendron ciliatum* Hook.f.		Shrub	Talo Rupal	3805	3600-3900	3, 4.
93	Ericaceae	*Rhododendron lepidotum* Wall. ex G. Don	Bhale Sunapati	Shrub	Lho	3390	2100-4700	1, 2, 3, 4, 5, 6
94	Fabaceae	*Astragalus donianus* DC.		Herb	Birendra Tal	3610	2900-4500	3, 4.
95	Fabaceae	*Astragalus himalayanus* Klotzsch.		Herb	Birendra Tal	3610	3500-4500	3, 4.
96	Fabaceae	*Caragana gerardiana* Royle		Shrub	Lho	2805	3200-4200	1, 2, 3, 4, 6.
97	Fabaceae	*Desmodium elegans* DC.	Chamle	Shrub	Namla Gumba	2720	1200-3000	3, 4, 5, 6.
98	Fabaceae	*Hedysarum* sp.		Herb	Talo Rupal	3495	3300-4600	1, 3, 4.
99	Fabaceae	*Indigofera atropurpurea* (Buch.-Ham). ex Hornem	Sakhinu	Shrub	Namla Gumba	2720	700-3200	3, 4.
100	Fabaceae	*Parochetus communis* Buch.- Ham. ex D. Don	Jangli padame jhar	Herb	Nearby Namrung	2670	900-4000	1, 3, 4.
101	Fabaceae	*Piptanthus nepalensis* (Hook.) D. Don	Suga phool	Shrub	Kharka, Namrung	3495	200-3800	1, 3, 4, 5.
102	Fabaceae	*Thermopsis barbata* Royle		Herb	Above Samagaun	3690	150-200	1, 3, 4.
103	Fabaceae	*Trigonella emodi* Benth.		Herb	Shyalla	3055	1300-4900	1, 3, 4.
104	Fagaceae	*Quercus semecarpifolia* Sm.	Kashru	Tree	Namla Gumba	2720	1700-3800	1, 3, 4, 5, 6
105	Gentianaceae	*Gentiana capitata* (Buch.- Ham. ex D. Don)		Herb	Shyalla	3055	1500-4500	1, 3, 4.
106	Gentianaceae	*Gentiana depressa* D. Don		Herb	Kharka, Namrung	3495	2900-4300	1, 2, 3, 4.
107	Gentianaceae	*Gentianella moorcroftiana* Wall. ex G. Don		Herb	Above Samagaun	3690	2900-5200	3, 4.
108	Gentianaceae	*Halenia elliptica* D. Don	Tikta	Herb	Namla Gumba	2770	2000-4500	1, 3, 4.
109	Gentianaceae	*Swertia angustifolia* Buch.- Ham ex D. Don	Ciraito	Herb	Namla Gumba	2720	600-2600	1, 2, 3, 4.
110	Gentianaceae	*Swertia chirayita* (Roxb. ex Fleming) H. Karst	Tida	Herb	Above Samagaun	3690	1500-2500	3, 4.
111	Gentianaceae	*Swertia petiolata* D. Don		Herb	Above Samagaun	3690	5600	3, 4.
112	Geraniaceae	*Geranium donianum* Sweet		Herb	Above Samagaun	3690	3200-4800	1, 3, 4.
113	Geraniaceae	*Geranium nakaonum* H. Hara		Herb	Samagaun	4000	3500-4500	3, 4.
114	Geraniaceae	*Geranium nepalense* Sweet		Herb	Lho	2805	1500-4000	1, 2, 3, 4
115	Geraniaceae	*Geranium wallichianum* D. Don ex Sweet	Rakalamul	Herb	Kharka, Namrung	3365	2100-4200	1, 3, 4, 5.
116	Gesneriaceae	*Didymocarpus aromaticus* Wall. ex D. Don		Herb	Namla Gumba	2770	1600-3000	3, 4.

117	Grossulariaceae	*Ribes takare* D. Don	Tanphu	Shrub	Namla Gumba	2770	2200-3300	3
118	Hydrangeaceae	*Deutzia compacta* Craib		Shrub	Nearby Namrung	2670	2100-3400	3, 4, 5.
119	Hydrangeaceae	*Deutzia staminea* R. Br. ex Wall.		Shrub	Nearby Namrung	2670	1700-3200	1, 3, 4.
120	Hydrangeaceae	*Hydrangea heteromalla* D. Don	Phusure kaath	Shrub	Nearby Namrung	2670	2400-3300	1, 3, 4, 5.
121	Juglandaceae	*Juglans regia* L.	Okhar	Tree	Namrung	2805	1200-2100	1, 3, 4.
122	Labiatae	*Clinopodium umbrosum* (M. Bieb.) K. Koch.	Bilajor	Herb	Lho	2805	180-3400	1, 3, 4.
123	Labiatae	*Colquhounia coccinea* Wall.	Phulpat	Shrub	Namla Gumba	2720	2000-2100	1,3, 4, 5, 6.
124	Labiatae	*Elscholtzia eriostachya* (Benth.) Benth.	Lenja	Herb	Namla Gumba	2720	3000-4800	1,3, 4, 6.
125	Labiatae	*Elscholtzia fruticosa* (D. Don) Rehder.	Chhinki	Shrub	Kharka, Namrung	2930	1800-4200	1, 3, 4, 5.
126	Labiatae	*Glechoma nivalis (*Benth.) Press	Dhyarin	Shrub	Namla Gumba	2770	4300-5500	3
127	Labiatae	*Prunella vulgaris* L.		Herb	Talo Rupal	3740	1200-3800	1, 3, 4, 6.
128	Labiatae	*Scutellaria prostrata* Jacq. ex Benth.		Herb	Talo Rupal	3740	2400-4500	3
129	Lauraceae	*Cinnamomum camphora* (L.) J. Presl.	Kapoor	Tree	Above Namrung	2225	1300-1500	3, 4.
130	Lauraceae	*Litsea doshia* (Buch.-Ham. ex D. Don) Kosterm		Tree	Shyalla	3055	1300-2700	3, 4, 6.
131	Lauraceae	*Litsea lancifolia* Roxb. ex Nees		Shrub	Namla Gumba	2720		3, 4.
132	Lauraceae	*Neolitsea cuipala* (Buch.-Ham. ex D. Don) Kosterm	Shinkouli	Tree	Jagat to Hosdoban	1400	1200-1400	1
133	Loranthaceae	*Scurrula elata* (Edgew.) Danserl	Ainjeru	Epiphytic shrub	Namla Gumba	2720	1600-2700	3, 4, 5.
134	Malvaceae	*Malva verticillata* L.		Herb	Namla Gumba	2770	2100-3000	3, 4, 6.
135	Meliaceae	*Trichillia connaroides* (Wight & Arn.) Bentv	Ankha taruwa	Tree	Lho	3230	700-2400	1, 3, 4.
136	Oleaceae	*Jasminum humile* L.	Masino Jai	Shrub	Namla Gumba	2720	1500-3000	1, 3, 4, 5.
137	Onagraceae	*Circaea alpina* L.		Herb	Lho	3230	3300-4100	3
138	Onagraceae	*Epilobium hirsutum* L.		Herb	Kharka, Namrung	2930	900-2100	3
139	Onagraceae	*Epilobium wallichianum* Hausskn.		Herb	Gap	2230	1700-3000	3
140	Orobanchaceae	*Boschniakia himalaica* Hook & Thomson ex Hook. f.		Parasitic herb	Mathilo Rupal	3805	2900-4300	3, 4, 6.
141	Orobanchaceae	*Orobanche aegyptiaca* Pers.		Parasitic herb	Gap	2230	150-3100	3, 4.
142	Orobanchaceae	*Orobanche cernua* Loefl.		Parasitic herb	Shyalla	3055	2400-2900	3, 4.
143	Papaveraceae	*Corydalis cashemeriana* Royle		Herb	Talo Rupal	3495	2800-5500	1, 3, 4.
144	Papaveraceae	*Dicentra scandens* (D. Don) Walp.	Jogi lahara	Herbaceous climber	Talo Rupal	3740	2200-3000	1, 3, 4.
145	Papaveraceae	*Meconopsis dhwojii* G. Taylor ex. Hay		Herb	Rupal	3740	3500-5600	3, 4.
146	Papaveraceae	*Meconopsis horridula* Hook. f. & Thomson		Herb	Above Samagaun	3690	3000-5800	1, 3, 4.
147	Parnassiaceae	*Parnassia nubicola* Wall. ex Royle		Herb	Shyalla	3055	2900-4200	2, 3, 4, 6.
148	Phytoloccaceae	*Phytolacca acinosa* Roxb.		Herb	Namla Gumba	2720	2200-3200	3, 4.
149	Piperaceae	*Peperomia tetraphylla* (G. Forst) Hook. & Arn.		Herb	Above Namrung	2225	1000-2500	3, 4, 5.

150	Plantaginaceae	*Plantago himalaica* Pilg.		Herb	Tallo Rupal	3495	2900	3
151	Polygonaceae	*Aconogonum molle* (D.Don) H. Hara	Thotne	Herb	Mathilo Rupal	4005	120-2400	2, 3, 4, 5, 6.
152	Polygonaceae	*Bistorta affinis* (D. Don) Greene		Herb	Mathilo Rupal	4005	3500-4800	2, 3, 4, 6.
153	Polygonaceae	*Bistota amplexicaulis* (D. Don) Greene		Herb	Samagaun	4000	2100-4800	2, 3, 4, 5, 6.
154	Polygonaceae	*Bistorta vaccinifolia* (Wall. ex Meisn) Greene		Herb	Talo Rupal	3495	3000-4500	3, 4.
155	Polygonaceae	*Persicaria capitata* (Buch.- Ham. ex. D. Don). H. Gross	Raktanyaule jhar	Herb	Namrung	3365	600-2400	1, 3, 4.
156	Polygonaceae	*Rumex nepalensis* Spreng.	Hali	Herb	Namla Gumba	2770	1200-4200	1, 2, 3, 4, 6.
157	Primulaceae	*Androsace lanuginosa* Wall. ex Hook.f.		Herb	Birendra Tal	3610	1800-2800	3, 4.
158	Primulaceae	*Androsace sarmentosa* Wall.		Herb	Lho	3390	2500-4000	1, 2, 3, 4, 6.
159	Primulaceae	*Androsace strigillosa* Franch		Herb	Above Samagaun	3690	2400-4700	1, 2, 3, 4,6
160	Primulaceae	*Androsace* sp.		Herb	Lho	3000		4
161	Primulaceae	*Primulla sikkimensis* Hook.f	Medosero	Herb	Talo Rupal	3740	2900-4800	1, 3, 4.
162	Ranunculaceae	*Aconitum spicatum* (Bruhl) Stapf	Vikh	Herb	Samagaun	4000	1800-4200	2, 3, 4, 6.
163	Ranunculaceae	*Anemone rivularis* Buch.- Ham. ex DC.	Patidhuk	Herb	Talo Rupal	3495	1600-4000	1, 3, 4, 6
164	Ranunculaceae	*Anemone vitifolia* Buch.- Ham. ex DC.	Mauri Mulo	Herb	Talo Rupal	3740	1300-3300	1, 3, 4, 5, 6
165	Ranunculaceae	*Clematis acuminata* DC.		Climber	Gap	2230	900-2000	3, 4, 6
166	Ranunculaceae	*Clematis connata* DC.		Climber	Namla Gumba	2770	2400-3300	1, 3, 4.
167	Ranunculaceae	*Clematis montana* Buch.- Ham. ex DC.	Junge lahara	Climber	Gap	2230	1600-4000	1, 2, 3, 4, 6
168	Ranunculaceae	*Delphinium kamaonense* Huth.		Herb	Lho	2805	3000-4500	3, 4.
169	Ranunculaceae	*Ranunculus diffusus* DC.	Brimomendo	Herb	Lho	2805	1600-2000	1,2, 3, 4.
170	Ranunculaceae	*Thalictrum foliolosum* DC.	Dampate	Herb	Shyalla	3055	1300-3400	1, 2, 3, 4, 6
171	Ranunculaceae	*Thalictrum reniforme* Wall.		Herb	Namla Gumba	2770	2800-3300	3, 4, 6
172	Rosaceae	*Cotoneaster acuminatus* Lindl.	Dhalke Phul	Shrub	Kharka, Namrung	2930	2500-3700	3, 4, 5.
173	Rosaceae	*Cotoneaster affinis* Lindl.		Tree	Namla Gumba	2720	2200-2800	1, 3, 4.
174	Rosaceae	*Cotoneaster microphyllus* Wall. ex Lindley	Pribi	Shrub	Namla Gumba	2720	2000-5400	2, 5, 6
175	Rosaceae	*Potentilla fruticosa* Lindl.ex Lehm.	Ciniya phal	Shrub	Namla Gumba	2720	2700-4300	1, 2, 3, 4, 6
176	Rosaceae	*Potentilla fulgens* Wall.	Bajradanti	Shrub	Samagaun	4000		1, 3, 4, 6
177	Rosaceae	*Potentilla microphylla* D. Don		Herb	Namla Gumba	2720	3800-5100	1, 3, 4.
178	Rosaceae	*Prinsepia utilis* Royle	Dhatelo	Shrub	Namrung	2720	1500-2900	1, 3, 4, 5, 6
179	Rosaceae	*Rosa sericea* Lindl.	Darimpate	Shrub	Shyalla	3055	2200-4600	1,2, 3, 4, 6
180	Rosaceae	*Rosa webbiana* Wall. ex Royle		Shrub	Birendra Tal	3610	2300	1, 2, 3, 4, 5, 6
181	Rosaceae	*Rubus paniculatus* Sm.	Kalo Aainselu	Climber	Shyalla	3055	1600-2600	1, 3, 5.
182	Rosaceae	*Sorbus cuspidata* (Spach) Hedl.	Lekh Mayal	Tree	Kharka, Namrung	2930	2700-3700	3, 4, 5, 6
183	Rosaceae	*Sorbus microphylla* Wenz.		Herb	Talo Rupal	3805	3000-4500	3, 6
184	Rosaceae	*Spiraea bella* Sims.	Seto khareto	Shrub	Shyalla	3055	1900-4200	1, 3, 4, 6

185	Rubiaceae	*Galium hirtiflorum* Req. ex DC.	Lute jhar	Herb	Namla Gumba	2770	2500	1, 3, 4.
186	Rubiaceae	*Galium verum* L.		Herb	Lho	2340		3
187	Rubiaceae	*Hymenopogon parasiticus* Wall.	Gobre kath	Tree	Nearby Namrung	2670	1600-2800	1, 3, 6
188	Rubiaceae	*Rubia manjith* Roxb. ex Fleming	Manjitho	Herbaceous climber	Namla Gumba	2770	1200-2100	2, 3, 4, 5, 6
189	Rutaceae	*Boeninghausenia albiflora* (Hook.) Rchb. ex Meisn	Karna	Herb	Kharka, Namrung	3365	600-3300	1, 3, 4, 6
190	Rutaceae	*Zanthoxylum armatum* DC.	Parpare Timur	Tree	Kharka, Namrung	3365	1100-2500	1, 3, 4, 5, 6
191	Rutaceae	*Zanthoxylum acanthopodium* DC.	Boke Timur	Shrub	Lho	2800	1600-2800	1, 3, 4, 5.
192	Rutaceae	*Zanthoxylum oxyphyllum* Edgew.	Lahara Timur	Shrub	Shyalla	3300	2100-2800	1, 3, 4, 5, 6
193	Rutaceae	*Zanthoxylum nepalense* Babu	Timur	Shrub	Samagaun	3300	2700-3100	3, 6.
194	Salicaceae	*Populus ciliata* Wall. ex Royle	Bhote Pipal	Tree	Namrung	2930	2000-3200	3, 5, 6
195	Salicaceae	*Salix hylematica* C. K. Schneid.		Shrub	Namla Gumba	3055	2600-4500	3, 6
196	Salicaceae	*Salix sikkimensis* Anderson		Shrub	Namla Gumba	3055	3800-4400	2, 3.
197	Salicaceae	*Salix disperma* Roxb. ex D. Don		Shrub	Lho	3230		1, 3, 4, 5.
198	Sambucaceae	*Sambucus hookeri* Rehder		Shrub	Above Namrung	2225	1400-2400	3, 4.
199	Sambucaceae	*Viburnum cotinifolium* D. Don	Bakal pate	Shrub	Above Namrung	2225	2100-3600	1, 3, 4.
200	Sambucaceae	*Viburnum cylindricum* Buch.- Ham. ex D. Don	Gharghuri	Shrub	Namrung	2930	1200-2500	1, 3, 4, 5.
201	Sambucaceae	*Viburnum mullaha* Buch.- Ham. ex D. Don	Molo	Shrub	Namrung	2930	1800-2700	1, 3, 4, 5.
202	Sambucaceae	*Viburnum nervosum* D. Don	Asara	Shrub	Namrung	2930	2600-3500	3, 4, 6
203	Saxifragaceae	*Astilbe rivularis* Buch.-Ham. ex D. Don	Thulo ausadhi	Herb	Kharka, Namrung	2930	2000-3600	1, 2, 3, 4, 6
204	Saxifragaceae	*Bergenia ciliata* (Haw) Sternb	Paashanabed	Herb	Lho	2805	900-1700	3, 4, 6
205	Saxifragaceae	*Bergenia purpurascens* Hook.f. & Thomson		Herb	Samagaun	4000	3800-4700	3, 4, 6
206	Saxifragaceae	*Saxifraga brachypoda* D. Don		Herb	Kharka, Namrung	3365	3300-5000	3
207	Saxifragaceae	*Saxifraga parnassifolia* D. Don		Herb	Kharka, Namrung	3365	1900-4900	3, 4, 6
208	Schisandraceae	*Schisandra grandiflora* (Wall.) Hook.f. & Thomson		Climber	Nearby Namrung	2670	2100-3300	3, 4, 6
209	Scrophulariaceae	*Euphrasia himalayica* Wettst.		Herb	Samagaun	4000	3200-4200	3, 6.
210	Scrophulariaceae	*Hemiphragma heterophyllum* Wall.		Herb	Lho	2840	1800-3500	1, 3, 4, 6.
211	Scrophulariaceae	*Lancea tibetica* Hook. f. & Thomson		Herb	Gap	2230	3300-4400	1, 3, 4.
212	Scrophulariaceae	*Mazus japonicus* (Thunb.) O. Kuntze		Herb	Shyalla	3055		3
213	Scrophulariaceae	*Pedicularis bifida* Buch.- Ham. ex D. Don		Herb	Shyalla	3055	1000-3500	1, 3, 4.
214	Scrophulariaceae	*Pedicularis gracilis* Wall. ex Benth.		Herb	Shyalla	3055	2200-3800	3, 4.
215	Scrophulariaceae	*Pedicularis megalantha* D. Don		Herb	Above Samagaun	3690	2800-4300	1, 3, 4.
216	Scrophulariaceae	*Pedicularis siphonantha* D. Don	Ponki	Herb	Tallo Rupal	3495	3000-4400	2, 3, 4.
217	Scrophulariaceae	*Veronica cana* Wall. ex Benth.		Herb	Lho	2340	2300-2500	3
218	Scrophulariaceae	*Veronica himalensis* D. Don		Herb	Tallo Rupal	3495	3000-5000	3, 4, 6.
219	Solanaceae	*Solanum nigrum* L.	Kalo Bihi	Herb	Lho	2340	900-2900	1, 3, 4.

220	Theaceae	*Eurya acuminata* DC.	Bilaune	Shrub	Gap	2230	1300-2500	1, 3, 4, 5.
221	Urticaceae	*Boehmeria platyphylla* D. Don	Gargalo	Herb	Namrung	2440	800-2700	1, 3, 4, 6.
222	Urticaceae	*Lecanthus peduncularis* (Royle) Wedd	Khole jhar	Herb	Above Namrung	2225	1200-3200	3, 4.
223	Urticaceae	*Pilea scripta* (Buch.-Ham. ex. D. Don)		Herb	Namla Gumba	2770	1300-2500	3, 4.
224	Urticaceae	*Urtica dioica* L.	Sisno	Herb	Above Namrung	2225	3000-4500	3, 4, 5, 6.
225	Valerianaceae	*Valeriana hardwickii* Wall.	Nakkali jatamasi	Herb	Kharka, Namrung	3365	1200-4000	1, 2, 3, 4, 6
226	Verbenaceae	*Caryopteris odorata* (D. Don) B. L. Rob.	Nilo ghusure	Shrub	Nearby Namrung	2720		3
227	Violaceae	*Viola biflora* L.	Pahenle Ghatte Phool	Herb	Kharka, Namrung	3495	2100-4500	2, 3, 4, 5, 6
228	Vitaceae	*Ampelocissus sikkimensis* (M. A. Lawsonl) Planch.		Climber	Above Namrung	2225	1000-2000	3, 4.
229	Vitaceae	*Tetrastigma serrulatum* (Roxb.) Planch	Pani lahara	Climber	Gap	2230	500-2400	1, 3, 4, 5.
MONOCOTYLEDONS								
1	Amaryllidaceae	*Allium wallichii* Kunth.	Lasun Saag	Herb	Talo Rupal	3740	2400-4650	2, 3, 4, 5, 6.
2	Araceae	*Arisaema tortuosum* (Wall.) Schott.	Birbanka	Herb	Gap	2230	1300-2900	3, 4, 5, 6.
3	Araceae	*Gonatanthus pumilus* (D. Don) Engler & Krause		Herb	Gap	2230	1200-2400	3
4	Commelinaceae	*Commelina paludosa* Blume	Buki	Herb	Lho	2340	300-3500	3, 4, 5, 6
5	Cyperaceae	*Carex filicina* Nees		Herb	Nearby Namrung	2670	1200-4000	2, 3, 4.
6	Cyperaceae	*Fimbristylis complanata* (Retz.) Link		Herb	Birendra tal	3610	900-3100	3, 4.
7	Cyperaceae	*Kobresia gammiei* C. B. Clarke		Herb	Talo Rupal	3740	3600-4000	3, 4.
8	Dioscoreaceae	*Dioscorea bulbifera* L.		Herb	Gap	2230	150-2100	3, 6.
9	Dioscoreaceae	*Dioscorea deltoidea* Wall ex Kunth		Herb	Namrung	2860	450-3100	1, 3, 6.
10	Dioscoreaceae	*Dioscorea hispida* Dennst.		Herb	Namrung	2880	600	3
11	Hypoxidaceae	*Hypoxis aurea* Lour.	Van siru	Herb	Gap	2230	1700-2900	3, 4, 6.
12	Iridaceae	*Iris goniocarpa* Baker		Herb	Talo Rupal	3740	3600-4400	3, 4.
13	Juncaceae	*Juncus gracilicaulis* A. Camus		Herb	Talo Rupal	3740		3
14	Juncaceae	*Juncus himalensis* Klotzsch.		Herb	Samagaun	4000	3200-5200	3, 4, 6.
15	Juncaceae	*Juncus thomsonii* Buchenau		Herb	Kharka, Namrung	3365	2700-5200	3, 4, 6.
16	Juncaceae	*Luzula multiflora* (Retz.) Lej		Herb	Talo Rupal	3740	3200-4000	3, 4.
17	Liliaceae	*Asparagus filicinus* Buch.- Ham ex D. Don	Van Kurilo	Herb	Lho	2805	2100-2900	3, 4, 5.
18	Liliaceae	*Asparagus racemosus* Willd.	Kurilo	Climber	Shyalla	3055	600-2100	3, 4, 5.
19	Liliaceae	*Fritillaria cirrhosa* D. Don		Herb	Birendra Tal	3610	3000-4600	2, 3, 4, 6.
20	Liliaceae	*Lilium nanum* Klotzsch.		Herb	Birendra Tal	3610	3700-4600	3, 4.
21	Liliaceae	*Lilium nepalense* D. Don	Khiraula	Herb	Lho	2805	2300-3400	2, 3, 4.
22	Liliaceae	*Ophiopogon intermedius* D. Don	Ban kasur	Herb	Namla Gumba	2770	1200-3000	3, 4, 5
23	Liliaceae	*Ophiopogon* sp.		Herb	Namrung	3365		3
24	Liliaceae	*Polygonatum cirrhifolium* (Wall.)		Herb	Talo Rupal	3740	1700-4600	2, 3, 4.

		Royle						
25	Smilacaceae	*Smilacina oleracea* (Baker) Hook. f.		Herb	Above Samagaun	3690	2500-3400	3, 4.
26	Smilacaceae	*Smilax aspera* L.	Kuku Daaino	Climber	Samagaun	3575	1200-2600	3, 4, 5, 6.
27	Smilacaceae	*Smilax ferox* Wall.ex Kunth		Climber	Gap	2230	1100-2700	3, 4, 6.
28	Liliaceae	*Streptopus simplex* D. Don		Herb	Namrung	2440	2400-4000	3, 4, 6.
29	Liliaceae	*Theropogon pallidus* (Kunth) Maxim		Herb	Namla Gumba	2720	1800-2700	3, 4, 6.
30	Liliaceae	*Trillidium govanianum* (D. Don) Kunth		Herb	Gap	2230	2700-4000	3, 4, 6.
31	Orchidaceae	*Calanthe alpina* Hook. f.		Herb	Gap	2230	2800-3200	3
32	Orchidaceae	*Calanthe tricarinata* Lindl.	Sungava	Herb	Namrung	2440	1500-3200	3, 4, 5, 6.
33	Orchidaceae	*Cephalanthera longifolia* (L.) Fritsch		Herb	Lho	3230	2800-3200	3, 6.
34	Orchidaceae	*Ponerorchis chusua* (D. Don) Soo		Herb	Birendra Tal	3610	2400-4900	3, 6.
35	Orchidaceae	*Epipactis helleborine* (L.) Crantz		Herb	Lho	3230	2400-4400	3, 6.
36	Orchidaceae	*Epipactis royleana* Lindl.		Herb	Lho	3230	1600-3500	3, 4, 6.
37	Orchidaceae	*Eulophia* sp.		Herb	Lho	2800		3
38	Orchidaceae	*Goodyera biflora* (Lindl.) Hook. f.		Herb	Talo Rupal	3055	2000	3
39	Orchidaceae	*Habenaria pectinata* D. Don		Herb	Birendra Tal	3610	900-3200	1, 3, 4, 6.
40	Orchidaceae	*Herminum mackinnonii* Duthie		Herb	Lho	3230	2400-2600	3
41	Orchidaceae	*Nervilia aragoana* Gaudich		Herb	Lho	3600	2800	3
42	Orchidaceae	*Satyrium nepalense* D. Don		Herb	Nearby Namrung	2670	600-4600	3, 6.
43	Poaceae	*Agrostis micrantha* Steud		Herb	Above Samagaun	3690	3200-3500	3
44	Poaceae	*Agrostis stolonifera* L.		Herb	Above Samagaun	3690	2400-3500	3, 4.
45	Poaceae	*Calamogrostis pseudo-phragmites* (Haller f.) Koeler		Herb	Mathilo Rupal	4005	1500-4600	3
46	Poaceae	*Poa annua* L.		Herb	Namla Gumba	2770	2300-3500	3
47	Zingiberaceae	*Cautleya gracilis* (Sm.) Dandy		Herb	Nearby Namrung	2670	1200-3100	1, 3, 4, 6.
48	Zingiberaceae	*Roscoea purpurea* Sm.	Kakoli	Herb	Namla Gumba	2770	1500-1900	3

Appendix II: Enumeration of flowering plants of Manasu Conservation and adjoining areas: Arughat (500m) - Larke Pass (5200m)

S. N.	Family	Latin name	Local Name	Locality	Altitude (m)	References
GYMNOSPERMS						
1	Cupressaceae	*Cupressus torulosa* D. Don				6
2	Cupressaceae	*Juniperus communis* L.				2
3	Cupressaceae	*Juniperus macropoda* Boiss				2
4	Cupressaceae	*Juniperus recurva* Buch.-Ham. ex D. Don				2, 5, 6
5	Pinaceae	*Larix griffithiana* Hort. ex Carriere		Sama	3500	1, 6
6	Pinaceae	*Pinus roxburgii* Sargent	Sablipil	Kal Tal - Ngyak		1, 5, 6
DICOTYLEDONS						
1	Acanthaceae	*Barleria cristata* L.	Nilamani			5
2	Acanthaceae	*Strobilanthes wallichii* Nees.		Kharka, Namrung	3365	6
3	Aceraceae	*Acer campbellii* Hook. f. & Thomson		Timang	2700	1, 2, 6
4	Aceraceae	*Acer cappadocicum* Gleditsch		Timang	2700	1, 5.
5	Aceraceae	*Acer niveum* Blume Cent.				6
6	Aceraceae	*Acer oblongum* Wall. ex DC.		Kal Tal – Ngyak		1, 5.
7	Aceraceae	*Acer poliophyllum* W. P. Fang & Y. T. Wu				5
8	Aceraceae	*Acer sterculiaceum* Wall.	Kilokya			5, 6.
9	Actinidiaceae	*Saurauria napaulensis* DC.	Gogan			5
10	Amaranthaceae	*Achyranthes aspera* L.		Arughat Bazar		1, 6.
11	Amaranthaceae	*Achyranthes bidentata* Blume		Sarte	2050	1
12	Amaranthaceae	*Cyathula tomentosa* Miquel	Kapase Kuro	Philim	1600	1, 5, 6.
13	Amaranthaceae	*Deeringia amaranthoides* Merrill		Arughat Bazar		1
14	Anacardiaceae	*Rhus javanica* Miller		Gab - Lana	2000	1, 5, 6.
15	Apiaceae	*Angelica* sp.				6
16	Apiaceae	*Bupleurum lanceolatum* DC.		Gap	2550	1
17	Apiaceae	*Bupleurum longicaule* Wall. ex DC.		Tsumje	3800	1
18	Apiaceae	*Carum carvi* L.		Ngachu	3300	1, 6.
19	Apiaceae	*Centella asiatica* (L.) Urb.				6
20	Apiaceae	*Heracleum candicans* Wall ex DC		Tat pani	2800	1
21	Apiaceae	*Heracleum lallii* C. Norman				2
22	Apiaceae	*Osmorhiza aristata* Royle		Pisang - Tat pani	2900	1
23	Apiaceae	*Heracleum nepalense* D. Don				6
24	Apiaceae	*Pleurospermum benthamii* (DC.) C. B. Clarke				6
25	Apiaceae	*Selinum wallichianum* (DC.) Raizada & Saxena				6
26	Apiaceae	*Selinum candollei* DC.				1
27	Apiaceae	*Torilis japonica* (Houtt.) DC.		Tsumje	3300	2
28	Apocynaceae	*Holarrhena pubescens* (Buch.-Ham.) Wall. ex G. Don				6
29	Apocynaceae	*Trachelospermum* sp.				6
30	Araliaceae	*Acanthopanax cissifolius* (Griff. ex				6

		Seem.) Harms				
31	Araliaceae	*Brassaiopsis glomerulata* (Blume) Regel				5
32	Araliaceae	*Brassaniopsis hainla* (Buch.- Ham ex D. Don) Seem	Sete chuletro			5, 6.
33	Araliaceae	*Pentapanax leschenaultii* (DC.) Seem.				6
34	Araliaceae	*Schefflera impressa* (C. B. Clarke) Harms				6
35	Asclepiadaceae	*Cynanchum auriculatum* Wight				6
36	Asclepiadaceae	*Tylophora tenerrima* Wight		Near Thonje		1
37	Asclepiadaceae	*Hoya lanceolata* Wall. ex D. Don				6
38	Asclepiadaceae	*Pentasacme* sp.				6
39	Asclepiadaceae	*Ceropegia pubescens* Wall.				2
40	Asclepiadaceae	*Marsdenia roylei* Wight				6
41	Asteraceae	*Adenostemma lavenia var. parviflorum* (Blume) Hochr.		Sarte	2100	1
42	Asteraceae	*Ageratum conyzoides* L.		Khudi – Jagat	1000-1800	1
43	Asteraceae	*Anaphalis hondae* Kitam.		Near Tilman Camp		1, 6
44	Asteraceae	*Anaphalis contorta var. contorta* (D. Don) Hook. f.		Jagat – Thonje	1800-2020	1
45	Asteraceae	*Arctium lappa* L.	Kuro			5
46	Asteraceae	*Artemisia dubia* Wall. ex DC.	Titepati			2, 5, 6
47	Asteraceae	*Artemisia gmelinii* Weber ex Stechm.				2
48	Asteraceae	*Artemisia japonica* Thunb.		Near Tilman Camp	2800	1
49	Asteraceae	*Artemisia roxburghiana* Besser		Near Tilman Camp	2800	1
50	Asteraceae	*Artemisia indica* Willd.				6
51	Asteraceae	*Aster barbellatus* Grierson				6
52	Asteraceae	*Aster diplostephioides* (DC.) C. B. Clarke				6
53	Asteraceae	*Aster flaccidus* Bunge				6
54	Asteraceae	*Aster himalaicus* C. B. Clarke				6
55	Asteraceae	*Aster albescens* Wall. ex Handel-Mazzetti				2, 6.
56	Asteraceae	*Aster trinervius* Roxb. ex D. Don		Jagat – Thonje		1
57	Asteraceae	*Aster himalaicus* C. B. Clarke				2
58	Asteraceae	*Aster asteroides (*DC.) Kuntze		Larkya La	4600	1
59	Asteraceae	*Aster indamellus* Grierson		Tilman Camp-Pisang	2800-3000	1
60	Asteraceae	*Aster sikkimensis* Hook				2
61	Asteraceae	*Aster stracheyi* Hook. f.				1, 6
62	Asteraceae	*Blumea fistulosa* (Roxb.) Kurz		Arughat Bazar	650	1
63	Asteraceae	*Carpesium abrotanoides* L.		Kal tal – Ngyak	3700-2200	1
64	Asteraceae	*Chrysanthellum indicum* DC.		Tilman camp – Pisang	2800-3000	1
65	Asteraceae	*Cicerbita cyanea* (Don) Beauverd		Khudi -Jagat	1000-1800	1
66	Asteraceae	*Cicerbita macrorhiza* (Royle.) Beauv.		Jagat - Thonje	1800-200	1, 6
67	Asteraceae	*Cirsium falconeri* (Hook.f.) Petr.				2, 6
68	Asteraceae	*Conyza stricta* Willd.	Boki	Khudi -Jagat	1000-1800	1

69	Asteraceae	*Cremanthodium nepalense* Kitam.				2, 6
70	Asteraceae	*Cremanthodium oblongatum* C.B. Clarke				2
71	Asteraceae	*Cremanthodium purpureifolium* Kitam.				2, 6
72	Asteraceae	*Cremanthodium retusum* (Wall. ex Hook. f.) R. Good				6
73	Asteraceae	*Crepis himalaica* Kitam.				2, 6
74	Asteraceae	*Dendranthema nubigenum* (Wall. ex DC.) Kitam. ex Kitam. & Gould				6
75	Asteraceae	*Duhaldea cappa* (Buch.-Ham. ex D.Don) Pruski & Anderb.	Gai Tihare			5
76	Asteraceae	*Erigeron multiradiatus* (Lindl. ex DC.) C. B. Clarke				6
77	Asteraceae	*Erigeron monticolus*Wall. ex DC.				5
78	Asteraceae	*Eupatorium adenophorum* Spreng				6
79	Asteraceae	*Gerbera nivea* Benth.	Panda			2
80	Asteraceae	*Gnaphalium affine* D. Don				6
81	Asteraceae	*Gynura nepalensis* DC.				6
82	Asteraceae	*Hieracium* sp.				6
83	Asteraceae	*Inula hookeri* C.B. Clarke				2
84	Asteraceae	*Inula racemosa* Hook. f				6
85	Asteraceae	*Jurinea dolomiaea* Boiss				6
86	Asteraceae	*Leontopodium himalayanum* DC.				6
87	Asteraceae	*Leontopodium jacotianum* Beauverd		Manaslu		1, 2, 6
88	Asteraceae	*Leontopodium makianum* Kitam.				6
89	Asteraceae	*Leontopodium nanum* (Hook. f. & Thomson ex C. B. Clarke) Hand.-Mazz				6
90	Asteraceae	*Ligularia fischeri* (Ledeb.) Turcz.				2, 6
91	Asteraceae	*Nannoglottis hookeri* (C. B. Clarke ex Hook. f.) Kitam.				6
92	Asteraceae	*Petasites tricholobus* Franch.		Pisang-Tatpani	3390	1
93	Asteraceae	*Picris hieracioides* Kitam.		Tsumje	3300	1
94	Asteraceae	*Saussurea graminifolia* Wall. ex DC.				6
95	Asteraceae	*Saussurea nepalensis* Spreng.,				6
96	Asteraceae	*Saussurea obvallata* (DC.) Edgew.				6
97	Asteraceae	*Senecio graciliflorus* DC.		Around Timang		1
98	Asteraceae	*Taraxacum officinale* Wigg.				6
99	Asteraceae	*Tridax procumbens* L.	Husure- zarl	Arughat Bazar	650	1
100	Asteraceae	*Tussilago farfara* L.				6
101	Asteraceae	*Veronia saligna* DC.		Arughat	620	1
102	Asteraceae	*Veronia subsessilllis* DC.		Arughat Bazar	620	1
103	Asteraceae	*Waldheimia glabra* (Decne.) Regel				6
104	Asteraceae	*Wedelia wallichii* Less.	Noulezharl	Jagat - Hosdoban	1400	1
105	Balsaminaceae	*Impatiens bicolor* Royle		Sarte	2200	1
106	Balsaminaceae	*Impatiens edgeworthii* Hook. f.				6
107	Balsaminaceae	*Impatiens amplexicaulis* Edgew.		Ngile	3400	1
108	Balsaminaceae	*Impatiens scabrida* DC.		Tat pani	2800	1
109	Balsaminaceae	*Impatiens urticifolia* Wall.				5, 6

110	Begoniaceae	*Begonia josephii* A. DC.				6
111	Begoniaceae	*Begonia picta* Sm.				6
112	Begoniaceae	*Begonia rubella* Buch.-Ham. ex D. Don				6
113	Berberidaceae	*Berberis aristata* DC.	Aul chutro	Sama - kal Tal		1, 2, 5, 6.
114	Berberidaceae	*Berberis asiatica* Roxb. ex DC.		Sama - kal Tal		1, 5, 6
115	Berberidaceae	*Berberis chitria* Ham. ex Ker.				5
116	Berberidaceae	*Berberis koehneana* C. K. Schneid	Chutro			5
117	Berberidaceae	*Berberis mucrifolia* Ahrendt				2
118	Berberidaceae	*Berberis ulicina* Hook. f. & Thomson				6
119	Berberidaceae	*Berberis wallichiana* DC.	Baarhamaase chutro			5
120	Berberidaceae	*Mahounia napaulensis* DC.	Jamane Mandro	Kal tak – Ngyak		1, 5, 6
121	Bignoniaceae	*Incarvillea arguta* (Royle) Royle				6
122	Bignoniaceae	*Incarvillea mairei* (H. Lev.) Grierson				6
123	Bombacaceae	*Bombax ceiba* L.	Simal			5, 6
124	Boraginaceae	*Cynoglossum glochiadiatum* Don	Kanike kuro	Tsumje	3300	1, 5.
125	Boraginaceae	*Arnebia nepalensis* (Kitam.) H. Hara				6
126	Boraginaceae	*Cynoglossum lanceolatum* Forsk		Gap	2800	1
127	Boraginaceae	*Eritrichium* sp.				6
128	Boraginaceae	*Lindelofia* sp.				6
129	Boraginaceae	*Maharanga emodi* (Wall.) A. DC.				1, 6
130	Boraginaceae	*Microula sikkimensis* (C. B. Clarke) Hemsl.				6
131	Buxaceae	*Sarcococca hookerana* Baill.	Chile kaath			5, 6
132	Campanulaceae	*Campanula cana* Wall.		Jagat – Thonje	1800-2000	1
133	Campanulaceae	*Campanula nakaoi* Kitam.		Near Tsumje	3200	1
134	Campanulaceae	*Codonopsis rotundifolia* Benth.				2, 6
135	Campanulaceae	*Codonopsis viridis* Wall.				5
136	Campanulaceae	*Campanula argyrotricha* Wall. ex A. DC.				6
137	Campanulaceae	*Campanula latifolia* L.				6
138	Campanulaceae	*Codonopsis thalictrifolia* Wall.				6
139	Campanulaceae	*Lobelia pyramidalis* Wall.				6
140	Campanulaceae	*Cyananthus microphyllus* Edgew.		Tsumje	2500	1, 6
141	Campanulaceae	*Lobelia chinensis* Loureilo				1
142	Campanulaceae	*Lobelia erectiuscula* H. Hara		Sarte	2000	1
143	Campanulaceae	*Peracarpa carnosa* (Wall.) Hook. f. & Thomson	Kalmunte	Chitrey pass	2300	1
144	Cannabaceae	*Cannabis sativa* L.	Gojha	Philim	1900	1, 6
145	Caprifoliaceae	*Lonicera angustifolia* Wall. ex DC.		Pisang - Tat pani	2900	1, 2
146	Caprifoliaceae	*Lonicera lanceolata* Wall.				2
147	Caprifoliaceae	*Lonicera myrtillus* Rehder		Samagaun	3500	1
148	Caprifoliaceae	*Lonicera obovata* Royle ex Hook. f. & Thomson				2, 5, 6
149	Caprifoliaceae	*Lonicera webbiana* Wall. ex DC.		Lho		1, 5.
150	Caryophyllaceae	*Arenaria denisissima* Wall. ex Edgew. & J. D. Hooker				6
151	Caryophyllaceae	*Arenaria glanduligera* Edgew.				6

152	Caryophyllaceae	*Cerastium fontanum var. angustifolium* (Franch.) H. Hara	Almalei	Chitrey pass	2400	1
153	Caryophyllaceae	*Gypsophila cerastioides* D. Don		Manaslu	4100	1
154	Celastraceae	*Celastrus glaucophyllus* Rehder & E. H. Wilson				5
155	Celastraceae	*Euonymus pendulus* Wall.				5
156	Celastraceae	*Euonymus tingens* Wall.	Iyerkha			5
157	Celastraceae	*Gymnosporia montana* Roth. ex Benth.	Ris	Kal Tal – Ngyak		1
158	Chenopodiaceae	*Chenopodium album* L.				6
159	Chenopodiaceae	*Chenopodium foliosum* Aschers		Samagaun	3200	1
160	Clusiaceae	*Hypericum podocarpoides* N. Robson				6
161	Cobretaceae	*Terminalia bellirica* (Gaertn) Roxb.				6
162	Cobretaceae	*Terminalia chebula* Retz.				6
163	Convolvulaceae	*Evolvulus alsinoides* L.	Sunkasi Zarl	Arughat Bazar	700	1
164	Cornaceae	*Swida oblonga* (Wall.) Sojak	Lato kaath	Sama - Kal Tal		1, 5.
165	Corylaceae	*Carpinus viminea* Lindl.	Khadik			5, 6
166	Corylaceae	*Corylus ferox* Wall.	Lekh Katush			5, 6
167	Crassulaceae	*Rhodiola crenulata* (Hook. f. & Thomson) H. Ohba		Tsumje	3300	1
168	Crassulaceae	*Rhodiola sinuata* (Royle ex Edgew.) S. H. Fu		Timang	3650	1
169	Crassulaceae	*Rhodiola bupleuroides* (Wall. ex Hook. f. & Thomson) S. H. Fu.				6
170	Crassulaceae	*Rhodiola himalensis* (D.Don) S. H. Fu.				6
171	Crassulaceae	*Rhodiola prainii* (Raym.- Hamet) H. Ohba				6
172	Crassulaceae	*Rhodiola wallichiana* (Hook.) S. H. Fu.				6
173	Cruciferae	*Arabis alpina subsp. brevifolia (*DC.) Greuter & Burdet		Ngachu	3300	1
174	Cruciferae	*Draba gracillima* Hook. f. & Thomson		Manaslu	3800	1
175	Cruciferae	*Noccaea andersonii* (Hook. f. & Thomson) Al-Shehbaz		Larkya La	4000-4300	1
176	Cruciferae	*Lepidium capitatum* Hook. f. & Thomson		Ngile	3400	1
177	Cruciferae	*Lignariella hobsonii* (Pearson) Baehni				6
178	Cruciferae	*Cardamine loxostemonoides* O. E. Schulz.				6
179	Cruciferae	*Cardamine violacea* (D. Don) Wall.				6
180	Cucurbitaceae	*Solena heterophylla* Lour.				6
181	Cucurbitaceae	*Trichosanthes tricuspidata* Lour.	Indreni			5, 6
182	Dipsacaceae	*Dipsacus mitis* Don		Jagat - Thonje		1
183	Dipsacaceae	*Morina longifolia* Wall. ex DC.		Tilman Camp - Pisang		1, 6
184	Dipsacaceae	*Morina polyphylla* Wall. ex DC.				2, 6
185	Dipsacaceae	*Pterocephalus hookeri* (C.B. Clarke) Diels		Tsumje	3700	1
186	Dipsacaceae	*Shorea robusta* Gaertner.f.	Sal	Arughat Bazar	700	1
187	Dipsacaceae	*Triplostegia glandulifera* Wall. ex DC.		Tsumje	3300	1
188	Dipterocarpaceae	*Elaeagnus caudata* Schltdl. ex Momiy	Guenlee			5

189	Droseraceae	*Drosera peltata* Sm.				6
190	Elaeagnaceae	*Elaeagnus parvifolia* Wall. ex Royle	Guenlee			5, 6
191	Elaeagnaceae	*Elaeagnus infundibularis* Momity				6
192	Elaeagnaceae	*Hippophae salicifolia* D. Don	Daale chuk			2, 5, 6
193	Elaeagnaceae	*Hippophae tibetana* Schltdl				2, 6
194	Ericaceae	*Gaultheria fragrantissima* Wall.	Dhasingare			5, 6
195	Ericaceae	*Gaultheria griffithiana* Wight		Thomje - Lipche	2400	1
196	Ericaceae	*Rhododendron arboreum* Sm.	Lali Gurans			2, 5, 6
197	Ericaceae	*Rhododendron lowndesii* Davidian		Tsumje	2450	1
198	Ericaceae	*Rhododendron nivale* Hook. f.				2
199	Ericaceae	*Lyonia villosa* (Hook. f.) Hand.- Mazz.				6
200	Ericaceae	*Rhododendron cowanianum* Davidian				6
201	Ericaceae	*Vaccinium gaultheriifolium* (Griff.) Hook.f. ex C. B. Clarke				6
202	Ericaceae	*Vaccinium nummularia* Hook. f. & Thomson ex C. B. Clarke				6
203	Ericaceae	*Vaccinium retusum* Hook.f.	Honiki	Chitrey pass	2300	1
204	Euphorbiaceae	*Arachne cordifolia* (Decne.) Hurus.		Kal Tal – Ngyak		1
205	Euphorbiaceae	*Croton caudatus* Geisel	Khali	Jagat - Hosdoban	1300	1
206	Euphorbiaceae	*Euphorbia longifolia* Don.		Tat pani	2800	1
207	Euphorbiaceae	*Euphorbia hirta* L.	Dudezharl	Philim	1300	1
208	Euphorbiaceae	*Euphorbia cognata* (Klotzsch & Garcke) Boiss.				6
209	Euphorbiaceae	*Euphorbia pulcherrima* Wild. ex Klotzcsh				6
210	Euphorbiaceae	*Euphorbia thomsoniana* Boiss				6
211	Euphorbiaceae	*Euphorbia wallichii* Hook. f.	Dudhe jhar			5, 6
212	Euphorbiaceae	*Phyllanthus emblica* L.		Arughat Bazar		1, 6
213	Euphorbiaceae	*Phyllanthus glaucus* Wall. ex Muell		Ripche	2400	1, 5.
214	Euphorbiaceae	*Phyllanthus parvifolius* Ham.		Kal Tal – Ngyak		1
215	Euphorbiaceae	*Mallotus japonicus* (L.f.) Müll.Arg.				5
216	Euphorbiaceae	*Mallotus nepalensis* Mill. Arg.	Ghoge tanke			5
217	Euphorbiaceae	*Mallotus philippinensis* Muell. Arg.		Ngyak – Arughat		1
218	Euphorbiaceae	*Sapium insigne* (Royle) Benth. ex Hook. f.	Khiro			5, 6
219	Fabaceae	*Acacia pennata* Willd.		Arughat Bazar	625	1
220	Fabaceae	*Albizia julibrissin* Durazz.				6
221	Fabaceae	*Astragalus floridus* Benth. ex Bunge				2, 6.
222	Fabaceae	*Astragalus melanostachys* Benth. ex Bunge				2
223	Fabaceae	*Astragalus polyacanthus* Royle		Jagat - Thonje	2640-2020	1
224	Fabaceae	*Butea minor* Buch.- Ham. ex Baker	Bhuletro			5, 6.
225	Fabaceae	*Caragana brevispina* Royle				2, 6.
226	Fabaceae	*Caragana sukiensis* C.K. Schneid				2, 6.
227	Fabaceae	*Cassia mimosoides* L.		Jagat	1650	1
228	Fabaceae	*Crotalaria sessilliflora* L.		Khudi - Jagat	1000-1800	1

229	Fabaceae	*Dalbergia hircina* Benth.		Tat Pani	1700	1
230	Fabaceae	*Dalbergia paniculata* Roxb.				5
231	Fabaceae	*Desmodium multiflorum* DC.		Thomje - Lipche	2500	1
232	Fabaceae	*Desmodium sequax* Wall.		Camp		1
233	Fabaceae	*Erythrina* sp.				6
234	Fabaceae	*Flemingia macrophylla* (Willd.) Prain	Bhatmaase			1
235	Fabaceae	*Flemingia strobilifera* (L.) W. T. Aiton				6
236	Fabaceae	*Hedysarum kumaonense* Benth. ex Baker		Tat Pani - Pisang	2900	1, 2, 6.
237	Fabaceae	*Hedysarum manaslense* (Kitam.) H. Ohashi				6
238	Fabaceae	*Indigofera heterantha* Wall. ex Brandis	Sakhino			5
239	Fabaceae	*Indigofera pulchella* Roxb.		Tat Pani - Pisang	2900	1
240	Fabaceae	*Indigofera trifoliata* L.	Bhodumpate	Jagat - Hosdoban	1400	1
241	Fabaceae	*Lens culinaris* (Beib) Thellung		Tat pani	2800	1
242	Fabaceae	*Medicago falcata* L.				6
243	Fabaceae	*Millettia extensa (*Benth.) Baker		Ngyak – Arughat		1
244	Fabaceae	*Oxytropis lapponica* J. Gay				2
245	Fabaceae	*Oxytropis microphylla* DC.				2
246	Fabaceae	*Sophora moorcroftiana* (Benth.) Benth. ex Baker				6
247	Fabaceae	*Thermopsis lanceolata* R. Br. ex W. T. Aiton				6
248	Fabaceae	*Trigonella pubescens* Edgew. ex Baker		Tsumje	3300	1
249	Fabaceae	*Uraria rufescens* (DC.) Schindl.		Sarte	1950	1
250	Fagaceae	*Castanopsis indica* A. DC.	Kot- tus	Uppermost limit	2050	1, 6
251	Fagaceae	*Quercus gambleana* A.Camus	Phalat			5
252	Fagaceae	*Quercus acutissima* Carr.	Khasru	Sama - Kal Tal		1, 5.
253	Fagaceae	*Quercus aquifolioides* Rehder & E.H.Wilson	Kashru			5
254	Fagaceae	*Castanopsis tribuloides* (Sm.) A. DC.				6
255	Fagaceae	*Quercus lamellosa* Sm.				6
256	Fagaceae	*Quercus lanata* Sm.				6
257	Fagaceae	*Quercus leucotrichophora* A. Camus				6
258	Fagaceae	*Quercus floribunda* Lindl. ex A. Camus	Belo khar Mendo	Gap	2500	1, 6
259	Fagaceae	*Quercus glauca* Thunb.	Falat	Khudi - Jagat	1000-1800	1, 6
260	Flacourtiaceae	*Gynocardia odorata* Roxb.				5
261	Flacourtiaceae	*Homalium napaulense* Benth.	Alu	Jagat	1650	1, 5, 6
262	Gentianaceae	*Exacum teres* Wall.		Philim	1100	1
263	Gentianaceae	*Gentiana detonsa* Fries.		Tilman camp – Pisang		1
264	Gentianaceae	*Gentiana ornata* (G. Don) Griseb				2
265	Gentianaceae	*Gentiana phyllocalyx* C. B. Clarke				6
266	Gentianaceae	*Gentiana straminea* Maxim.				6
267	Gentianaceae	*Gentianella paludosa* (Hook.) H. Sm.				6
268	Gentianaceae	*Lomatogonium carinthiacum* (Wulfen) Rchb				2

269	Gentianaceae	*Swertia alternifolia* Royle				6
270	Gentianaceae	*Swertia nervosa* (Wall ex G. Don) C.B. Clarke	Chiraito			1
271	Gentianaceae	*Swertia paniculata* Wall.				2,6.
272	Gentianaceae	*Tripterospermum volubile* (D. Don) H. Hara				5
273	Geraniaceae	*Geranium lambertii* Sweet				6
274	Geraniaceae	*Geranium polyanthes* Edgew. & Hook. f				6
275	Geraniaceae	*Geranium pratense* L.				2
276	Geraniaceae	*Geranium refractum* Edgew. & Hook. f.				6
277	Gesneriaceae	*Corallodiscus lanuginosus* (Wall. ex DC.) Burtt				6
278	Gesneriaceae	*Didymocarpus oblongus* Wall. ex D. Don				6
279	Gesneriaceae	*Didymocarpus pedicellatus* R. Br.				6
280	Gesneriaceae	*Platystemma violoides* Wall.		Gap	2200	1
281	Grossulariaceae	*Ribes griffithii* Hook. f. & Thomson				6
282	Grossulariaceae	*Ribes orientale* Desf				6
283	Hydrangeaceae	*Deutzia hookeriana* (C.K. Schneider) Airy-Shaw		Lho	3000	1
284	Hydrangeaceae	*Hydrangea anomala* D. Don				6
285	Hydrangeaceae	*Hydrangea aspera* Buch.-Ham. ex D. Don				6
286	Hydrangeaceae	*Philadelphus tomentosus* Wall. ex Royle		Pisang - Tat pani	2900	1,6.
287	Juglandaceae	*Engelhardia spicata* Lesch. ex Blume				6
288	Labiatae	*Ajuga bracteosa* Wall. ex Benth.		Lipche		1
289	Labiatae	*Rabdosia coetsa* (Buch.-Ham. ex D. Don) H. Hara		Jagat – Thonje	2000	1
290	Labiatae	*Lamium album* L.		Timang	2700	1
291	Labiatae	*Lamium amplexicaule* L.		Tat pani	2800	1
292	Labiatae	*Leucosceptrum canum* Sm.	Bhusure			5, 6.
293	Labiatae	*Micromeria nepalensis* Kitam. & Murata				6
294	Labiatae	*Nepeta lamiopsis* Benth.				2
295	Labiatae	*Origanum vulgare* L.				2, 6.
296	Labiatae	*Perilla frutescens* (L.) Britt		Khudi - Jagat		1
297	Labiatae	*Phlomis spectabilis* Falc. ex Benth.		Tsumje	3300	1
298	Labiatae	*Rabdosia rugosa* (Wall. ex Benth.) H. Hara				6
299	Labiatae	*Salvia campanulata* Wall. ex Benth.				6
300	Labiatae	*Salvia nubicola* Wall. ex Sweet		Jagat - Thonje		1
301	Labiatae	*Salvia roborowskii* Maxim.		Tsumje	3400	1
302	Labiatae	*Scutellaria grossa* Wall.		Tsumje	3300	1
303	Labiatae	*Thymus linearis* Benth.		Ngile	3400	1, 6.
304	Lardizabalaceae	*Holboellia latifolia* Wall.	Gopara	Tilmancamp -Thonje		1
305	Lauraceae	*Actinodaphne obovata* (Nees) Blume				5
306	Lauraceae	*Cinnamomum tamala* (Buch.- Ham.) Nees & Eberm.	Tejpat			5
307	Lauraceae	*Dodecadenia grandiflora var. grandiflora* Nees.				6
308	Lauraceae	*Lindera neesiana* (Nees) Kurz	Sitimur			5

309	Lauraceae	*Lindera pulcherrima* (Nees) Benth. ex Hook.f.	Kharane			5, 6.
310	Lauraceae	*Neolitsea cuipala* (Buch.-Ham. ex D. Don) Kosterm	Shinkouli	Jagat - Hosdoban	1400	1
311	Lauraceae	*Machilus duthiei* King	Kaulo			5
312	Lauraceae	*Persea* sp.				6
313	Lauraceae	Unknown sp				5
314	Lentibulariaceae	*Pinguicula alpina* L.		Manaslu	3700	1
315	Lentibulariaceae	*Utricularia minor* L.		near samagaun	3150	1
316	Loganiaceae	*Buddleja asiatica* Lour.				6
317	Loganiaceae	*Buddleja crispa* Benth.				6
318	Loranthaceae	*Viscum album* L.				6
319	Magnoliaceae	*Magnolia campbellii* Hook.f. & Thomson		Chitrey pass	2600	1, 6.
320	Magnoliaceae	*Michelia kisopa* Ham. ex DC.	Ban champ	Khudi - Jagat		1, 5, 6.
321	Malvaceae	*Abelmoschus manihot* (L.) Medik				5
322	Melastomataceae	*Osbeckia nepalensis* Hook.	Seto chulsi			5
323	Melastomataceae	*Melastoma melabathricum* L.				6
324	Melastomataceae	*Osbeckia stellata* Wall. ex Don	Tsulesi	Jagat	1600	1
325	Meliaceae	*Cipadessa baccifera (*Roth.) Miq.		Arughat Bazar		1
326	Meliaceae	*Melia azedarach* L.	Bakaina			5, 6.
327	Meliaceae	*Toona ciliata* Roem.	Tumi	Jagat	1700	1
328	Meliaceae	*Toona serrata* (Royle) M. Roem				6
329	Meliaceae	*Toona sinensis* (A. Juss.) M. Roem	Tuni			5
330	Menispermaceae	*Cissampelos pareira* L.				6
331	Menispermaceae	*Cocculus laurifolius* DC.				6
332	Menispermaceae	*Stephania japonica* (Thunb.) Miers				6
333	Monotropaceae	*Monotropa hypopitys* L.				6
334	Monotropaceae	*Monotropa hypopitys* Fr. & Sav.		Tsumje	3500	1
335	Moraceae	*Ficus benjamina* L.	Somi	Arughat Bazar	700	1
336	Moraceae	*Ficus hispida* L.f.		Lapu	950	1
337	Moraceae	*Ficus neriifolia var. fieldingii* Sm.		Gap to Lana	2100	1
338	Moraceae	*Ficus sarmentosa* Buch.- Ham ex Sm.	Ban Timila			5
339	Moraceae	*Morus australis* Poir.	Kimu			5
340	Myricaceae	*Myrica esculanta* Pers.				6
341	Myrsinaceae	*Maesa chisia* Buch.-Ham. ex D. Don				6
342	Myrsinaceae	*Maesa montana* DC.	Thinke			5
343	Myrsinaceae	*Maesa macrophylla* Wall	Boki Omil	Philim	1350	1
344	Myrsinaceae	*Myrsine semiserrata* Wall.				6
345	Oleaceae	*Fraxinus chinensis* Roxb.				5
346	Oleaceae	*Fraxinus floribunda* Wall.	Larkli			5
347	Oleaceae	*Jasminum dispermum* Wall.		Thonje	2200	1
348	Oleaceae	*Jasminum officinale* L.				6
349	Oleaceae	*Ligustrum compactum* Hook. f. & Thomson		Gabu to Lana	2100	1
350	Oleaceae	*Ligustrum indicum* (Lour.) Merr.				6
351	Oleaceae	*Olea glandulifera* Wall. ex DC.		Kal Tal - Ngyak		1

352	Oleaceae	*Syringa emodi* Wall. ex G. Don		Pisang -Tat pani	3000	1, 5.
353	Onagraceae	*Epilobium cylindricum* D. Don				6
354	Onagraceae	*Epilobium latifolium* P. h. Raven				2, 6.
355	Orobanchaceae	*Aeginetia indica* L.		Jagat - Hosdoban	1400	1
356	Papaveraceae	*Corydalis flaccida* Hook. f. & Thomson				2
357	Papaveraceae	*Corydalis gerdae* Fedde.				6
358	Papaveraceae	*Corydalis juncea* Wall.				2
359	Papaveraceae	*Corydalis ramosa* Wall. ex Hooker		Tsumje	3300	1
360	Papaveraceae	*Hypecoum parviflorum* L.		Timana	2700	1
361	Papaveraceae	*Meconopsis manasluensis* P. Egan		East of Samdo	4000	7
362	Papaveraceae	*Corydalis govaniana* Wall.				6
363	Papaveraceae	*Corydalis megacaly***x** Ludlow				6
364	Papaveraceae	*Dicranostigma lactucoides* Hook. f. & Thomson				6
365	Papaveraceae	*Meconopsis bella* Prain				6
366	Papaveraceae	*Meconopsis simplicifolia* (D. Don) Walp				6
367	Papaveraceae	*Meconopsis napaulensis* DC.		Thaple Himal	4300	1
368	Papaveraceae	*Meconopsis paniculata* (Don) Prain		Tsumje	3450	1, 6.
369	Papaveraceae	*Meconopsis regia* G. Taylor				2, 6.
370	Parnassiaceae	*Parnassia wightiana* Wall. ex Wight & Arn.				6
371	Piperaceae	*Piper boehmeriifolia* (Miq.) DC.				6
372	Plantaginaceae	*Plantago erosa* Wall.				2
373	Plantaginaceae	*Plantago major* L.				6
374	Polygalaceae	*Polygala arillata* Ham.	Luinche phool			5, 6.
375	Polygalaceae	*Polygala crotalarioides* Ham.		Lana - Dhorzhong	2300	1
376	Polygalaceae	*Polygala sibirica* L.		Lana - Dhorzhong	2300-2700	1
377	Polygonaceae	*Bistorta vivipara* (L.) Gray				6
378	Polygonaceae	*Eskemukerjea megacarpum* (H. Hara) H. Hara				6
379	Polygonaceae	*Rheum acuminatum* Hook. f. & Thomson ex Hook.				6
380	Polygonaceae	*Bistorta amplexicaulis var. pendula* H. Hara				6
381	Polygonaceae	*Bistorta emodi* (Meisn.) H. Hara				2
382	Polygonaceae	*Bistorta macrophylla* (D. Don) Sojak				2
383	Polygonaceae	*Bistorta milletii* Lev.				6
384	Polygonaceae	*Fagopyrum dibotrys* (D. Don) H. Hara	Wanwade Saag	Tilman camp-Pisang		1, 5, 6.
385	Polygonaceae	*Fagopyrum esculentum* Moench	Fapar			5
386	Polygonaceae	*Oxyria digyna* Hill		Manaslu	3600	1
387	Polygonaceae	*Polygonum macrophyllum* Don		Manaslu	3800	1
388	Polygonaceae	*Rheum australe* D. Don				2, 6.
389	Polygonaceae	*Rheum moorcroftianum* Royle				2, 6.
390	Primulaceae	*Androsace rotundifolia* Hardw.		Gap	2000	1, 6.
391	Primulaceae	*Androsace* sp.		Lho	3000	4

392	Primulaceae	**A***ndrosace lehmanni**i*** Wall. ex Duby				6
393	Primulaceae	*Androsace tapete* Maxim.				6
394	Primulaceae	*Primula buryana* Balf. f.				6
395	Primulaceae	*Primula glomerata* Pax.				6
396	Primulaceae	*Primula involucrata* Wall. ex Duby				6
397	Primulaceae	*Primula obliqua* W. W. Sm.				6
398	Primulaceae	*Primula reptans* Hook. f. ex Watt				6
399	Primulaceae	*Primula tenuiloba* (Watt) Pax.				6
400	Primulaceae	*Primula concinna* Watt.				2, 6.
401	Primulaceae	*Primula denticulata* Smith		Larkya La	3800	1, 2
402	Primulaceae	*Primula glandulifera* Balfour f & W. W Smith		Sangda	3700	1
403	Primulaceae	*Primula listeri* King		Chitrey pass	2700	1
404	Primulaceae	*Primula minutissima* Jacquem ex Duby		Larkya La	4200	1, 6.
405	Primulaceae	*Primula petiolaris* Hook. f.		Tilman camp-Pisang		1
406	Primulaceae	*Primula primulina* (Spreng.) H. Hara		Pisang - Tat pani	3000	1
407	Primulaceae	*Primula rotundifolia* Wall.				2
408	Primulaceae	*Primula sharmae* Fletcher		Tsumje	3300	1, 6.
409	Primulaceae	*Primula wigramiana* W.W. Sm.				2, 6.
410	Ranunculaceae	*Aconitum bisma* (Buch.-Ham.) Rapaics				2, 6.
411	Ranunculaceae	*Aconitum dhowjii* Lauener				2, 6.
412	Ranunculaceae	*Aconitum ferox* Wall. ex Ser.				2, 6.
413	Ranunculaceae	*Aconitum nepalense* Lauener				2, 6.
414	Ranunculaceae	*Actaea spicatum* L.				2
415	Ranunculaceae	*Anemone polyanthes* D. Don		Manaslu	4000	1, 6
416	Ranunculaceae	*Clematis barbellata* Edgew.				2
417	Ranunculaceae	*Clematis buchananiana* DC.		Timang		1, 6
418	Ranunculaceae	*Clematis grewiiflora* DC.		Thonje	2000	1
419	Ranunculaceae	*Clematis napaulensis* DC.				5
420	Ranunculaceae	*Clematis puberula* Hook.f. & Thom		Jagat - Thonje		1
421	Ranunculaceae	*Clematis smilacifolia* Wall.		Arughat Bazar		1
422	Ranunculaceae	*Delphinium altissimum* Wall.		Jagat - Thonje		1, 5.
423	Ranunculaceae	*Delphinium caeruleum* Jacq. ex Camb		Gap		1
424	Ranunculaceae	*Delphinium denudatum* Wall. ex Hook.f				2
425	Ranunculaceae	*Delphinium himalayai* Munz.				2, 6
426	Ranunculaceae	*Delphinium roylei* Munz.				5
427	Ranunculaceae	*Delphinium stapeliosum* Wall. ex P. Bruhl		Tilman camp-Pisang		1
428	Ranunculaceae	*Isopyrum adianthifolium* Hook.f. & Thomson		Chitrey pass	2100	1
429	Ranunculaceae	*Ranunculus hirtellus* Royle		Manaslu	3600	1
430	Ranunculaceae	*Thalictrum alpinum* L.		Larkya - Sama	3700	1, 2, 6
431	Ranunculaceae	*Aconitum balfouri* Stapf.				6
432	Ranunculaceae	*Aconitum heterophyllum* Wall. ex Royle				6

433	Ranunculaceae	*Aconitum orochryseum* Stapf.				6
434	Ranunculaceae	*Anemone obtusiloba* D. Don				1, 6
435	Ranunculaceae	*Anemone rupicola* Cambess.				6
436	Ranunculaceae	*Aquilegia nivalis* Flac. ex Jacks.				6
437	Ranunculaceae	*Caltha palustris* L.				6
438	Ranunculaceae	*Clematis alternata* Kitam. & Tamura				6
439	Ranunculaceae	*Clematis grata* Wall.				6
440	Ranunculaceae	*Clematis subsp. Vernayi* (C.E.C. Fischer) Grey- Wilson				6
441	Ranunculaceae	*Delphinium glaciale* Hook.f. & Thomson				6
442	Ranunculaceae	*Ranunculus pulchellus* C. A. Mey				6
443	Ranunculaceae	*Ranunculus tricuspis* Maxim.				6
444	Ranunculaceae	*Thalictrum cultratum* Wall.				6
445	Ranunculaceae	*Thalictrum elegans* Wall. ex Royle				6
446	Ranunculaceae	*Thaictrum virgatum* Hook. f. & Thomson				6
447	Ranunculaceae	*Thalictrum rotundifolium* DC.		Tsumje - Khar	2900	1
448	Rhamnaceae	*Berchemia edgeworthii* M. A. Lawson				6
449	Rhamnaceae	*Berchemia lineata* DC.		Tilmancamp-Thonje		1
450	Rhamnaceae	*Rhamnus virgatus* Roxb.	Bhalu kanda	Gab - Lana	2100	1, 5.
451	Rhamnaceae	*Zizyphus incurva* Roxb.	Hade bayar	Jagat - Hodoban	1500	1, 5.
452	Rhamnaceae	*Zizyphus mauritiana* Lamarck		Khudi - Jagat		1
453	Rosaceae	*Aruncus dioicus* (Walter) Fernald				6
454	Rosaceae	*Cotoneaster coriaceus* Franch.	Ruish			5
455	Rosaceae	*Cotoneaster duthieanus* (C. K. Schneid.) Klotz.		Manaslu	3700	1
456	Rosaceae	*Cotoneaster frigidus*Wall. ex Lindley				2,5.
457	Rosaceae	*Cotoneaster hebephyllus* Diels.				5
458	Rosaceae	*Cotoneaster microphyllus* Wall. ex Lindley	Pribi	Namla Gumba	2710	2, 5, 6
459	Rosaceae	*Cotoneaster rotundifolius*Wall. ex Lindley		Manaslu	3700	1
460	Rosaceae	*Fragaria nubicola* Lindley				2, 6
461	Rosaceae	*Malus baccata* Borkhausen		Samagaun	3200	1
462	Rosaceae	*Potentilla ambigua* Camb.		Samagaun	3200	1
463	Rosaceae	*Potentilla cuneata* Wall. ex Lehm.				2, 6
464	Rosaceae	*Potentilla eriocarpa* Wall. ex Lehm.		Tsumje	3200	1
465	Rosaceae	*Potentilla leschenaultiana* Ser.		Tsumje	3300	1
466	Rosaceae	*Potentilla multifida* L.		Pisang - Tat pani	2900	1
467	Rosaceae	*Prunus cornuta* (Royle) Steudel		Ulleri	2100	1, 6
468	Rosaceae	*Prunus himalaica* Kitam.		Chum Gompa	3900	1, 6
469	Rosaceae	*Rosa brunonii* Lindley	Bhainshi Kandha	Gap	2200	1, 5, 6.
470	Rosaceae	*Rubus biflorus* Buch.- Ham ex Sm.	Sanu gulpha			5, 6
471	Rosaceae	*Rubus ellipticus* Sm.	Aainselu			5, 6
472	Rosaceae	*Rubus niveus* Thunb	Kalo Aainselu	Gap	2550	5
473	Rosaceae	*Rubus rugosus* Sim.		Khudi -Jagat	1000-1800	1

474	Rosaceae	*Rubus seminepalensis* Naruh.				1
475	Rosaceae	*Sibbaldia cuneata* Hornem. ex Kuntze				5
476	Rosaceae	*Sibbaldia adpressa* Bunge.		Samdo	3800	2
477	Rosaceae	*Sorbaria tomentosa* (Lindl.) Rehder		Namru	2700	1, 6
478	Rosaceae	*Sorbus foliolosa* (Wall.) Spach.				1, 2, 6
479	Rosaceae	*Sorbus lanata* (D. Don) Schauer				2, 6
480	Rosaceae	*Sorbus rhamnoides* (Decne.) Rehder				5
481	Rosaceae	*Spiraea arcuata* Hook.f.		Samagaun	3200	1, 6
482	Rosaceae	*Spiraea canescens* D.Don		Namru	2700	1, 6
483	Rosaceae	*Spiraea hypericifolia* L.		Pisang – Tat pani	3100	1
484	Rosaceae	*Geum elatum* Wall. ex G. Don				6
485	Rosaceae	*Potentilla anserine* L.				6
486	Rosaceae	*Potentilla atrosanguinea* Lodd.				6
487	Rosaceae	*Potentilla biflora* Willd. ex Schltr.				6
488	Rosaceae	*Potentilla coriandrifolia* D. Don				6
489	Rosaceae	*Potentilla curviseta* Hook. f.				6
490	Rosaceae	*Potentilla peduncularis* D. Don				6
491	Rosaceae	*Prunus cerasoides* D. Don				6
492	Rosaceae	*Prunus napaulensis* (Ser.) Steud.				6
493	Rosaceae	*Pyrus pashia* Buch.- Ham. ex D. Don				6
494	Rosaceae	*Rosa macrophylla* Lindl.				6
495	Rosaceae	*Rubus hypargyrus* Edgew.				6
496	Rosaceae	*Spiraea micrantha* Hook. f.		Gap	2200	1
497	Rubiaceae	*Galium aparine* L.		Tsumje	3300	1
498	Rubiaceae	*Galium asperuloides* Edgew.		Chum Gompa	3600	1
499	Rubiaceae	*Galium paradoxum* Maxim				2
500	Rubiaceae	*Spermadictyon suaveolens* Roxb.		Khudi - Jagat	1000-1800	1
501	Rubiaceae	*Knoxia corymbosa* Willd.	Dobine	Philim	1200	1
502	Rubiaceae	*Leptodermis lanceolata* Wall.		Ngile	3400	1
503	Rubiaceae	*Luculia gratissima* Sweet	Ban Kangiyo	Khudi - Jagat	1000-1800	1, 5.
504	Rubiaceae	*Ophiorrhiza fasciculata* Don		Jagat	1200	1
505	Rubiaceae	*Ophiorrhiza rugosa* Wall.		Jagat - Hosdoban	1600	1
506	Rubiaceae	*Pavetta indica* L.	Takali	Hosdoban	1300	1
507	Rubiaceae	*Leptodermis stapfiana* H. Winkl.				6
508	Rubiaceae	*Skimmia laureola* (DC.) Sieb. & Zucc. X Walp.				6
509	Rutaceae	*Aegle Marmelos* Correa		Arughat Bazar		1
510	Rutaceae	*Zanthoxylum tomentellum* Hook.f.	Timur			5
511	Sabiaceae	*Meliosma dilleniifolia* Wall. ex Walp.		Timang	2700	5
512	Sabiaceae	*Meliosma simplicifolia* (Roxb.) Walp.				5
513	Salicaceae	*Salix babylonica* L.	Bainsh			5, 6
514	Salicaceae	*Salix calyculata* Hook. f. ex Andersson				2, 6
515	Salicaceae	*Salix daltoniana* Andersson				2, 6
516	Sambucaceae	*Viburnum grandiflorum* Wall. ex DC.				6

517	Sambucaceae	*Viburnum buddleifolium* C. H. Wright				5
518	Sambucaceae	*Viburnum erubescens* Wall.	Ganamane			5, 6
519	Sambucaceae	*Viburnum* sp.	Goloshi			5
520	Santalaceae	*Thesium himalense* Royle		Pisang - Tat pani	2900	1
521	Sapindaceae	*Cardiospermum helicacabum* L.				6
522	Sapindaceae	*Sapindus mukorossi* Gaertn.				6
523	Saurauiaceae	*Saurauia napaulensis* DC.				6
524	Saxifragaceae	*Chrysosplenium lanuginosum* Hook. f. & Thomson		Chitrey pass	2400	1
525	Saxifragaceae	*Chrysosplenium uniflorum* Maximowicz		Chaikia	4100	1
526	Saxifragaceae	*Chrysosplenium nudicaule* Bunge				6
527	Saxifragaceae	*Saxifraga asarifolia* Sternb.				6
528	Saxifragaceae	*Saxifraga brunonis* Wall. ex Ser.				6
529	Saxifragaceae	*Saxifraga pulvinaria* H. Sm.				6
530	Saxifragaceae	*Saxifraga punctulata* Engl.				6
531	Saxifragaceae	*Saxifraga pseudo- pallida* Engler. & Irmscher		Kalum - Mura Dajen pass	3800	1, 6
532	Saxifragaceae	*Saxifraga poluninana* H. Sm				2, 6
533	Saxifragaceae	*Saxifraga quadrifaria* Engler & Irmscher		Manaslu	4100	1
534	Saxifragaceae	*Saxifraga stolitzake* Duthie ex Engler & Irmscher		Keha Lungpa	3900	1
535	Saxifragaceae	*Tiarella polyphylla* D. Don		Chitrey pass	2400	1
536	Schisandraceae	*Schisandra propinqua* (Wall.) Baill	Pahenlo singulto			5
537	Scrophulariaceae	*Lagotis kunawurensis* (Royle) Ruprecht		Kalun - Mura Dajen pass	4000	1, 6.
538	Scrophulariaceae	*Lindenbergia grandiflora* Benth.		Ngyak - Arughat		1
539	Scrophulariaceae	*Mazus surculosus* Don		Tsumje	3300	1, 6.
540	Scrophulariaceae	*Mimulus nepalensis var. procerus* Benth.		Sarte	2100	1, 6.
541	Scrophulariaceae	*Neopicrorhiza scrophulariiflora* (Pennell) Hong				2, 6.
542	Scrophulariaceae	*Pedicularis breviflora* Don		Chhokang	2150	1
543	Scrophulariaceae	*Pedicularis breviscaposa* Yamazaki		Tat Pani - Pisang	3100	1
544	Scrophulariaceae	*Pediicularis hoffmeisteri* Klotzsch ex Klotzsch		Dhorzhong - Tsumdung	3000	1, 6.
545	Scrophulariaceae	*Pedicularis hookeriana* Wall.		Tsumje	3400	1
546	Scrophulariaceae	*Pedicularis longiflora* Rudolph		Chum Gompa	3600	1, 6.
547	Scrophulariaceae	*Pedicularis microcalyx* Hook. f.		Kalun - Mura Dajen pass	3800	1
548	Scrophulariaceae	*Pedicularis oeder***i** Vahl.				6
549	Scrophulariaceae	*Pedicularis poluninii* Tsoong				1, 6.
550	Scrophulariaceae	*Pedicularis pseudoregeliana* Tsoong				2, 6
551	Scrophulariaceae	*Pedicularis roylei* Maxim.		Chum Gompa	3700	1
552	Scrophulariaceae	*Pedicularis scullyana* Prain ex Maxim.				6
553	Scrophulariaceae	*Pedicularis trichoglossa* Hook. f.				6
554	Scrophulariaceae	*Pedicularis wallichii* Bunge				2, 6.

555	Scrophulariaceae	*Scrophularia decomposita* Royle ex Benth.		Samagaun	3200	1
556	Scrophulariaceae	*Thunbergia coccinea* Wall.		Arughat Bazar		1
557	Scrophulariaceae	*Verbascum thapsus* L.		Samagaun	3300	1, 6.
558	Scrophulariaceae	*Veronica cephaloides* Pennell		Tsumje	3600	1
559	Scrophulariaceae	*Veronica lanosa* Royle		Dhorzhong - Tsumdung	3300	1
560	Simaroubaceae	*Brucea mollis* Wall. ex Kurz				5
561	Simaroubaceae	*Picrasma quassioides* (Don) Benn		Gap	2500	1
562	Solanaceae	*Scopolia stramonifolia* (Wall.) Shrestha		Samagaun	3500	1
563	Solanaceae	*Datura stramonium* L.				6
564	Solanaceae	*Nicandra physalodes* (L.) Gaertn				6
565	Solanaceae	*Physalis angulata* L.		Jagat	1700	1
566	Solanaceae	*Solanum violaceum* Ortega				6
567	Symplocaceae	*Symplocos paniculata* (Thunb.) Miq.	Lodh			5
568	Symplocaceae	*Symplocos ramoisissima* Wall. ex Don	Dabdabe			5
569	Symplocaceae	*Symplocos* sp.				6
570	Tamaricaceae	*Myricaria rosea* W. W. Sm		Tat Pani - Pisang	3000	1, 6.
571	Tamaricaceae	*Myricaria squamosa* Desv.				6
572	Theaceae	*Camellia kissi* Wall.				6
573	Theaceae	*Eurya cerasifolia* (D. Don) Kobuski				6
574	Theaceae	*Eurya* sp.				5
575	Theaceae	*Eurya trichocarpa* Korth.	Jhigane			5
576	Theaceae	*Schima wallichii* Choisy	Chilauni	Near Ulleri	1400	1, 6.
577	Thymelaeaceae	*Daphne bholua* Ham. ex Don		Sama - Kal Tal		1, 6.
578	Thymelaeaceae	*Daphne papyracea* Wall.	Lokta			5, 6
579	Thymelaeaceae	*Stellera chamaejasme* L.				6
580	Thymelaeaceae	*Wikstroemia canescens* Meisn		Lih Dhanra	3000	1, 6.
581	Tiliaceae	*Triumfetta rhomboides* Jacq.		Lapu	1000	1
582	Toricelliaceae	*Toricellia tiliifolia* DC.				6
583	Trilliaceae	*Paris polyphylla* Sm.				6
584	Ulmaceae	*Celtis australis* L.		Ngyak - Arughat		1
585	Ulmaceae	*Ulmus wallichiana* Planchon	Dhamina	Along Buri Gandaki		1, 5, 6.
586	Urticaceae	*Debregeasia longifolia* Wedd.		Jagat - Thonje		1
587	Urticaceae	*Debregeasia salicifolia* (D.Don) Rendle	Tushare			5, 6.
588	Urticaceae	*Elatostema sessile* Forster		Sarti	2010	1
589	Urticaceae	*Elatostema monandrum* (Buch.-Ham. ex D. Don) H. Hara		Sarti	2100	1
590	Urticaceae	*Girardinia diversifolia* (Link) Friis	Thulo sisno			5, 6.
591	Urticaceae	*Gonostegia hirta* Miquel		Gumurung - Sarti	2200	1
592	Urticaceae	*Laportea terminalis* Wight		Tsumje	3300	1
593	Urticaceae	*Pilea approximata* Clarke		Karche - Hangbu	3100	1
594	Urticaceae	*Pouzolzia sanguinea* (Blume) Merr.		Sarti	2200	1
595	Urticaceae	*Urtica parviflora* Roxb.	Schusno	Tsumje	3300	1
596	Valerianaceae	*Nardostachys grandiflora* DC.				2, 6.
597	Valerianaceae	*Valeriana jatamansi* Jones		Timang	2700	1

598	Verbenaceae	*Clerodendron colebrookianum* Walp.		Arughat Bazar	625	1
599	Verbenaceae	*Holmskioldia sanguinea* Retz.		Ngyak - Arughat		1
600	Violaceae	*Viola betonicifolia* Sm.				6
601	Violaceae	*Viola kunawarensis* Royle		Keha Lungpa	3900	1
602	Violaceae	*Viola wallichiana* Gingins		Ripche	2400	1
603	Vitaceae	*Ampelocissus rugosa* (Wall.) Planch.	Pureni	Gumurung to Sarti	2200	1, 6
604	Vitaceae	*Cayratia japonica* (Thunb.) Gagnep		Kal Tal - Ngyak		1
605	Vitaceae	*Parthenocissus semicordata* (Wall.) Planch		Tilman camp - Thonje		1
606	Vitaceae	*Vitis lanata* Roxb.		Gap	2200	1
607	Vitaceae	*Vitis pedicellata* Lawson		Gap	2200	1
MONOCOTYLEDONS						
1	Amaryllidaceae	*Allium hypsistum* Stearn				6
2	Amaryllidaceae	*Allium prezewalskianum* Regel				2, 6.
3	Amaryllidaceae	*Allium sikkimense* Bake				6
4	Amaryllidaceae	*Allium victorialis* L.		Manaslu	3700	1
6	Araceae	*Acorus calamus* L.				6
7	Araceae	*Arisaema concinnum* Schott.				6
8	Araceae	*Arisaema consanguineum* Schott.				6
9	Araceae	*Arisaema costatum* (Wall.) Mart. ex Schott.				6
10	Araceae	*Arisaema erubescens* (Wall.) Schott.				6
11	Araceae	*Arisaema flavum* (Forssk.) Schott.				6
12	Araceae	*Arisaema griffithii* Schott.				6
13	Araceae	*Arisaema intermedium* Blume				6
14	Araceae	*Arisaema jacqquemontii* Blume				2, 6.
16	Araceae	*Arisaema utile* Hook. f. ex Schott.				6
17	Araceae	*Arisaema wallichianum* Hook		Karche - Hangbu	3000	1
19	Araceae	*Rhaphidophora decursiva* (Roxb.) Schott.				6
20	Araceae	*Typhonium diversifolium* Wall. ex Schott.				
22	Commelinaceae	*Cyanotis vaga* (Lour.) J. A. & J. H. Schult.				6
23	Cyperaceae	*Carex atrofusca* Schkuhr				1
24	Cyperaceae	*Carex crunenta* Nees				2
26	Cyperaceae	*Carex gracilenta* Bott ex Strachey				2
27	Cyperaceae	*Carex meiogyna* Nees		Gumurung - Sarti	2200	1
28	Cyperaceae	*Carex munda* Boott.		Dhorzhong - Tsumdung	3200	1
29	Cyperaceae	*Carex nubigea* D. Don		Chhumdung	3000	1
30	Cyperaceae	*Carex pisanensis* T. Koyama		Samagaun	3200	1
31	Cyperaceae	*Carex rufulistolon* T. Koyama		Pisang - Tat pani	3100	1
32	Cyperaceae	*Carex schlagintweitiana* Boeck		Tsumje	3200	1
33	Cyperaceae	*Cyperus cyperoides* O. Kuntze	Ghndu	Philim	1750	1
34	Cyperaceae	*Cyperus rotundus* L.				6
36	Cyperaceae	*Kobresia duthiei* C. B. Clarke				2
37	Cyperaceae	*Kobresia fragilis* C. B. Clarke				2
39	Cyperaceae	*Kobresia gandakiensis* Rajb. & H. Ohba				6
40	Cyperaceae	*Kobresia laxa* Nees				2

41	Cyperaceae	*Kobresia nepalensis* (Nees) Kuk				2, 6
47	Iridaceae	*Iris clarkei* Baker ex Hook. f.				2, 6.
49	Iridaceae	*Iris kemaonensis* Wall. ex Don				2
50	Iridaceae	*Iris decora* Wall.		Manaslu	4000	2
51	Iridaceae	*Iris stantonii* H. Hara				1, 6.
56	Melanthiaceae	*Aletris pauciflora* (Klotzsch) Hand-Mzt.		Manaslu	4000	1, 6.
57	Melanthiaceae	*Aletris sikkimensis* Hook. f.		Tsumdung	3100	1
60	Liliaceae	*Cardiocrinum giganteum* (Wall.) Makino	Ghiyupat			5, 6.
61	Liliaceae	*Chlorophytum nepalense* Baker		Chhokang - Thomje	2800	1
62	Liliaceae	*Clintonia udensis* Trautv. & Meyer		Hamgbu	3300	1, 6.
63	Liliaceae	*Disporum cantoniensis* Merr.		Namrung	2700	1
65	Liliaceae	*Gagea elegans* Wall. ex D. Don				6
66	Liliaceae	*Nomocharis oxypetala* (D.Don) E.H.Wilson		Manaslu	3700	1
69	Liliaceae	*Lilium wallichianum* Schultes.		Lana - Dhorzhong	2300	1
70	Liliaceae	*Lloydia flavonutans* H. Hara				6
71	Liliaceae	*Lloydia longiscapa* Hook.				6
72	Liliaceae	*Notholirion macrophyllum (*Don) Bois		Thomje - Tsumje	3000	1, 6.
75	Liliaceae	*Paris polyphylla* Smith		Thomje - Ripche	2500	1, 5
77	Liliaceae	*Polygonatum hookeri* Baker				2, 6.
78	Liliaceae	*Polygonatum multiflorum* (L.) All.	Sitaa mulaa			2, 6.
79	Liliaceae	*Polygonatum oppositifolium* Royle		Gap	2200	5
80	Liliaceae	*Polygonatum verticillatum* Allioni		Samagaun	3200	1, 2, 6.
81	Liliaceae	*Porana grandiflora* Wall.				6
83	Liliaceae	*Smilacina pallida* Royle		Dhorzhong - Tsumdung	2900	1
85	Liliaceae	*Smilax glaucophylla* Klotzsch		Gap	2200	1
87	Liliaceae	*Smilax menispermoidea* A. DC.				2
91	Orchidaceae	*Arundina graminifolia* (Don) Hochr.		Tatpani		1
95	Orchidaceae	*Coelogyne cristata* Lindl.				6
96	Orchidaceae	*Cymbidium longifolium* D. Don				6
98	Orchidaceae	*Coeloglossum viride* (L.) Hartm.				1
99	Orchidaceae	*Cypripedium cordigerum* Don		Tsumje	3400	1, 6.
100	Orchidaceae	*Cypripedium elegans* Reich.f.		Manaslu	3700	1, 6.
101	Orchidaceae	*Cypripedium himalaicum* Rolfe apud Hemsl.		Ngile	3400	1, 6.
102	Orchidaceae	*Dactylorhiza hatagirea* (D. Don) Soo				1, 6.
103	Orchidaceae	*Dendrobium amoenum* Wall. ex Lindl.				6
104	Orchidaceae	*Dendrobium transparens* Wall. ex Lindl.				6
107	Orchidaceae	*Eria alba* Lindley		Lana	2100	1
108	Orchidaceae	*Eulophia dabia* (D. Don) Hochr.				6
111	Orchidaceae	*Goodyera fusca* (Lindl.) Hook. f.				6
112	Orchidaceae	*Goodyera repens* (L.) R. Br				6
113	Orchidaceae	*Gymnadenia conopsea* R. Br		Bangu Khola	3800	1
114	Orchidaceae	*Habenaria aitchisonii* Raich.f.		Bangu Khola	3500	1, 6.
115	Orchidaceae	*Platanthera clavigera* Lindl.				1
116	Orchidaceae	*Habenaria intermedia* Don		Gumurung -	2200	1

				Sarti		
118	Orchidaceae	*Hemipilia cordifolia* Lindley		Gumurung - Sarti	2200	1
119	Orchidaceae	*Herminium macrophyllum (*D. Don) Dandy		Dhorzhong - Tsumdung	3200	1
121	Orchidaceae	*Herminium monorchis* (L.) R. Br.				6
122	Orchidaceae	*Neottianthe calcicola* (W. W. Sm.) Schltr.				6
124	Orchidaceae	*Oreorchis foliosa* (Lindl.) Lindl.				6
125	Orchidaceae	*Pholidota imbricata* Hook.				6
126	Orchidaceae	*Platanthera edgeworthii* (Hook. f. ex Collett) R. K. Gupta				6
127	Orchidaceae	*Platanthera latilabris* Lindl.				6
128	Orchidaceae	*Pleione humilis* (Sm.) D. Don				6
129	Orchidaceae	*Rhynchostylis retusa* (L.) Blume				6
130	Orchidaceae	*Satyrium ciliatum* Lindl.				6
132	Orchidaceae	*Spathoglottis ixioides* Lindley		Gumurung - Sarti	2300	1, 4.
133	Orchidaceae	*Spiranthes sinensis* (Pres.) Ames		Gumurung - Sarti	2300	1
134	Orchidaceae	*Vanda cristata* Lindl.				6
137	Poaceae	*Arundinella hookeri* Munro ex Hooker		Chhundung	3100	1, 2.
138	Poaceae	*Avena sativa* L.				6
139	Poaceae	*Axonopus compressus* (Sw.) P. Beauv				6
140	Poaceae	*Brachypodium sylvaticum* (Huds) Beauv.		Samagaun	3400	1
142	Poaceae	*Cynodon dactylon* (L.) Pers				6
143	Poaceae	*Drepanostachyum falcatum* (Nees) Keng f.	Sano Nigalo			2
144	Poaceae	*Eulaliopsis binata* (Retz.) C. E. Hubb.				6
145	Poaceae	*Festuca leptopogon* Stapf		Gumurung – Sarte	2100	5
146	Poaceae	*Himalayacalamus hookerianus* (Munro) Stapleton	Nigalo			1
147	Poaceae	*Imperata cylindrica* (L.) P. Beauv.				6
148	Poaceae	*Koeleria cristata* (L.) Pers.		Ngachu	3300	5
149	Poaceae	*Microstegium nudum* (Trin.) A. Camus		Above Samagaun	3690	1
151	Poaceae	*Pennisetum hohenackeri* Hochst. ex Steud.		Namrung	2600	1
153	Poaceae	*Poa tibetica* Munro ex Stapf		Dhorzhong	2900	1
154	Poaceae	*Thysanolaena maxima* (Roxb.) Kuntze				6
156	Potamogetonaceae	*Potamogeton polygonifolius* Pourr.		Tatpani		1
158	Zingiberaceae	*Curcuma aromatica* Salisb.				6
159	Zingiberaceae	*Hedychium coccineum* Hamilton ex Smith	Panisalo	Hosdoban	1300	4
160	Zingiberaceae	*Hedychium ellipticum* Buch.-Ham. ex Sm.				6
161	Zingiberaceae	*Hedychium spicatum* Sm.				6
162	Zingiberaceae	*Roscoea alpina* Royle		Namrung	2700	1

Note* Kitamura (1953) – **1,** Chhetri R. (2011) – **2,** UGC Grant (2011-2013) – **3,** Nepal Database (2013) – **4,** Shrestha S. (2012) – **5,** NTNC/MCAP (2013) - **6**

Appendix III: Additional Flowering Plants from Arughat (500m) – Jagat (1400m)

S.N	Family	Latin name
1	Acanthaceae	*Justicia adhatoda* L.
2	Alangiaceae	*Alangium chinense* (Lour.) Harms
3	Amaranthaceae	*Amaranthus spinosus* L.
4	Amaranthaceae	*Amaranthus viridis* L.
5	Anacardiaceae	*Choerospondias axillaris* (Roxb.) B. L. Burtt & A. W.
6	Anacardiaceae	*Mangifera indica* L.
7	Apiaceae	*Hydrocotyle himalaica* P.K. Mukh
8	Apiaceae	*Selinum tenuifolium* Wall. ex C.B. Clarke
9	Apocynaceae	*Plumeria rubra* L.
10	Araliaceae	*Brassiopsis palmata (*Roxb.) Kruz
11	Araliaceae	*Schefflera elliptica* Harms.
12	Asteraceae	*Bidens pilosa* L.
13	Asteraceae	*Eupatorium odoratum* L.
14	Asteraceae	*Crassocephalum crepidioides* (Benth.) S. Moore.
15	Asteraceae	*Echinops cornigerus* DC.
16	Asteraceae	*Eclipta prostrata* (L.) L.
17	Asteraceae	*Guizotia abyssinica* (L.f.) Cass
18	Asteraceae	*Tagetes patula* L.
19	Asteraceae	*Xanthium strumarium* L.
20	Bignoniaceae	*Oroxylum indicum* (L.) Vent.
21	Caryophyllaceae	*Drymaria diandra* Blume
22	Convolvulaceae	*Ipomoea purpurea* (L.) Roth
23	Cyperaceae	*Cyperus niveus* Retz.
24	Dipterocarpaceae	*Shorea robusta* Gaertn.
25	Euphorbiaceae	*Bridelia retusa* (L.) Spreng.
26	Euphorbiaceae	*Jatropha curcas* L.
27	Euphorbiaceae	*Sapium baccatum* Roxb.
28	Fabaceae	*Dalbergia sisso* Roxb. ex DC.
29	Fagaceae	*Castanopsis tribuloides* (Smith) A. DC.
30	Flacourtiaceae	*Xylosma controversum* Clos.
31	Labiatae	*Colebrookea oppositifolia* Sm.
32	Labiatae	*Salvia lanata* Roxb.
33	Lauraceae	*Litsea monopetala* (Roxb.) Pers
34	Lauraceae	*Machilus odoratissima* Nees
35	Leeaceae	*Leea aequata* L.
36	Fabaceae	*Albizia chinensis* (Osbeck.) Merr.
37	Fabaceae	*Albizia lebbeck* (L.) Benth
38	Fabaceae	*Bauhinia purpurea* L.
39	Fabaceae	*Bauhinia vahlii* Wight & Arn.
40	Fabaceae	*Cassia tora* L.
41	Fabaceae	*Crotalaria cytisoides* Roxb. ex DC.
42	Fabaceae	*Desmodium microphyllum* (Thunb.)DC.
43	Fabaceae	*Erythrina stricta* Roxb.
44	Fabaceae	*Entada phaseoloides* (L.) Merr
45	Fabaceae	*Mimosa rubicaulis* Lam.

46	Lythraceae	*Lagerstroemia parviflora* Roxb.
47	Lythraceae	*Woodfordia fruticosa* (L.) Kurz.
48	Malvaceae	*Sida rhombifolia* L.
49	Melastomataceae	*Melastoma normale* D.Don
50	Moraceae	*Artocarpus lakoocha* Wall. ex Roxb
51	Moraceae	*Ficus hederacea* Roxb.
52	Moraceae	*Ficus lacor* Buch.- Ham.
53	Moraceae	*Ficus religiosa* L.
54	Moraceae	*Ficus semicordata* Buch.- Ham. ex Smith
55	Moraceae	*Morus alba* L.
56	Musaceae	*Musa paradisiaca* L
57	Myrtaceae	*Syzigium cumini* (L.) Skeels
58	Oleaceae	*Fraxinus micrantha* Lingelsh
59	Onagraceae	*Ludwigia parviflora* Roxb.
60	Poaceae	*Bambusa arundinacea* (Retz.) Willd.
61	Poaceae	*Eleusine indica* (L.) Gaertn
62	Poaceae	*Paspalum distichum* L.
63	Polygonaceae	*Polygonum minus* Hudson
64	Rosaceae	*Prunus davidiana* (Carriere) Franchet
65	Rubiaceae	*Coffea benghalensis* Heyne ex Roemer & Schultes
66	Rubiaceae	*Wendlandia puberula* DC.
67	Sapotaceae	*Aesandra butyracea* (Roxb.) Baehni
68	Scrophulariaceae	*Torenia cordata* L.
69	Solanaceae	*Physochlaina praealta* (Decne.) Miers
70	Solanaceae	*Solanum indicum* L.
71	Solanaceae	*Solanum tuberosum* L.
72	Tiliaceae	*Grewia disperma* Rottb.
73	Urticaceae	*Elatostema platyphyllum* Wedd.
74	Urticaceae	*Maoutia puya* (Hook.f.) Wedd.
75	Verbenaceae	*Callicarpa arborea* Roxb.
76	Verbenaceae	*Clerodendron infortunatum* L
77	Verbenaceae	*Premmna interrupta* Wall. ex Schauer
78	Violaceae	*Viola pilosa* Blume
79	Zingiberaceae	*Costus speciosus* (Konig) Smith

Appendix IV: Additional Flowering Plants from Jagat (1400 m) – Gap (2200 m)

S.N.	Family	Latin name
1	Asclepiadaceae	*Hoya fusca* Wall.
2	Asteraceae	*Dichrocephala benthamii* C. B. Clarke
3	Gesneriaceae	*Rhynchoglossum obliquum* Blume
4	Malvaceae	*Malva sylvestris* L.
5	Myrsinaceae	*Ardisia thyrsiflora* D. Don
6	Nyctaginaceae	*Mirabilis jalapa* L.
7	Poaceae	*Setaria geniculate* Beauv.
8	Polygonaceae	*Fagopyrum tataricum* (L.) Gaertn
9	Rosaceae	*Prunus cerasoides* D.Don
10	Rosaceae	*Rubus nepalensis* (Hook.f.) Kuntze
11	Solanaceae	*Nicotiana tabacum* L.

Appendix V: Additional Flowering Plants from Samagaun (3400 m) - Larke Pass (5200 m)

S.N.	Family	Latin name
1	Caryophyllaceae	*Arenaria bryophylla* Fernald
2	Cyperaceae	*Kobressia pygmaea* (C.B.Clarke) C.B. Clarke
3	Gentianaceae	*Gentiana tubiflora* (G. Don) Griseb.
4	Ranunculaceae	*Aconitum gammiei* Stapf.

Appendix VI: Endemic Flowering Plants of Gorkha District

S.N	Family	Latin name	Altitude (m)	Localities	Reference
1	Asteraceae	*Leontopodium makianum* Kitam.	4000	Thaple Himal, *Nakao* s. n. (Holotype, KYO)	Kitamura (1953)
2	Asteraceae	*Saussurea dhowjii* Kitam.	4500	Pongsing, *Dhwoj* 126 (Holotype BM)	Kitamura (1979)
3	Cyperaceae	*Carex rufulistolon* T. Koyama	3100	Pisang- Tatpani, *Nakao* s.n. (Holotype, KYO)	T. Koyama (1954)
4	Euphorbiaceae	*Croton nepalensis* T. Kuros	970	Tatopani to Dovan, *M. Suzuki et al.* 9455100 (Holotype, TI)	T. Kuros (2004)
5	Fabaceae	*Astragalus nakaoi* Kitam.	3800	Manaslu, *S. Nakao* s. n. (Holotype, KYO)	Kitamura (1957)
6	Fabaceae	*Hedysarum manaslense* (Kitam.) H. Ohashi	3800	Manaslu, *S. Nakao* s. n. (Holotype of *Astragalus manaslensis*,KYO)	H. Ohashi (1975)
7	Papaveraceae	*Meconopsis regia* G. Taylor	3900	Barpak, *Dhwoj* 18 (Holotype BM)	G. Taylor (1929)
8	Papaveraceae	*Meconopsis manasluensis* P. Egan	ca. 4000	Manaslu Himal, east of Samdo, *Ikeda et al.* 20815156 (Holotype E)	Egan (2011)
9	Rosaceae	*Prunus himalaica* Kitam.	3900	Chum Gumba, *S. Nakao* s.n. (Holotype, KYO)	Kitamura (1954)
10	Scrophulariaceae	*Pedicularis breviscaposa* T. Yamaz	3100	Pisang- Tatpani, *S. Nakao* s.n. (Holotype, KYO)	T. Yamaz (1954)

Appendix VII: Economic plant resources of MCA and adjoining areas

S.N.	Family	Latin name	Local name	Medicinal	Fodder	Fuel wood	Edible	Religious purposes	Construction	Ornamental	Miscellaneous
1	Acanthaceae	*Justicia adhatoda* L.	Asuro	√							
2	Aceraceae	*Acer acuminatum* Wall. ex D. Don	Kanchiro			√					
3	Aceraceae	*Acer caesium* Wall. ex Brandis	Kanchiro			√					
4	Alangiaceae	*Alangium chinense* (Lour.) Harms	Phir phire	√						√	
5	Amaranthaceae	*Amaranthus spinosus* L.	Van lunde	√							
6	Amaranthaceae	*Amaranthus viridis* L.	Lunde				√				
7	Amaryllidaceae	*Allium wallichii* Kunth.	Lasun Saag				√				
8	Anacardiaceae	*Choerospondias axillaris* (Roxb.) B. L. Burtt & A. W. Hill	Amali				√				
9	Anacardiaceae	*Mangifera indica* L.	Ampa	√							
10	Apiaceae	*Hydrocotyle himalaica* P.K. Mukh	Taapre	√							
11	Apiaceae	*Selinum tenuifolium* Wall. ex C.B. Clarke	Bhajandari	√							
12	Apocynaceae	*Plumeria rubra* L.	Golanchi	√							
13	Aquifoliaceae	*Ilex dipyrena* Wall.	Seto khasru		√	√					
14	Araliaceae	*Brassaiopsis palmata (*Roxb.) Kruz	Dangdinge		√						
15	Araliaceae	*Schefflera elliptica* Harms.		√							
16	Araliaceae	*Hedera nepalensis* K. Koch	Kathe laharo	√							
17	Asteraceae	*Cirsium verutum* (D. Don) Spreng	Sungure kanda	√							
18	Asteraceae	*Senecio cappa* Buch.- Ham ex D. Don	Marcha					√			
19	Asteraceae	*Bidens pilosa* L.	Kalo kuro	√							
20	Asteraceae	*Eupatorium odoratum* L.	Aule Banmara	√							
21	Asteraceae	*Crassocephalum crepidioides* (Benth.) S. Moore.	Anikale jhar				√				
22	Asteraceae	*Echinops cornigerus* DC.			√						
23	Asteraceae	*Eclipta prostrata* (L.) L.	Bhangeri jhar	√							
24	Asteraceae	*Guizotia abyssinica* (L.f.) Cass.	Krisna guru								√

25	Asteraceae	*Tagetes patula* L.	Sayapatri	√							
26	Asteraceae	*Xanthium strumarium* L.	Kastolo	√							
27	Asteraceae	*Dichrocephala benthamii* C. B. Clarke	Chhiuke jhar	√							
28	Berberidaceae	*Podophyllum hexandrum* Royle	Laghupatra	√							
29	Betulaceae	*Alnus nepalensis* D. Don	Utis			√			√		
30	Betulaceae	*Betula alnoides* Buch.- Ham. ex D. Don	Lekh painu	√		√			√		
31	Betulaceae	*Betula utilis* D. Don	Bhoj patra			√		√			
32	Bignoniaceae	*Oroxylum indicum* (L.) Vent.	Karamkand	√							
33	Boraginaceae	*Cynoglossum zeylanicum* (Vahl. ex Hornem.) Thunb. ex Lehm.	Kanike kuro	√							
34	Brassicaceae	*Rorippa nastracium- aquaticum (*L.) Hayek	Sim rayo				√				
35	Buxaceae	*Sarcococca saligna* (D. Don) Mull. Arg	Phitphiya	√	√						
36	Caryophyllaceae	*Drymaria diandra* Blume	Abijalo	√							
37	Clusiaceae	*Hypericum hookeranum* Wight & Arn.	Doli phul			√					
38	Convolvulaceae	*Cuscuta reflexa* Roxb.	Aakasbeli	√							
39	Convolvulaceae	*Ipomoea purpurea* (L.) Roth.								√	
40	Coriariaceae	*Coriaria napalensis* Wall.	Macchaino			√	√				
41	Cucurbitaceae	*Coccinia grandis* (L.) Voig.	Gol kakri	√							
42	Cupressaceae	*Juniperus indica* Bertol.	Dhupi	√		√					
43	Cupressaceae	*Juniperus squamata* Buch.- Ham. ex D. Don	Dhupi	√							
44	Cyperaceae	*Cyperus niveus* Retz.	Seto mothe	√							
45	Cyperaceae	*Kobressia pygmaea* (C.B.Clarke) C.B. Clarke									√
46	Dioscoreaceae	*Dioscorea bulbifera* L.	Ban Tarul				√				
47	Dioscoreaceae	*Dioscorea deltoidea* Wall ex Kunth	Bhyakur				√				
48	Dioscoreaceae	*Dioscorea hispida* Dennst.					√				

49	Dipterocarpaceae	*Shorea robusta* Gaertn.	Sal	√							
50	Ephedraceae	*Ephedra gerardiana* Wall. ex Stapf	Somlata					√			
51	Ericaceae	*Lyonia ovalifolia* (Wall.) Drude	Angeri	√		√					
52	Ericaceae	*Pieris formosa* (Wall.) Drude	Lek Angeri	√							
53	Ericaceae	*Rhododendron anthopogon* D. Don	Sunapati	√		√		√			
54	Ericaceae	*Rhododendron barbatum* Wall. ex G. Don	Rato Chimal			√				√	
55	Ericaceae	*Rhododendron campanulatum* D. Don	Cheriala			√					
56	Ericaceae	*Rhododendron lepidotum* Wall. ex G. Don	Bhale Sunapati	√				√			
57	Euphorbiaceae	*Bridelia retusa* (L.) Spreng.	Gayo								√
58	Euphorbiaceae	*Jatropha curcas* L.	Kadam	√							
59	Euphorbiaceae	*Sapium baccatum* Roxb.	Ban Pipal	√							
60	Fabaceae	*Desmodium elegans* DC.	Chamle		√	√					
61	Fabaceae	*Piptanthus nepalensis* (Hook.) D. Don	Suga phool		√	√					
62	Fabaceae	*Dalbergia sisso* Roxb. ex DC.	Sisham								
63	Fagaceae	*Quercus semecarpifolia* Sm.	Kashru		√	√					
64	Fagaceae	*Castanopsis tribuloides* (Smith) A. DC.	Musure katus			√			√		
65	Flacourtiaceae	*Xylosma controversum* Clos.	Dhare kanda		√						
66	Gentianaceae	*Swertia chirayita* (Roxb. ex Fleming) H. Karst	Tida	√							
67	Gentianaceae	*Gentiana tubiflora* (G. Don) Griseb.		√							
68	Geraniaceae	*Geranium nepalense* Sweet	Chunitro ghans								√
69	Hydrangeaceae	*Deutzia compacta* Craib			√						
70	Hydrangeaceae	*Hydrangea heteromalla* D. Don	Phusure kaath		√	√					
71	Juglandaceae	*Juglans regia* L.	Okhar	√			√				
72	Labiatae	*Colquhounia coccinea* Wall.	Phulpat			√	√				

73	Labiatae	*Elscholtzia fruticosa* (D. Don) Rehder	Chhinki								√
74	Labiatae	*Colebrookea oppositifolia* Sm.	Dhusure	√							
75	Lauraceae	*Cinnamomum camphora* (L.) J. Presl.	Kapoor					√			
76	Lauraceae	*Litsea monopetala* (Roxb.) Pers.	Kadmero		√	√					
77	Lauraceae	*Machilus odoratissima* Nees			√						
78	Leeaceae	*Leea aequata* L.	Kag chuche				√				
79	Fabaceae	*Albizia chinensis* (Osbeck.) Merr.	Kalo siris		√						
80	Fabaceae	*Albizia lebbeck* (L.) Benth.	Kalo siris		√						
81	Fabaceae	*Bauhinia purpurea* L.	Koiralo	√							
82	Fabaceae	*Bauhinia vahlii* Wight & Arn.	Borla	√							
83	Fabaceae	*Cassia tora* L.	Cakamake	√							
84	Fabaceae	*Crotalaria cytisoides* Roxb. ex DC.	Silsile	√							
85	Fabaceae	*Desmodium microphyllum* (Thunb.) DC.	Bakhre ghans	√							
86	Fabaceae	*Erythrina stricta* Roxb.	Phaledo	√							
87	Fabaceae	*Entada phaseoloides* (L.) Merr.	Pangra	√							
88	Fabaceae	*Mimosa rubicaulis* Lam.	Boksi ghans	√							
89	Liliaceae	*Asparagus filicinus* Buch.- Ham ex D. Don	Van Kurilo				√				
90	Liliaceae	*Asparagus racemosus* Willd.	Kurilo	√			√				
91	Loranthaceae	*Scurrula elata* (Edgew.) Danserl	Ainjeru								√
92	Lythraceae	*Lagerstroemia parviflora* Roxb.	Hade							√	
93	Lythraceae	*Woodfordia fruticosa* (L.) Kurz.	Amar phula	√							
94	Malvaceae	*Sida rhombifolia* L.	Sano cillya							√	
95	Malvaceae	*Malva sylvestris* L.								√	
96	Melastomataceae	*Melastoma normale* D.Don								√	
97	Moraceae	*Artocarpus lakoocha* Wall. ex Roxb.	Badhar	√							

98	Moraceae	*Ficus hederacea* Roxb.			√						
99	Moraceae	*Ficus lacor* Buch.- Ham.	Kabhro	√							
100	Moraceae	*Ficus religiosa* L.	Pipal	√							
101	Moraceae	*Ficus semicordata* Buch.- Ham. ex Smith	Khanayo	√							
102	Moraceae	*Morus alba* L.			√		√				
103	Musaceae	*Musa paradisiaca* L.	Kera	√							
104	Myrtaceae	*Syzigium cumini* (L.) Skeels	Kalo jamun	√							
105	Nyctaginaceae	*Mirabilis jalapa* L.	Lankasani							√	
106	Oleaceae	*Fraxinus micrantha* Lingelsh				√					
107	Onagraceae	*Ludwigia parviflora* Roxb.	Lwang jhar	√							
108	Papaveraceae	*Corydalis cashemeriana* Royle		√							
109	Phytoloccaceae	*Phytolacca acinosa* Roxb.	Jaringo				√				
110	Pinaceae	*Abies spectabilis* (D. Don) Mirb.	Talish patra			√		√			
111	Pinaceae	*Larix himalaica*W. C. Cheng & L. K. Fu	Langtang Sallo						√		
112	Pinaceae	*Picea smithiana* (Wall.) Boiss	Jhule sallo			√			√		
113	Pinaceae	*Pinus wallichiana* A. B. Jacks	Gobre sallo			√			√		
114	Pinaceae	*Tsuga dumosa*(D. Don) Eichler	Thinge salla					√	√		
115	Pinaceae	*Taxus wallichiana* Zucc.	Dhegre salla	√							
116	Piperaceae	*Peperomia tetraphylla* (G. Forst) Hook & Arn.		√						√	
117	Poaceae	*Bambusa arundinacea* (Retz.) Willd.	Bhalu bans				√				
118	Poaceae	*Eleusine indica* (L.) Gaertn	Kode jhar		√						
119	Poaceae	*Paspalum distichum* L.	Janai ghans								√
120	Poaceae	*Setaria geniculata* Beauv.	Kagune jhar		√						
121	Polygonaceae	*Rumex nepalensis* Spreng.	Hali	√							√
122	Polygonaceae	*Polygonum minus* Hudson	Pire jhar								√
123	Polygonaceae	*Fagopyrum tataricum* (L.) Gaertn	Phaphar				√				

124	Primulaceae	*Primula sikkimensis* Hook.f	Medosero	√							
125	Ranunculaceae	*Anemone rivularis* Buch.- Ham. ex DC.	Patidhuk	√							
126	Ranunculaceae	*Anemone vitifolia* Buch.- Ham. ex DC.	Mauri Mulo								√
127	Ranunculaceae	*Thalictrum foliolosum* DC.	Dampate	√							
128	Ranunculaceae	*Aconitum gammiei* Stapf.	Madhu bis	√							
129	Rosaceae	*Cotoneaster acuminatus* Lindl.	Dhalke Phul			√					
130	Rosaceae	*Prinsepia utilis* Royle	Dhatelo			√	√		√		
131	Rosaceae	*Rosa sericea* Lindl.	Darimpate	√		√					
132	Rosaceae	*Rubus paniculatus* Sm.	Kalo Aainselu		√		√				
133	Rosaceae	*Sorbus cuspidata* (Spach) Hedl.	Lekh Mayal			√	√				
134	Rosaceae	*Spiraea bella* Sims.	Seto khareto							√	
135	Rosaceae	*Prunus davidiana* (Carriere) Franchet					√				
136	Rosaceae	*Prunus cerasoides* D.Don	Painyu				√				
137	Rosaceae	*Rubus nepalensis* (Hook.f.) Kuntze					√				
138	Rosaceae	*Rubus foliolosus* D. Don	Kali								
139	Rubiaceae	*Rubia manjith* Roxb. ex Fleming	Manjitho	√							
140	Rubiaceae	*Coffea benghalensis* Heyne ex Roemer & Schultes	Kaphi				√				
141	Rubiaceae	*Wendlandia puberula* DC.	Van kanyu		√						
142	Rutaceae	*Zanthoxylum armatum* DC.	Parpare Timur	√		√					√
143	Salicaceae	*Salix disperma* Roxb. ex D. Don				√		√			
144	Sambucaceae	*Viburnum cylindricum* Buch.- Ham. ex D. Don	Gharghuri			√					
145	Sambucaceae	*Viburnum mullaha* Buch.- Ham. ex D. Don	Molo		√	√	√				
146	Sapotaceae	*Aesandra butyracea* (Roxb.) Baehni	Chyuri	√							
147	Saxifragaceae	*Astilbe rivularis* Buch.- Ham. ex D. Don	Thulo ausadhi	√							
148	Saxifragaceae	*Bergenia ciliata* (Haw) Sternb	Paashanabed	√							

149	Scrophulariaceae	*Pedicularis siphonantha* D. Don	Ponki	√							
150	Scrophulariaceae	*Torenia cordata* L.		√							
151	Solanaceae	*Solanum nigrum* L.	Kalo Bihi	√	√	√					
152	Solanaceae	*Solanum indicum* L.	Bihi	√							
153	Solanaceae	*Solanum tuberosum* L.	Aalu				√				
154	Solanaceae	*Nicotiana tabacum* L.	Surti								√
155	Theaceae	*Eurya acuminata* DC.	Bilaune								
156	Tiliaceae	*Grewia disperma* Rottb.	Harsa				√				
157	Urticaceae	*Boehmeria platyphylla* D. Don	Gargalo	√							
158	Urticaceae	*Elatostema platyphyllum* Wedd.	Sano gagleto				√				
159	Urticaceae	*Maoutia puya* (Hook.f.) Wedd.	Kyinki								√
160	Valerianaceae	*Valeriana hardwickii* Wall.	Nakkali jatamasi	√							
161	Verbenaceae	*Callicarpa arborea* Roxb.	Mas gede	√					√		
162	Verbenaceae	*Clerodendron infortunatum* L.	Ghantosari	√							
163	Violaceae	*Viola pilosa* Blume	Ghatte ghans	√							
164	Vitaceae	*Tetrastigma serrulatum* (Roxb.) Planch.	Pani lahara		√						√
165	Zingiberaceae	*Costus speciosus* (Konig) Smith	Bet lauri	√							

Appendix VIII: Medicinal Plants with their use values

S.N.	Family	Latin Name	Local name	Part used	Medicinal uses	References
1	Acanthaceae	*Justicia adhatoda* L.	Asuro	Leaf	For curing cough, fever, asthma and dysentery	1
2	Alangiaceae	*Alangium chinense* (Lour.) Harms.	Phir phire	Root	For snake bite and wounds	3
3	Amaranthaceae	*Amaranthus spinosus* L.	Van lunde	Root	Root juice given in fever, urinary disorder, diarrhoea and dysentry.	1
4	Anacardiaceae	*Mangifera indica* L.	Ampa	Bark	Bark juice anthelmintic and also used in indigestion.	4
5	Apiaceae	*Hydrocotyle himalaica* P.K. Mukh	Taapre	Leaf	Leaf juice is used to cure boils on the tongue.	4
6	Apiaceae	*Selinum tenuifolium* Wall. ex C.B. Clarke	Bhajandari	Whole plant	For cough and cold.	1
7	Apocynaceae	*Plumeria rubra* L.	Golanchi	Bark	For cancer protection, brain cell protection, skin cell protection	1
8	Araliaceae	*Schefflera elliptica* Harms.		Leaf	As a remedy for cough and as a diuretic and tonic.	1
9	Araliaceae	*Hedera nepalensis* K. Koch	Kathe laharo	Leaf, berries	Used as stimulant.	3
10	Asteraceae	*Cirsium verutum* (D. Don) Spreng	Sungure kanda	Root piece	Chewed to treat abdominal pain, and water brash, and chest pain.	1
11	Asteraceae	*Dichrocephala benthamii* C. B. Clarke	Chhiuke jhar	Whole plant	Juice of the plant is dripped into the nostrils for nasal infections.	1
12	Asteraceae	*Bidens pilosa* L.	Kalo kuro	Whole plant	The juice of the plant is applied to fresh cuts and wounds.	1
13	Asteraceae	*Eupatorium odoratum* L.	Aule Banmara	Whole plant	Juice of the plant is applied to cuts and wounds.	1
14	Asteraceae	*Eclipta prostrata* (L.) L.	Bhangeri jhar	Whole plant	Used to extract diosgenin for the manufacture of steroid hormones and cortico steroid.	1
15	Asteraceae	*Tagetes patula* L.	Sayapatri	Whole plant	Plant juice appilied in body pain, cut wounds and skin diseases.	4
16	Asteraceae	*Xanthium strumarium* L.	Kastolo	Root	Root paste used to treat swollen bones and fractures.	1
17	Berberidaceae	*Podophyllum hexandrum* Royle	Laghu patra	Root	Used to cure worm infection an control bleeding.	4
18	Betulaceae	*Betula alnoides* Buch.-Ham. ex D. Don	Lekh painu	Bark	For curing back pain.	1
19	Bignoniaceae	*Oroxylum indicum* (L.) Vent.	Karamkand	Root	Root decoction for diarrhoea and dysentry	1
20	Boraginaceae	*Cynoglossum zeylanicum* (Vahl ex Hornem.) Thunb. ex Lehm	Kanike kuro	Whole plant	As antiseptic and healing for cuts.	3
21	Buxaceae	*Sarcococca saligna* (D. Don) Mull. Arg	Phitphiya	Leaf	Acts as hallucinogenic	1
22	Caryophyllaceae	*Drymaria diandra* Blume	Abijalo	Whole plant	Wrapped with muslin cloth and roasted in charcoal is smelled in case of sinusitis.	1
23	Convolvulaceae	*Cuscuta reflexa* Roxb.	Aakasbeli	Whole plant	Plant juice is given in jaundice, body pain.	4
24	Cucurbitaceae	*Coccinia grandis* (L.) Voig	Gol kakri	Stem	Juice of the stem is dripped into the eyes to treat cataract.	4
25	Cupressaceae	*Juniperus indica* Bertol.	Dhupi	Fruits	For neck pain.	1
26	Cupressaceae	*Juniperus squamata* Buch.-Ham. ex D. Don	Dhupi	Fruits	For neck, headache and jaundice	2
27	Cyperaceae	*Cyperus niveus* Retz.	Seto mothe	Tubers	Useful in skin diseases such as scabies, leprosy etc.	1
28	Dipterocarpaceae	*Shorea robusta* Gaertn.	Sal	Root, bark	Bark juice and resin used in diarrhoea and dysentery.	1

29	Ericaceae	*Lyonia ovalifolia* (Wall.) Drude	Angeri	Leaf	Used for curing boils and pimples.	1
30	Ericaceae	*Pieris formosa* (Wall.) Drude	Lek Angeri	Leaf	Leaf extract used as anthelminthic.	1
31	Ericaceae	*Rhododendron anthopogon* D. Don	Sunapati	Flowers & Leaf	Used in indigestion, liver and lung troubles.	4
32	Ericaceae	*Rhododendron lepidotum* Wall. ex G. Don	Bhale Sunapati	Flowers	Used on wounds.	1
33	Euphorbiaceae	*Sapium baccatum* Roxb.	Ban Pipal	Latex	Latex mixed with mustard oil is applied to muscular swellings.	1
34	Euphorbiaceae	*Jatropha curcas* L.	Kadam	Root	Juice of the root is applied to boils and pimples.	1
35	Gentianaceae	*Swertia chirayita* (Roxb. ex Fleming) H. Karst	Tida	Whole plant	For curing fever.	1
36	Gentianaceae	*Gentiana tubiflora* (G. Don) Griseb.		Whole plant	juice of whole plant is mixed with equal amount of water to cure jaundice.	1
37	Juglandaceae	*Juglans regia* L.	Okhar	Fruit	For curing toothache	4
38	Labiatae	*Colebrookea oppositifolia* Sm.	Dhusure	Root, leaf	Root is used in epilepsy. Leaf are applied to wounds and bruises.	1
39	Fabaceae	*Crotalaria cytisoides* Roxb. ex DC.	Silsile	Leaf	Leaf juice used in scabies.	1
40	Fabaceae	*Erythrina stricta* Roxb.	Phaledo	Bark, Leaf	Bark used in itching, burning, fever and Leaf to treat skin diseases.	1
41	Fabaceae	*Mimosa rubicaulis* Lam.	Boksi ghans	Root	Root paste applied on sprain and backache.	1
42	Fabaceae	*Bauhinia purpurea* L.	Koiralo	Flowers	Raw flowers for diarrhoea and dysenrty.	4
43	Fabaceae	*Bauhinia vahlii* Wight & Arn.	Borla	Root	Root juice given in dysentry.	1
44	Fabaceae	*Cassia tora* L.	Cakamake	Root, leaf	Root and leaf paste used to treat ringworm and skin diseases.	1
45	Fabaceae	*Desmodium microphyllum* (Thunb.) DC.	Bakhre ghans	Root	used as medicinal abortifacient.	1
46	Fabaceae	*Entada phaseoloides* (L.) Merr.	Pangra	Bark	Bark is used in epilepsy, constipation and renderpest.	1
47	Fabaceae	*Dalbergia sisso* Roxb.	Sisham	Bark, leaf	Bark and leaf juice antihelmintic and also used in cut wounds, diarrhoea and dysentry.	1
48	Liliaceae	*Asparagus racemosus* Willd.	Kurilo	Tubers	Tubers diuretic, aphrodisiac, tonic, appetizer, carminative	4
49	Lythraceae	*Woodfordia fruticosa* (L.) Kurz.	Amar phula	Bark	Bark paste applied in boils, bark juice given in stomach problems	1
50	Moraceae	*Artocarpus lakoocha* Wall. ex Roxb	Badhar	Bark	bark juice used in boils, pimples, cut wounds and bloody dysentry.	1
51	Moraceae	*Ficus lacor* Buch.- Ham.	Kabhro	Bark	Decoction of bark is used as a wash ulcers and against leucorrhoea, and also as gargle in salivation	1
52	Moraceae	*Ficus religiosa* L.	Pipal	Bark	Bark juice is used in diarrhoea and dysentry.	1
53	Moraceae	*Ficus semicordata* Buch.- Ham. ex Smith	Khanayo	Fruits	Fruits are given in small ulcers in groups in the mouth or in tongue	1
54	Musaceae	*Musa paradisiaca* L.	Kera	Fruits	Unripe fruits boiled in coal or roasted and given in diarrhoea and dysentry.	4
55	Myrtaceae	*Syzigium cumini* (L.) Skeels	Kalo jamun	Bark	Bark juice used in diarrhoea, dysentry and cut wounds.	1
56	Onagraceae	*Ludwigia parviflora* Roxb.	Lwang jhar	Whole plant	Juice is applied to hal wounds between the toes.	1

57	Papaveraceae	*Corydalis cashemeriana* Royle		Whole plant	Used in chronic fever and burns.	1
58	Pinaceae	*Taxus wallichiana* Zucc.	Dhegre salla	Leaf stem	For anti- cancer and stimulant.	1
59	Piperaceae	*Peperomia tetraphylla* (G. Forst) Hook & Arn.		Whole plant	Juice of plant is used to cure convulsions, skin diseases, cough and asthma.	1
60	Polygonaceae	*Rumex nepalensis* Spreng.	Hali	Stem seeds	Stems used for lung and liver problems, seeds in mouth disorder.	4
61	Primulaceae	*Primula sikkimensis* Hook.f	Medosero	Flowers	Flowers used in fever and diarrhoea.	1
62	Ranunculaceae	*Anemone rivularis* Buch.-Ham. ex DC	Patidhuk	Fruit seeds	Fruit and seed used in liver disorders, indigestion, cold and cough.	1
63	Ranunculaceae	*Thalictrum foliolosum* DC.	Dampate	Root	Root used for curing gastritis.	1
64	Ranunculaceae	*Aconitum gammiei* Stapf.	Madhu bis	Root	Juice of the root is used for stomach aches.	1
65	Rosaceae	*Rosa sericea* Lindl.	Darimpate	Flower	Paste of flower is applied to treat headaches and given in liver complaints.	2
66	Rosaceae	*Rubus foliolous* D.Don	Kali	Fruits	Immatue fruits are chewed for headaches.	1
67	Rubiaceae	*Rubia manjith* Roxb. ex Fleming	Manjitho	Root	Root paste for curing scabies and skin diseases.	1
68	Rutaceae	*Zanthoxylum armatum* DC.	Parpare Timur	Fruit	For curing toothache, constipation and cold	2
69	Sapotaceae	*Aesandra butyracea* (Roxb.) Baehni	Chyuri	Bark	Juice of bark is given to treat indigestion.	1
70	Saxifragaceae	*Astilbe rivularis* (Buch.-Ham. ex D. Don	Thulo ausadhi	Root leaf	Root and leaf is used to cure cough and common cold.	4
71	Saxifragaceae	*Bergenia ciliata* (Haw) Sternb.	Paashanabed	Root	Root juice used for urinary troubles, roundworms and fever.	4
72	Scrophulariaceae	*Pedicularis siphonantha* D. Don	Ponki	Whole plant	Plant used for antidote to poisoning, liver disorder, fever and headache.	1
73	Scrophulariaceae	*Torenia cordata* L.		Whole plant	Juice of the plant is applied to cuts and wounds.	1
74	Solanaceae	*Solanum nigrum* L.	Kalo Bihi	Fruit, seeds	Plant sedative, alternative, diuretic, and expectorant	4
75	Solanaceae	*Solanum indicum* L.	Bihi	Root	For odontalgia, dyspesia, colic, skin diseases.	4
76	Urticaceae	*Boehmeria platyphylla* D. Don	Gargalo	Root	Root paste is used for bleeding.	1
77	Valerianaceae	*Valeriana hardwickii* Wall.	Nakkali jatamasi	Stem	Dried stems used to provide protection to clothes from insects.	1
78	Verbenaceae	*Clerodendron infortunatum* L.	Ghantosari	Root	Paste of root is applied to cure skin diseases and roundworms.	1
79	Verbenaceae	*Callicarpa arborea* Roxb.	Mas gede	Root	Root chewed to treat boils on the tongue	1
80	Violaceae	*Viola pilosa* Blume	Ghatte ghans	whole plant	For gastric problems	1
81	Zingiberaceae	*Costus speciosus* (Konig) Smith	Bet lauri	Root	Juice used to cure of fever, cough, and pain and as tonic.	1

Note* DPR (1996): **1,** Shrestha (2012): **2,** Balami (2004): **3,** UGC (2011- 2013): **4**

Appendix IX: Wild Edible Plants in MCA and adjoining areas

Family	Latin name	Local name	Fruits	Leaf	Root
Amaranthaceae	*Amaranthus viridis* L.	Lunde	√		
Amaryllidaceae	*Allium wallichii* Kunth.	Lasun Saag		√	
Anacardiaceae	*Choerospondias axillaris* (Roxb.) B. L. Burtt & A. W. Hill	Amali	√		
Asteraceae	*Crassocephalum crepidioides* (Benth.) S. Moore.	Anikale jhar		√	
Brassicaceae	*Rorippa nastracium- aquaticum (*L.) Hayek	Sim rayo		√	
Coriariaceae	*Coriaria napalensis* Wall.	Macchaino	√		
Dioscoreaceae	*Dioscorea bulbifera* L.	Ban Tarul			√
Dioscoreaceae	*Dioscorea deltoidea* Wall. ex Kunth	Bhyakur			√
Dioscoreaceae	*Dioscorea hispida* Dennst.				√
Juglandaceae	*Juglans regia* L.	Okhar	√		
Labiatae	*Colquhounia coccinea* Wall.	Phulpat	√		
Leeaceae	*Leea aequata* L.	Kag chuche	√		
Liliaceae	*Asparagus filicinus* Buch.- Ham ex D. Don	Van Kurilo		√	
Liliaceae	*Asparagus racemosus* Willd.	Kurilo		√	
Moraceae	*Morus alba* L.		√		
Phytoloccaceae	*Phytolacca acinosa* Roxb.	Jaringo		√	
Poaceae	*Bambusa arundinacea* (Retz.) Willd.	Bhalu bans		√	
Polygonaceae	*Fagopyrum tataricum* (L.) Gaertn.	Phaphar	√		
Rosaceae	*Prinsepia utilis* Royle	Dhatelo	√		
Rosaceae	*Rubus paniculatus* Sm.	Kalo Aainselu	√		
Rosaceae	*Sorbus cuspidata* (Spach) Hedl.	Lekh Mayal	√		
Rosaceae	*Prunus davidiana* (Carriere) Franchet		√		
Rosaceae	*Prunus cerasoides* D.Don	Painyu	√		
Rosaceae	*Rubus nepalensis* (Hook.f.) Kuntze		√		
Rubiaceae	*Coffea benghalensis* Heyne ex Roemer & Schultes.	Kaphi	√		
Sambucaceae	*Viburnum mullaha* Buch. - Ham. ex D. Don	Molo	√		
Solanaceae	*Solanum tuberosum* L.	Aalu			√
Tiliaceae	*Grewia disperma* Rottb.	Harsa	√		
Urticaceae	*Elatostema platyphyllum* Wedd.	Sano gagleto		√	

PHOTOPLATES

Plate I: Some Gymnosperms of Manaslu Conservation Area

a- *Ephedra gerardiana,* b- *Picea smithiana,* c- *Larix himalaica, d- Taxus wallichiana,* e- *Tsuga dumosa,* f- *Pinus wallichiana*

Plate II: Some Plants new addition to MCA

a- *Goodyera biflora*, b- *Irsis goniocarpa*, c- *Plantago himalaica*, d- *Silene setisperma*, e- *Glechoma nivalis*, f- *Dioscorea hispida*

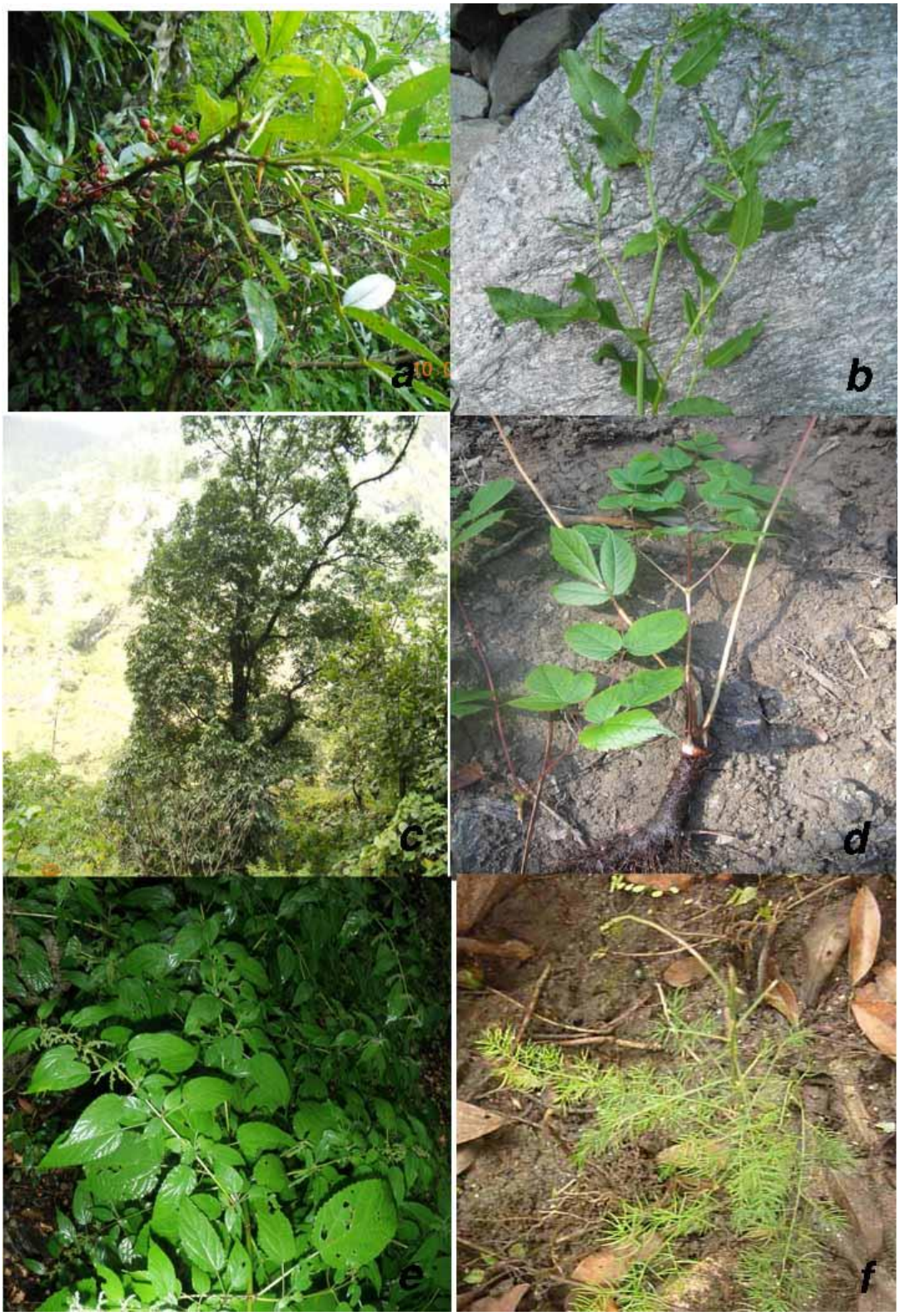
Plate III: Some Plants of MCA

a- *Thermopsis barbata,* b- *Viburnum mullaha,* c- *Panax pseudo- ginseng,* d- *Allium wallichii,* e- *Elsholtzia fruticosa,* f- *Trillidium govanianum*

Plate IV: Some threatened Plants of MCA

a- *Swertia chirayita,* b- *Podophyllum hexandrum,* c- *Bergenia ciliata,* d- *Aconitum spicatum,* e- *Larix himalaica,* f- *Dioscorea deltoidea*

Plate V: Some Economically Important Plants



a- *Zanthoxylum armatum,* b- *Rumex nepalensis,* c- *Neolitsea cuipala,* d- *Astilbe rivularis,* e- *Urtica dioica,* f- *Asparagus racemosus*