

ETHNO-BOTANICAL STUDY OF MOKOKCHUNG AND TUENSANG DISTRICTS OF NAGALAND

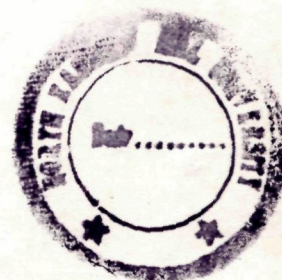
SAPU CHANGKIJA
DEPARTMENT OF BOTANY
SCHOOL OF LIFE SCIENCES

SUBMITTED IN FULFILMENT OF THE REQUIREMENT OF
DEGREE OF
DOCTOR OF PHILOSOPHY

*Forwarded
Y. Schab
19.12.91*

TO

Head
Department of Botany
School of Life Sciences
N.E.H.U., Shillong-11



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PHONE :
GRAMS : NEHU

North-Eastern Hill University

Mayurbhanj Complex, Nongthymmai, Shillong-793014

Dr. Y. Kumar
Department of

BOTANY

C E R T I F I C A T E

STUDY

I certify that the thesis entitled "ETHNOBOTANICAL OF MOKOKCHUNG AND TUENSANG DISTRICTS OF NAGALAND" submitted by Mr. Sapu Changkija for the degree of DOCTOR OF PHILOSOPHY of North-Eastern Hill University embodies the record of the original investigation carried out by him under my supervision. He has been duly registered, and the thesis presented is worthy of being considered for the award of the Ph.D. Degree. This work has not been submitted for any degree of any other University.

(YOGENDRA KUMAR)

Shillong 793 014

November 4, 1991

SUPERVISOR OF RESEARCH

Department of Botany,
School of Life Sciences,
North-Eastern Hill University,
Shillong, Meghalaya.

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ACKNOWLEDGEMENT

I take this opportunity to express my sincere thanks to Dr. Yogendra Kumar, Department of Botany, School of Life Sciences, North-Eastern Hill University, Shillong without whose supervision my Ph.D. dissertation work would not have been completed.

I am also equally grateful to Dr. M.N.V. Prasad, who was a lecturer in the Botany Department, North-Eastern Hill University till 1984, for his guidance and valuable help at the initial stages of my Ph.D. work.

I am grateful to the the Head, Department of Botany, North-Eastern Hill University, Shillong, for providing me all necessary facilities to do my Ph.D. work.

I am extremely thankful to Professor Darlando Khathing, Head, Regional Sophisticated Instrumentation Centre, Shillong who has kindly allowed me to complete my dissertation with the necessary facilities.

I also extend my sincere thanks to Deputy Director, Botanical Survey of India (Eastern Circle) Shillong for allowing me to consult the herbaria.

My sincere thanks are also due to Mr. I.J. Changkija, IPS, Commandant 5th Nagaland Armed Police, Phek, Nagaland, for helping me by providing necessary arrangement with security throughout my field works in sensitive border areas in Tuensang District (study area).

I am thankful to Mr. Bendangwati, School Inspector, Education Department, Govt. of Nagaland, who helped me as an interpreter during field trips to different villages of different tribes.

Lastly but not the last, I like to offer my thanks to all my friends and to my family members for their help and Co-operation throughout my research; without whose help it would not have been possible for me to complete the research work.

Sapu.

SAPU CHANGKIJA

Regional Sophisticated Instrumenation Centre
Shillong

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GENERAL INTRODUCTION

GENERAL INTRODUCTION

Plants contribute to the welfare of human-being in innumerable ways. In contrast to dependence of early men on a few types of plants, at present man has to depend on a large number of plants. Man has been learning about useful and harmful plants by trial and error method since ancient times. Initially man looked for plants not only for his food but also for curing his ailments reason being it was only the plants that were available around him. With huge growth of population there is increasing demand to utilize more and more plant resources not only as a new or alternative source of food and medicine but also for various purposes.

A good part of the traditional medicine (be it "Ayurveda" or "Unani" system), food and vegetables have their roots in the preliminary and basic discoveries made by early man. The tribal societies still largely depend on natural vegetation around them and have a wealth of hidden information among them about uses of plants. Ethnobotany is relevant to the useful and harmful aspects of plants. Ethnobotany helps in understanding both the cultural and biological diversity of primitive societies and the plants. It provides basic data to find out the new or alternative sources of food and medicine etc. The term "Ethnobotany" was first given by Harshberger in 1895 to denote the study of plants used by primitive and aboriginal people. Many people have interpreted it in different ways. Some treated it synonymous with economic botany, others with traditional medicine etc. Richard (1978) have used the term to include the

relationship between primitive societies and their plant surroundings in wider sense.

Ethnobotany broadly deals with natural relationship of man with plants (Jain, 1989). It is a multidisciplinary study and has linkages with viz. Anthropology, Sociology and Culture, Religion, Medicine, Literature, Mythology, History, Politics, knowledge of flora and vegetation and conservation. The importance of ethnobotanical studies have been realised in respect of various uses of plants among aboriginal societies. Such studies can bring to light numerous uses of plants.

The North-east region of India and Nagaland in particular is inhabited by numerous aboriginal tribes and they possess rich folklore. This region is one of the richest areas in flora. Vavilov in his classical work "Geographic centres of variability" had identified the north eastern region as one of the most important areas within the Indian sub continent. He recognised this region to be the primary or secondary centre of origin of many species of crop plants. The tribals of this region are still practicing same life style utilizing plants as vegetables and herbal medicines. With increasing population, a large area of forested land rich in forest resources (germplasm) are disappearing at an alarming rate. However, few forests in Mokokchung district and a large forest cover in Tuensang district of Nagaland are still protected due to local beliefs or because of inaccessibility of these forests. These forests harbour large number of diverse forms of natural species of vegetables and primitive land varieties of crop plants. Within the species

there are large number of subspecies and varieties. The study area remained isolated from rest of the country for a long time. Even today the accessibility is rather poor specially in Tuensang district. The undisturbed condition (upto large extent) combined with suitable environmental conditions and varying altitude provide genetic and vegetation diversity. The contiguity of the area with several countries of South East Asia viz. Burma, China, Thailand etc. have also provided migration and mobility and subsequently microspeciation. The selections made unknowingly by these large number of ethnic groups staying in isolation in varying altitude and agro-climates as well as primitive form of farming and folk practices have led to the diversity of wild relatives of many crop plants.

According to the Botanical Survey of India about ten thousand species of flowering plants occur in north east region which is fifty per cent of the total flora of the country. Plant exploration in this region started ever since the time of Kingdon ward 1820's. He visited Upper Assam and Naga Hills in search of wild tea and rubber. However, knowledge of Nagaland flora and vegetation is very meagre. There is no detailed consolited floristic account (except for pteridophytes Jamir & Rao, 1982) either on any district of Nagaland or State as a whole. Recently few papers have been published listing the plants utilized by some of the tribes. Reference may be made to Rao and Jamir, (1982a), Rao, and Jamir, (1982b), Megonitso and Rao (1983), and Jamir and Rao (1990). So far, no systematic work on Ethnobotanical studies in Nagaland has been undertaken due to

lack of communication, inhospitable terrain and conditions of insurgency.

The different Naga tribes which live in isolated villages have developed a close intimacy with nature. These people have been utilizing plants not only as food and herbal medicines but also for their religious, traditional ceremonies and beliefs. Many a time they put the fear of God that evil shall fall on those who destroy such plants or plant parts. Therefore, the area has got many such forests which are still protected because of these beliefs. Thus, these ethnobotanical aspects are very important in conservation of useful plants.

Current interest in broad-based inexpensive health care, new drugs and new or alternative food plants has prompted ethnobotanical studies in several under developed societies of the world. It has been stressed that recording and analysis of the surviving ethnobotanical folklore is of great significance for human race.

The study area, Mokokchung and Tuensang district of Nagaland are inhabited by eight (8) aboriginal Naga major tribes namely: Ao in Mokokchung district, Chang, Sangtam, Yimchunger, Khiamungan, Phom, Konyak and Sema in Tuensang district. They have rich cultural tradition and rich heritage of folklore, myths and legends. Generally their occupation is Jhum cultivation, besides the collection of minor forest produce. It is also noticed that almost every village has a person having familiarity with the herbal medicines. These informations are passed on from generation to generation only through oral folklore. Therefore,

keeping in mind the immense scope of ethnobotany, the present work was undertaken and attempt has been made to survey the two districts of Nagaland to collect and record such valuable data on medicinal, wild edible vegetables-fruits, indigeneous domesticated and horticultural, folk practices, beliefs and folklores, before they are lost forever.

CHAPTER - I

1. STUDY AREA
2. ANTHROPOLOGICAL BACKGROUND

(A) STUDY AREA

Nagaland is a paradise for the study of natural sciences, particularly in the field of flora and fauna, genetical diversity, migrations of people as well as plants and animals, forestry etc. At the same time it is also a most fertile field to study Anthropology and Sociology in terms of its colourful Cultural traditions, folklore, myths and legends as well as customs of the Naga tribes which carry the traces of their ancient life patterns. With all these fertility and richness, Nagaland provides a most interesting and attractive field for Ethnobotany.

Nagaland is the eastern-most state of the present twentyseven states of Indian Union, situated between $25^{\circ}11'55''$ and $27^{\circ}2'10''$ North latitude and between $93^{\circ}0'20''$ and $95^{\circ}17'10''$ East longitude. The area covers 16,579 sq. km. Nagaland is bordered by the states of Assam on the West, and Manipur state on the South; Mayanmar (Burma) on the East and Arunachal Pradesh on the Northern part of the Eastern border. Geo-politically Nagaland is a very sensitive state as the nations like Mayanmar (Burma) in the East, China in the North and Bangladesh in the South-West are near to its territory (Fig. 1).

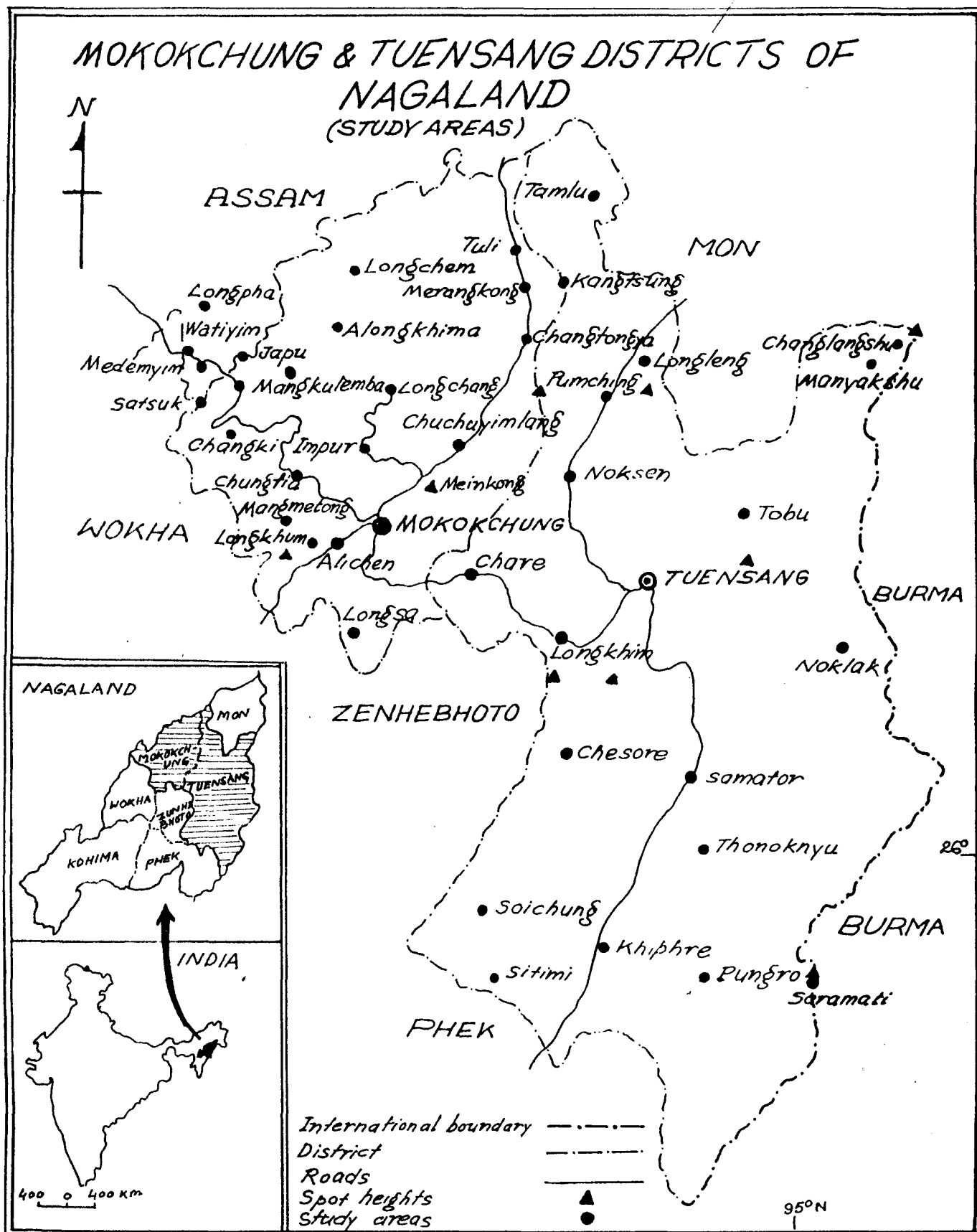


FIG. I

MOKOKCHUNG & TUENSANG DISTRICTS OF NAGALAND

(STUDY AREAS : SHOWING TRIBAL BLOCKS)

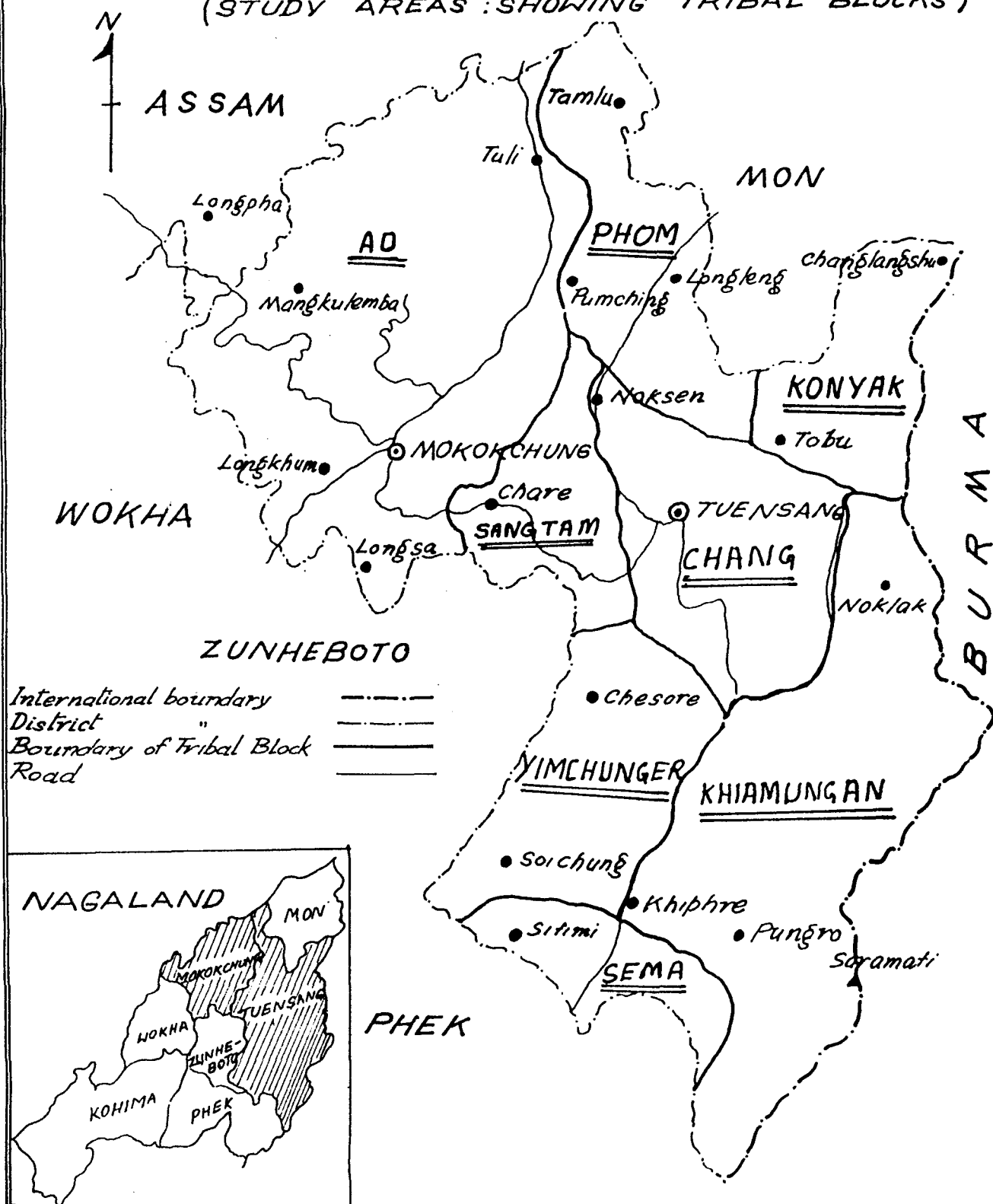


FIG. 11

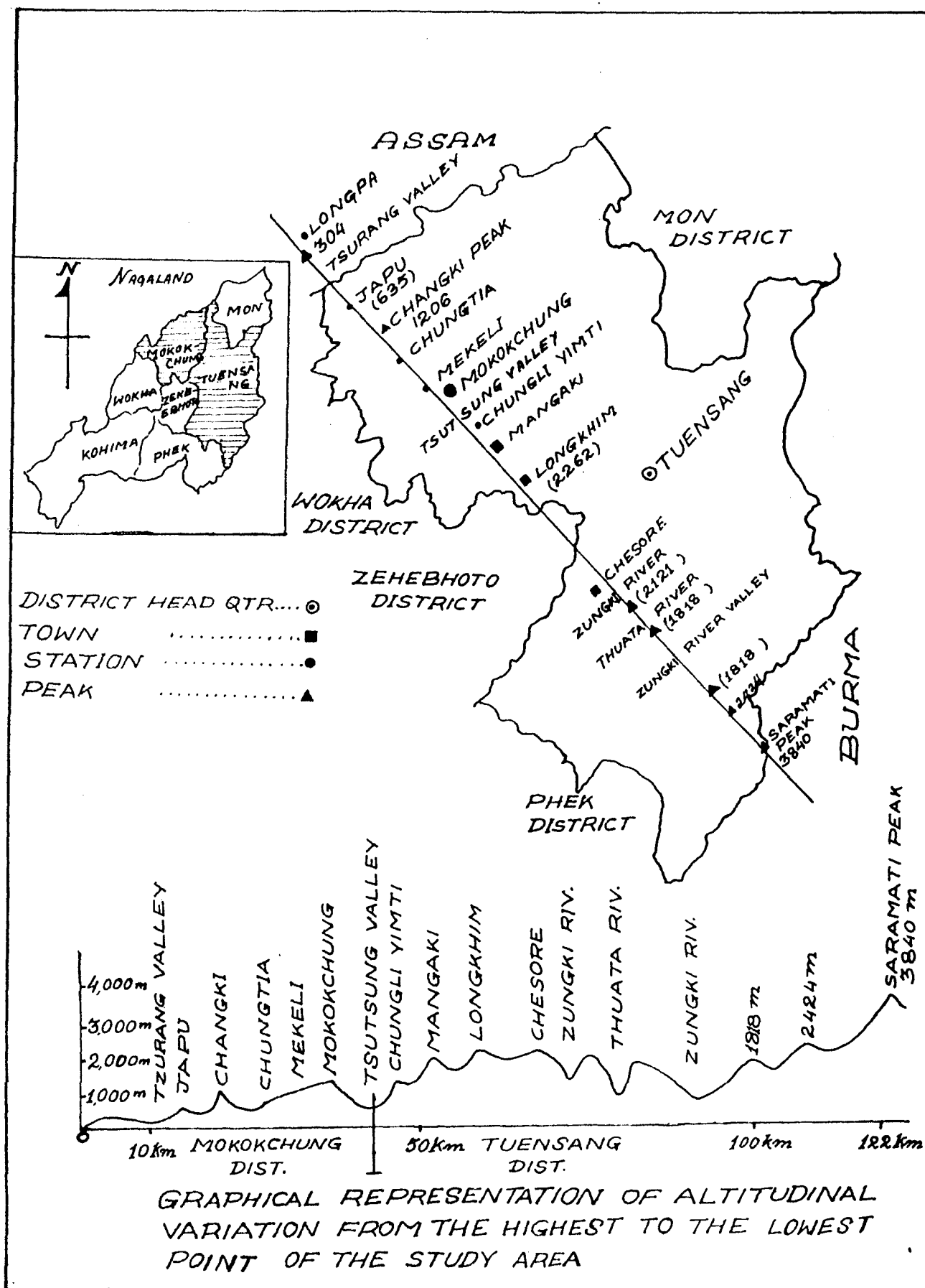


FIG. III

History : A major part of what is now Nagaland was formerly a district of Assam under the name of Naga Hills. The District of Naga Hills was constituted in 1866 with its Headquarter^s at Samaguting in the foot hills near present day Dimapur. Later the District headquarter was shifted to Wokha in the heart of the hills in 1876. Two years latter it was shifted to Kohima (the present state capital) in 1878. Gradually more and more areas came under the colonial administration. The present Tuensang and Mon Districts came under administration only in 1947. In 1957, the then Tuensang frontier division of the North East frontier Agency (now Arunachal Pradesh) was separated from it and joined with the Naga Hills to form Naga Hills Tuensang Area or NHTA in short. In 1961 the NHTA became a de-facto state under the name of Nagaland with its legislature and ministry. In 1963 it was made a de-jure state.

Physiography : The study area (Mokokchung and Tuensang District) of Nagaland constitutes the North-Eastern most districts in India with the international border of Burma as its neighbour. It is bounded by the State of Assam and Mon District of Nagaland on the North, Zunheboto District and Phek District of Nagaland on the South, bodering by Burma on the East and Sibsagar District of Assam state on the west. The total area is 5843 sq. km. with the population of 2,56,525 (1981 census), having a total forest area of 2,16,582 hectares. Most of the people live between 100 to 2,500m MSL and almost all the villages are situated at the top of the hills.

From the Eastern side of the Himalayas, some ranges have risen through patkai Bum hills (Naga hills) forming sub ranges viz. Barail range towards the South West, Saramati range to the South East and Arakanyoma of Burma through Manipur and Mizoram towards the South.

The dismembered branches of the eastern Himalayas are joined to the Naga hills where highest peak, Saramati is located. This is the only snow cap mountain other than the Himalayas having an altitude of 3,840m. MSL, situated on the Indo-Burma border in Tuensang district. (Fig. I&II). From the highest ridge of Saramati, the altitude gradually descends to the plains of Assam towards the North west having steep hills serrated by the rivers of Tsula, Milak, Yangnyu, Tezu and Tsurang rivers. From the plains of Assam the hills of Nagaland looks silhouetted in the rising sun. Among the four major rivers of the area, the Milak, Tsula and Tsurang are the tributaries of Brahmaputra and the Tezu is a tributary of the river Chindwin in Burma. The sources of river Milak and Tsurang are located in Mokokchung district and that of river Dikhu and Tezu are located in Tuensang district.

Name of some important peak of the study area .

Peak	Approximate altitude in MSL
1. Saramati peak	: 3840 m.
2. Yakko peak	: 2575 m.
3. Hellipong peak	: 2272 m.
4. Sawchu	: 1970 m.
5. Samatur	: 1900 m.
6. Thonoknyu	: 1850 m.
7. Longkhum	: 1830 m.
8. Meinkong	: 1740 m.
9. Longsa	: 1700 m.
10. Youngyensen	: 1360 m.
11. Yungnyushang	: 1360 m.
12. Changki peak	: 1206 m.

Geomorphological Classification : Basing on drainage pattern, physiography, lineaments and trend lines of the study area can be classified into the following geomorphic units.

- (i) Piedmont Alluvial plain
- (ii) Very low hills
- (iii) Low linear ridges
- (iv) Moderate linear ridges
- (v) Moderate hills
- (vi) Moderate to high hills
- (vii) Very high hills

- (i) **Piedoment alluvial plain:** Bordering the hills on the western side, there is extensive development of piedoment alluvial plains. This is exposed in the valleys of Trurang Milak, Tzula rivers, which flows ²andering towards the west to the Brahmaputra. Erosion is present along the rivers and the material constituting this unit is mainly composed of sand, shingle, clay and boulder.
- (ii) **Very low hills:** This geomorphic unit is extensively developed in western part of the areas of Saring, Chungtiayimsen, Longpayim, sen Gale¹ Aosenten. It shows gentle rolling topography and at places becoming almost flat plain. The drainage lines showing dendritic pattern are not very distinct. The material consisting this unit~~are~~ mainly soft and easily erodible and it is surrounded on all sides by linear ridges along the north-east to south-west direction parallel to regional tectonic trend.
- (iii) **Low hills:** This geomorphic unit is extensively exposed in the western part of the area of Watiyim, Med²myim, Longchem, Changtang, Anaki. These topographic ridges are linearly aligned in North-East to South-West direction. Drainage are fine dendritic type, but lines are not very prominent. It is susceptible to erosion and the direction is very high.
- (iv) **Moderate linear ridge:** This unit is extensively developed, showing long linear ridges in the western part of the area. The trend of these ridges is controlled by regional tectonic trend. The ridges form cresta and hogback land is formed with gentle to moderate slopes. Less susceptible erossion

as the material constituting this unit is mainly sandstone which is quite hard and massive. These ridges form barrier and control the drainage. Japu range, Changki range, Wameken village, Kangtsung village and Shiong village are formed in this unit.

(v) **Moderate Hills:** This unit has limited development in the central part of the area and shows fine dendritic drainage. Trend lines are not so prominent but the lineaments are very prominent. Direction is very high and the units ~~are~~ very susceptible to erosion. Asetkong range, Langpangkong range, Ongpangkong range, Phom dist. are of moderate hills.

(vi) **Moderate to High hills:** Outside the belt of linear ridges and Moderate hills, towards eastern part of the area, massive nature of moderate to high hills are exposed. This unit shows coarse dendritic drainage which is controlled at places by regional tectonic trend and lineaments. Trend lines are quite prominent but continuity of these lines are not seen over long distances. This is one of the most extensive units in the area and are not so susceptible to erosion as the material constituting this unit is hard and massive in nature. Meinkong, Longkhum, Longkhim, Tuensang, Noklak etc. are the formed of moderate to high hills unit.

(vii) **Very high hills:** This unit has limited development in the eastern and in the Eastern most part bordering to Burma. It shows coarse dendritic drainage which is controlled by tectonic trend and lineaments and which are very prominent.

Eastern most ridge bordering to Burma is a prominent and continuous line and are not susceptible to erosion. Hellipong, Longtok, Chentang, Sakchang, Konya, Kensung, Pangsa, Changlaungshu and Saramati peak are formed of this unit.

Climate

Both the Mokokchung and Tuensang districts of Nagaland enjoys monsoon climate with a difference with the adjoining states like Assam, Manipur and Burma. Here the winter is cold, warm and cool in summer. In the higher altitude of Tuensang district the minimum temperature at night comes down to 1xC in winter in the month of December and January, the average minimum temperature is around 4xC, while in Mokokchung district, the average minimum temperature is 10xC. In summer it is not at all hot and rather it is cool in comparison to the adjoining plains of Assam. The maximum temperature does not rise beyond 30xC having an average of 27xC, during the summer month of June and July.

Rainfall is on the average of 250 cm. (100") and it falls for about 150-180 days covering a period of nine months of the year; the greatest concentration being in July and August. Towards the end of winter season in February-March, the sky is clear almost throughout the day, with the occasional cloudiness during the afternoon and clear again at night. At this time high winds blows almost throughout the days beginning at about midnight or early in the morning and it blows so high that some damage is caused to the buildings (but not to the traditional Naga house of thatch roof because it is made in such a way that the wind can pass through the thatch roofs. (Photo plate; I) This wind blows from

south-west and at the time the wind velocity rises up to 100 km./hr. Had the wind been accompanied by rainfall, it would be considered to be storms. In April the wind dies out. A few showers follows this in February and March and a little more in April. May witnesses several showers and Monsoon sets in from June. Sometimes hail storms occur in March and April. During the rainy seasons the average relative humidity is 80% but at times it goes up to 95% and as such it is rather damp. The analysis of climate reveals that practically two seasons, winter and rainy Summer dominate the year, spring and Autumn being nominal and short lived.

Geology

The area of the two Districts of Mokokchung and Tuensang covers east to west vertically of Nagaland. Both the District consists of narrow strips of hilly terrain where the Indo-Burmese ranges run more or less North South. The topography is characterised by high peaks, deep gorges, narrow valleys and some plateaus. The highest peak in Nagaland is Saramati (which is the highest peak of Non Himalaya in India), rising to 3840 metre above MSL, in the eastern part of the Tuensang District. The Naga hills range forms the water shed. The entire drainage on the North western side of the hills ultimately finds its way into the Dhansiri river, while streams of eastern part flows to the south-west by joining with Tezu river further South. The climate of the area is tropical to sub-tropical, with heavy rainfall of 250 cm. average annually.

The rock formation of Mokokchung district belong to the tertiary

age of 8-60 million years old. The general geological sequence of the area is represented mainly by (a) Disang, (b) Barial and (c) Tipam group of rocks.

(a) The Disang group consists of dark grey, splintery scales with thin beds of sandstones. (b) The Barial U. Eocene Oligocene groups is made up of well-bedded sandstones with scale intercalations and several coal seams. (c) The Tipam group is characterised by ferruginous sandstones. This is overlain by the Girujan clay, characterised by typical blue, and mottled clays and argillaceous sandstone.

The mineral occurrences of economic importance of the Mokokchung districts are clay and coal. (a) Clay: This has been reported to be associated with the Barial group of rocks in Changkikong and Japukong ranges. (b) Coal: The Barial group of Sedimentary rocks in Changkikong and Japukong region are found to contain coal seams. The coal seams in this regions are reported to be of good quality and of workable extent, having considerable economic potentiality. The occurrences have been located in (a) Changki-Chungliyemsen. (b) Waromong-Mongchen and (c) Lakuni-Nokpoh areas. The occurrence of petroleum have been located recently in these two ranges viz. Changkikong and Japukong.

The rock formation of Tuensang district is mostly [?]predominant rocks belong to Tertiary-Cretaceous age i.e., 8 10 million years old, and these are actually the extension of their counterparts constituting the Arkan-Yoma in Burma. They occupy a fairly young mobile belt of the earth. The most conspicuous, however, is an ultramatic belt that runs over an extensive length along the

eastern fringe of the district. The belt with the associated sedimentaries and metamorphosed rocks attracts special attention for various minerals, particularly nickel, that occur in it. The Sedimentary rocks comprise dark grey, splintary slab with thin bands of sandstone belonging to Disang series of rocks and thick sandstone with intercalations of shale belonging to the Barial series of rocks.

A general lack of proper communications and poor accessibility were the main constraints that stood against a systematic search for minerals in the district during the earlier years. A number of mineral occurrence, however, have been located recently and they include asbestos, coal, limestone, marble, magnetite, chromite and pyrite as well as some oil seepages.

Soil genesis

Although Nagaland is a state comparatively smaller in area it has good diverse climate, topography and geological formations which result in different soil associations and vegetative covers. The study area in the state covers the whole area latitudinally from low valley in the west to the very high mountains in the east. The valleys and the foot hills are of alluvial soils of different stage of horizon development. The parent rock is made up of Tertiary rocks belonging to the Barail, Disang and Tipan sovier of microcene age.

The soil classification system analysed through Multi Spectral Data Analysis (MDAS) by National Remote Sensing agency (NRSA) following of 7th Approximation system of USDA is as follows:



Table I

Physicography	Natural vegetation Land use	Erosion hazards	Soil association
(1) Valleys and olluvial plains	Cultivated	No erosion/ deposition	Typic Psamaquents, Typic Udifluvents, Aquic Udipsammen, Aquic Udifluvents.
(2) Undulating uplands at the foot hills	Jhum cultivated	Moderate erosion	Typic Haplaquepts, Typic Dystrochrepts
(3) Steep slopes at hilly areas	Warm hilly, Evergreen & semi-evergreen forest	Severe erosion	Typic Paleudalfs, Typic Hapludalfs, Typic Rhodudalfs
(4) Hilly area at medium to high altitudes	Montane deciduous & evergreen broad leaves rain forests	Severe erosion	Typic Hapluhumods, Typic Hapludults, Typic Paudults Typic Rhodudults.
(5) Hill areas at high altitudes	Temperate and mixed temperate forests	less earosion	Typic Hapluhumods, Typic Haplorthods, Alfic Haplorthods.

(B) ANTHROPOLOGICAL BACKGROUND

The present work is a study on "Ethnobotany of Mokokchung and Tuensang Districts" of Nagaland. It deals with the study of plant-relation to the aboriginal tribes of the inhabitant Nagas. Before we go into more details about the various tribes, it would be worthwhile to say a few words regarding who are the Nagas. From as early as 2000 BC., great hordes of Mongolian stock allied to the Tebitans and Bhutans, speaking Tibeto-Burman and Mon-Khmer languages were migrating ceaselessly into Burma and Assam, through the river courses of the Chindwin, Irrawady and Bhrahmaputra from North-Western China, near the Yangtsukiang and Hoang-Ho rivers. These people afterwards were known by different names such as the Kirata, Garo, Khasi, Chutiya, Adi, Kuki, Meitie, Nagas etc. The present study concerns itself only with the Nagas.

The Nagas belong to the Mongolian stock speaking the Tibeto-Burman language living in the North-Eastern most part of India and this area consists of Nagaland, part of Manipur, Arunachal Pradesh, Assam, and North-Western part of Burma. Altogether they are about a million people. With about 26 different tribes, they have racial and socio-cultural affinities with the inhabitants of Burma, Fiji, Indonesia, Laos, Phillipines, Polynesia, Thailand, Vietnam etc. Some of the distinctive cultural practices of the Nagas which link them up with the people of south-east Asia are as follows.

1. Elaborately organised village systems with organised village Government.
2. Absence of any powerful political organisation.
3. Residence in hilly top regions with crude forms of shifting (Jhuming) agriculture.
4. Each village maintain their huge log-drum (xylophones) made out of a huge single log.
5. Building of house types on raised platforms.
6. Head hunting (This practice is not found with contemporary Nagas).
7. Terrace cultivation on the hill slopes.
8. Disposal of death bodies on raised platforms.
9. Common sleeping house for unmarried men which are taboo to women.
10. Trial marriage.
11. Tatting of man and womenfolk by pricking.
12. Food habits such as pre-preparation of food by fermentation process, cooking in bamboo tubes etc.
13. Plant use of the people examined reveal a very close similarity.
14. Aversion of milk as an article of diet.
15. Betel chewing and smoking pipes.
16. Various technological skill such as armours, double cylinder vertical forge, large quadriangular or hexagonal shield, animal traps, fishing techniques, agricultural implements, cowry shells, loinlooms etc.
17. Various games.

The Nagas consisting of a number of subtribe speaking different dialects with fairly well developed cultural traits established themselves permanently on the hills and mountaineous ridges or spurs above the valleys.

The villages are formed by as many as 800 to 1,000 houses. They have the usual vague tribal belief in a supreme God and a future state of life after death though they have not formulated their notions of what happens to the soul when it leaves the body. Their worship is devoted to the propitiation of the spirit of nature who inhabit pools, trees, rocks that cause illness. Enslavement used to be a regular custom. The slaves were treated well, except when paid over as fine or ransom to another village, where thereafter they were usually sacrificed. The villages are normally governed by a headman, and practice independent democratic unit. Nagas were industrious people and they practiced the old method of cultivation (Jhum shifting and terrace). They also manage to grow a good deal of cotton, rice, maize, millet, tobacco, betel nut, pan leaves, ginger, chilli, and various legumes etc.

They led a fairly isolated life till the advent of the British in the late 19th century and there are still some tribes whose traditional customs and practices and their dependence on nature for food, shelter and cure are still intact.

As the title of the study indicates, it is a ethno-botanical study of Mokokchung and Tuensang districtis of Nagaland only.

Mokokchung district is inhabited by the "Ao" tribe, whereas Tuensang district is inhabited by as many as 7 (seven) tribes. They are Chang, Khiamungan, Konyaks, Phom, Sangtam, Sema & Yimchunger. A brief introduction of all the tribes are given below:-

Ao:- The name 'Ao' is derived from 'Aor' their own word for themselves meaning "Those who went" (i.e. across the Dikhu river) which is, as distinct from (Merir' meaning "Those who did not come" (i.e. across the Dikhu river). The Ao is one of the largest and most advanced tribe of Nagaland, occupying the district of Mokokchung. Two different dialects are spoken by the Aos, the Mongsen and the Chongli dialect. Some of the distinctive characteristics of the Ao are the custom of disposing dead bodies on raised platforms (This custom is now abolished). Others are, the tatting of the womenfolk, use of huge xylophones hewn out from a single log, elaborately organised village councils, smoking pipe by men and women folk.

Semas: They are called by themselves as SIMI. The Semas are shorter in stature with strong pronounced mongolian features. They inhabit Zonhebotu district, but they are also, found in large number in the neighbouring districts and as well as in neighbouring states. They have migratory habits and often set up their new villages by making one of them as their chief of that village. Their jhum cultivations consists of rice & maize. Semas have a very high bride-price and it is paid in kind and cash. They decorate their head with a thick beautiful head-band surrounding their forehead and perforate their ears with long dyed

goat-hairs and flowers. They bury their dead near their house. Tuluni is the main festival and other festivals are Sagher, and Awenakuchu

Phom:- Phoms inhabit Mon and Tuensang Districts. Formerly they were grouped under the Konyaks. They have their own dialects. They practise jhum cultivation though their diet is inferior as the sources of cultivation is poor. They have their own trend towards religious beliefs and practices. Their major jhum cultivation is rice. They dispose their dead bodies by exposure on open platforms. Their main festival is called 'Monyu' observed in the first week of April.

Konyak:- They inhabit in Mon district and Tuensang District and are the largest of the Naga tribes. The life and culture of the Konyaks is a bit similar with the 'Bondo' people of Orissa. They are darker in complexion than the other Nagas. This tribe is comparatively less developed than the other tribes of Nagaland. They have not acquired much knowledge about the skill of weaving but they have a fantastic skill of technology. They were great head hunters till 1961. The Britishers introduced them to opium cultivation and made them addicts to exercise control over them. Major crops cultivated by them are yam, dioscorea, millet, jobs-tears. They have hereditary powerful chief called "Angs" whose word is law. An Ang's son have to marry only with another Ang's daughter and vice versa. They practice trial marriage among them and they have greater sexual liberty before marriage. Their dress is poor, Men shave their heads leaving a small tuft in the middle and allow the straight hairs to fall forward over the

forhead. The men and women-folks are tatoored. Konyak tribesman are experts in wood carving, blacksmithy and gun making. Their main festival is called 'Aoling' celebrated in the first week of April.

Khiamungan:- They inhabits the western slope of the Patkai range and of the eastern most part of Tuensang District, who by physical extension are also found in Burma. They are fair in complexion. Their major cultivation are jhum are millet, jobs-tears, maize and ~~A~~maranthus, though currently rice and potatoes are also be grown in very high altitudes of 2,500m. Head hunting ceased among them in 1963. They have their strange marriage custom, where the boy marry a girl by abducting her from her house and they can marry several wives. The Khiamungan wears decorated headgear with two big tusks of wild bear. The women folks are tattoed. Their main festival is "Tsukum" which is celebrated in the 2nd week of October and the beer they use on such occasions are made of millet and maize.

This tribe was earlier known as Kalyo kengyu by the neighbouring tribes. Meaning "stone-house dwellers'. They used to cover the roof of their houses by dark grey slates. They are not a homogeneous people like the Chang's. The highest snow gap mountain other than the Himalaya in India is situated in their habitat.

Chang:- The Changs are a homogeneous people inhabiting the center most part of Tuensang Dist. They are polygamous and can marry four to six wives. They are fair complexioned, stout and

tall. Men wear a black coloured jacket with sleeves; decorated with white cowrie shells embroidered into figures of men. They wear a headgear made of cane and red dyed goat's hair with a decoration of hornbill-feather, necklaces of red coloured beads with two pendants of tigernails and ivory armlet. The women-folks, are tatoored. Their main cultivation in jhum^{or} millet, Jobs-tears and Amaranthus. They generally bury their dead. "Noknyulan" is their main festival celebrated in the first week of July.

Sangtam:- They inhabit the southern part of Tuensang district. They were head-hunders till 1946. They wear a headgear made of coloured plaited cane strips having two big tusks of wildbear on either side of the headgear and a feather of horn bill above this crown. The woman decorate their hair with a cane, made of thick narrow ribbons with a coloured cotton ball or normally with red flowers, and they are tatoored. Earlier they were habituated to consume opium, which is now discouraged. The jhum cultivation consists of rice, ginger, maize, millets. They generally bury their dead. 'Mongmong' is their important festival which is observed in the first week of September.

Yimchunger:- They mainly inhabited Tuensang District and a few are found in Burma. They are stout and tall in figure. Their main cultivation are millet, jobs tearss, amaranthus, and maize. The headgears are made of cane and red dyed goats hairs. Men and women are tatoored. They also generally bury their dead bodies. 'Meclemneo' is their main festival observed in the second week of August.

Religion and Belief

Naga religion do not fit in very well elsewhere. But it has been taken simply as source-material, for each of the standard monographs on the Nagas which gives full accounts of religious beliefs and practice. The human mind formed, as it is, for the reception of religious truth, is even in the rudest and most uncivilized state provided with certain ideas, which are distinct, when corrected and refined, to be the great source of consolation amidst the calamities of life. The Nagas apprehends to some invisible and powerful beings. These apprehensions, however, at first seems to be suggested to the mind rather by the dread of impending evils, than to flow from gratitude for blessings received. Hence probably it originated to worship the evil spirits. But Nagas have no established form of worship: they have no temple erected in honour of their deities and no ministers particularly consecrated to their service. They have the knowledge, however, of several superstitious ceremonies and practices handed down to them by tradition.

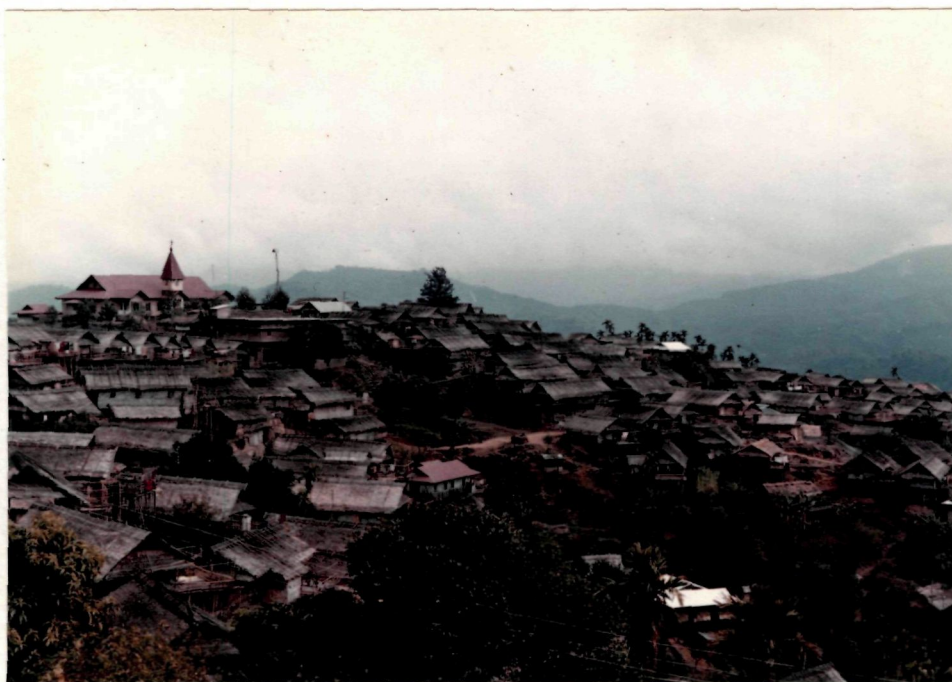
The Nagas, each tribe is different from the others in respect of language, culture, and religious believes and practices. It is difficult to treat the individual tribes in detail, but here deals with the common system to all Nagas and mainly the tribes of two District (Mokokchung and Tuensang).

The indigenious people of these two districts of Nagaland are scheduled tribes and they are to some extent still primitive. They have got primitive forms of belief and practices in respect of religion and God. Though there were a few Christian s before

1960. The spread of Christianity got momentum after the area came under the administration in 1948.

According to the old religion the people generally believed in three main different Gods. First of them is creator which approximates to the idea of supreme being. He lives very far high and does not interfere into day to days behaviour of human beings. The second God live high up in the heaven but often comes down to the earth and sometimes inter-marry with the human being. They are generally benevolent but may get angry sometimes. This resemble more or less with the Gods of Hindu pantheon. The third (3rd) group of God are spirits, and they live among the men unseen in their houses or in the jungles. They are even referred to as "Jungle men". Even they are heard sometimes calling people in the jungle, but on search are not found. These spirits are generally malevolent but benevolent to the persons to whom it is attached. It is believed that most of the sickness, accidents and untoward happenings are caused by these spirits and therefore they ought to be propitiated. It may be noted here that there is no Goddess in the Naga society, but all male-gods.

Beside Nagas have an intensive belief in the power of certain evil spirits which resides usually in rocks, water-pool and streams. Sacrifices are regularly offered to these objects by the villagers near them. In case of sickness pigs, dogs, fowls etc. are sacrificed in order to appear the particular spirit to whose malign influence the sickness is suppose to be due.



Above : Typical Ao - Naga Village at Waromong. The house roof are ———thatched with leaves of *Livistonia jenkinsiana*.

Below : Same at Changki Village.

PLATE-2



Above : Model of morung and the log-drum.

Below : Jhum fields (Shifting cultivation).

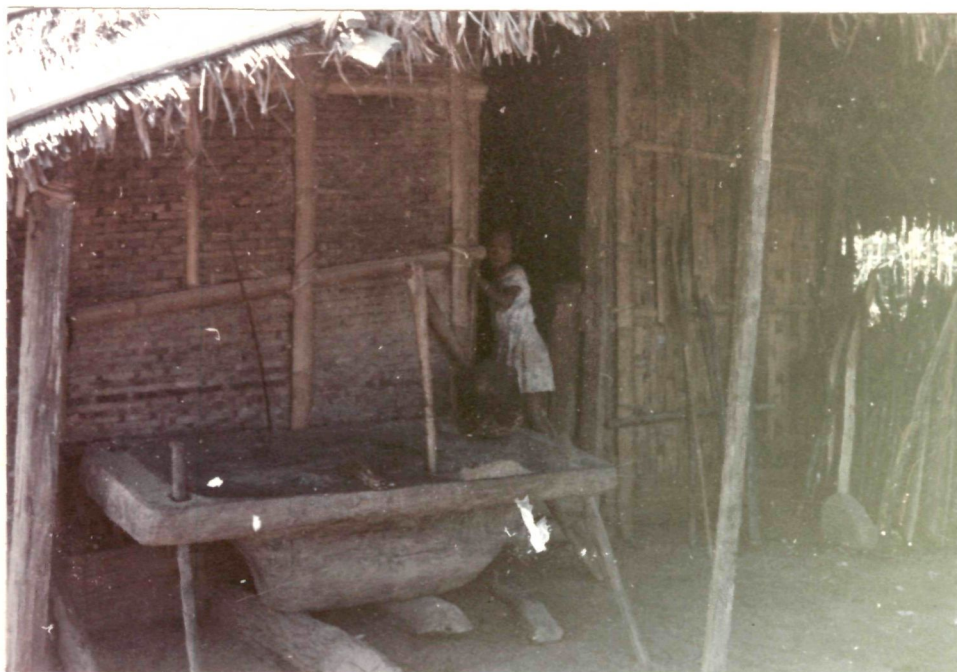
PLATE-3



Above : Khiamungan girl carrying water in bamboo; (*Dendrocalamus gigantea*) cylinders in a cane basket.

Below : Human skulls decorated with buffalo-horns and exhibited at the house entrance of a warrior (Head Hunter). [This system has been abolished by an order of the Govt. of Nagaland].

PLATE-4



Above : Konyak family (Father-sharpening dao, mother and daughter-husking millet in a horizontal mortar, and son - with head gear).

Below : Vertical husking mortar hewn out of a single log. /

CHAPTER - II

APPROACH OF STUDY AND METHODOLOGY

APPROACH OF STUDY AND METHODOLOGY

The study of ethnobotany is mainly field oriented work. The field study of relationship of aboriginals with surrounding vegetation gives first hand information. There are various methods to collect data and investigate traditional prescription for ethnobotanical studies. Apart from methodology discussed in this chapter, it is important to stress here that for more faithful data, persons who undertake such studies should be familiar or well versed with the local dialect.

During present study it has been experienced that for collecting faithful data it becomes very easy if person (inv.) is from same tribe. This can avoid repeated cross checkings and untrue stories by informer consulted for. If the enquirer is completely ignorant, he would be told lies by informants. Added to this villagers or informants suspect enquirer who is stranger to them as police informer etc. This is very much applicable for interior places of North-east region where underground problems are faced. The investigator being a Naga from Ao tribe well versed with Ao dialect as well as Nagamese- the common dialect of almost all the tribes of Nagaland, had the privilege in conducting this study.

During the field studies besides collecting information and plants used as herbal medicine, wild leafy or other vegetables, fruits, folklores and so on, ethnobotanical study is incomplete without gathering information on Historical and Anthropological background and close acquaintance with vegetation, flora and Fauna of the area. Therefore, keeping in mind all these above

discussed aspects, the present study was approached following proper methods.

Methodology followed in the present study is described below in a precise form.

1. **Planning:** After considering various factors like richness of an area having such practices (herbal medicine, folklores-practices etc.), feasibility and scope of ethnobotanical studies it was decided to undertake present study in Mokokchung and Tuensang district of Nagaland.
2. **Survey:** The survey was made on following aspects/points:
 - (a) Literature
 - (b) Anthropological studies
 - (c) Social Structure
 - (d) Historical background
 - (e) Geomorphology and
 - (f) Flora and fauna
3. **Field Study:** After preliminary survey of above mentioned aspects, field studies were undertaken to collect detailed information and data on the spot. Beside collecting informations on herbal medicines, wild vegetables-fruits, folklore, folk practices and beliefs, field data on vegetation types of the area were collected. Regular field studies extending over a period of five years were conducted in different parts of these two districts of Nagaland. Some of the places visited for present field study are shown in the map of study area (Fig.1) and informations were collected as follows:

Table 1

Field Data

- | | |
|-------------------|------|
| 1. Collection No. | Date |
|-------------------|------|
-
- 2. Locality
 - (a) Detail description of immediate locality
 - (b) District
 - (c) Altitude
 - (d) Habit and habitat
 - 3. Local name of the plant
 - 4. Family name
 - 5. Species
 - 6. Description
 - (a) Plant
 - (b) Leaves
 - (c) Bark
 - (d) Latex present
 - (e) Association or attack of insect etc.
 - (f) Flower description
 - (g) Fruit description
 - (h) Kind of predator
 - 7. Uses
 - (a) Plant part used for
 - (b) Method of uses
 - (c) Other uses if any
 - (d) Mode of administration/dosage
 - (e) Any incantation

8. Any other plants used with
 - (a) Family
 - (b) Ge nus
 - (c) Species
 - (d) Part used
9. Any other remarks
10. Name of the informer and address
11. Photographic data

These informations were collected from following sources:

- (a) Consulting herbalist, local medicineman
- (b) Information from important sources like: Administrative Officers, Village Headman, eldest and most experienced person of village, foresters and farmers.
- (c) Visiting forest and sacred grooves and cultivated field-farms with local informer and translator.
- (d) Consulting folkmagician and folkloriest
- (e) Visiting local vegetable markets
- (f) Enquiry from the relations
- (g) Photography and audio recording

Wherever necessary and possible photographs of plants, items and vegetation were taken and informations were recorded;

4. Preparation of Herbariums:

Following routine herbarium methods (Jain and Rao, 1976) herbarium specimens were prepared. These herbarium specimens have been deposited in the University herbarium (NEHU), with the voucher number as "Ethnobotanical study of Mokokchung and Tuensang District" , S.Ch. No.1 to 368.

5. **Identification:** Specimens collected were identified with the help of floras, local (NEHU) herbarium, Regional herbarium (Assam), National herbarium (CAL) and Kew herbarium(K). For bamboo identification Dr. Naithani FRI Dehradun, was consulted.
6. **Compilation and presentation:** The present study deals mainly with the Ethnobotany of Mokokchung and Tuensang districts of Nagaland based on extensive field work. Keeping in view the detailed accounts of district floras undertaken by other workers' emphasis has been given in the presence of study only to forests and vegetation types, and plant uses for herbal medicines, folklores, folk practices, wild edible vegetables and fruits etc. However, brief enumerations of most of the plants dealt in the present study/work have been provided at one place (Chapter IV). Therefore, ^Aseparate lists for herbal (medicinal) plants, wild edible vegetable, fruits, indigenous and other domestic uses of plants are provided in Chapter, V. The folk practices including beliefs and folklores are given in separate chapter (Chapter VI).

Basing on present investigation a brief discussion and prognosis have been given in the last chapter (Chapter VII). The discussion and prognosis are followed by bibliography and appendices.

PLATE-5



Above : The author (sitting at the centre) with administrative officers, securities and guards during field study near Burma Border.

Below : Field study Team crossing a hanging Bamboo Bridge.

PLATE - 6



Above : Author obtaining Ethnobotanical
inforamtions from a informant (Mr.
Imlongchang).

Below : Field study - Field assistant with the
plant specimens.

CHAPTER - III

1. VEGETATION AND FOREST TYPES OF STUDY AREA
2. SACRED FORESTS, VILLAGE COMMUNITY OR CLAN FOREST AND THIER ROLE IN CONSERVATION OF PLANT DIVERSITY

VEGETATION AND FOREST TYPES OF STUDY AREA

Nagaland state comprises the Patkoi range, which constitutes the South-East sub-Himalayan range. The entire state is hilly except the foothills in the West. Mokokchung and Tuensang districts run horizontally across the Patkai range from East to West starting from the Saramati range in the East to the foothills in the West (Fig. 2). The altitude ranging from 97m MSL in the foothills to 3840 m. MSL (Saramati Peak, the only snow-cap mountain in India other than the Himalayas) and in between these two points a series of steep mountains, narrow valleys and deep gorges are found.

The vegetation and the forests in the state exhibit distinct gradients depending on altitude, physiography, rainfall and soil types. Besides, the intensity of biotic interference either singly or in combination creates a striking variety of ecological situations. Exposed to the heavy rainfall of Monsoon current, the area is endowed with a rich flora due to high relative humidity and the rate of evaporation is low. The quantity of rainfall received in the area should have been sufficient to keep the vegetation green throughout the year. But for two reasons, firstly, due to hilly terrain of the land and high porosity of the soil, water retention capacity is less. Secondly, the plants at higher altitudes cannot stand the cold which lasts for about 6 months. As a result, most of the undergrowths including shrubs, herbs and grasses start drying-up from November continuing up to March. Further, the conditions are not uniform all over the area

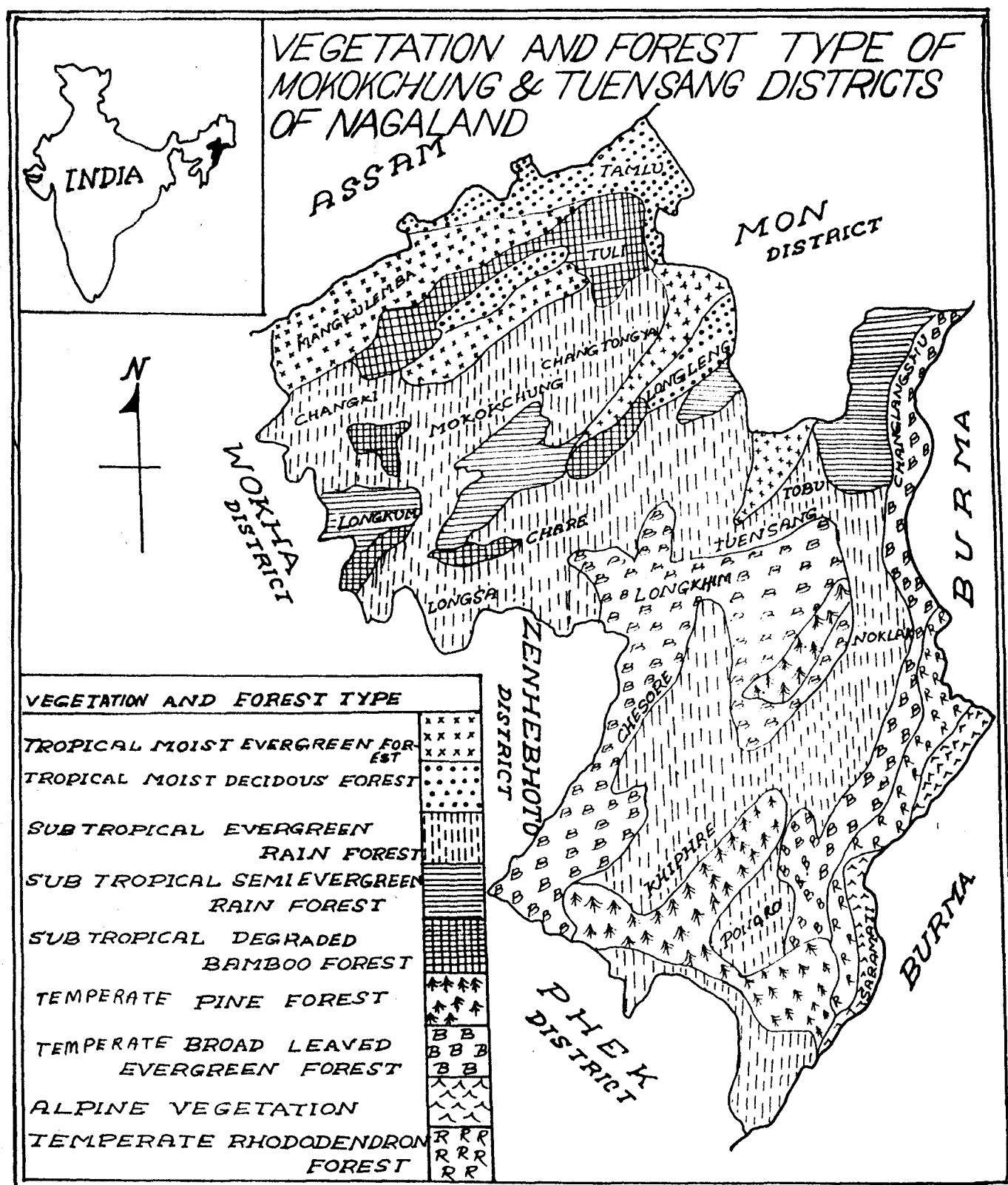


FIG. IV

but differ from the foothills to the hills and from the hills to the high hills. Moreover, the natural organisation of plant communities remain under constant threat of wide spread disintegration due to uncontrolled shifting cultivation. Considering all the above points, the forests of Mokokchung and Tuensang districts can be discussed under the following types.

I. TROPICAL

- (a) Moist Evergreen Forests
- (b) Moist Deciduous Forests

II. SUBTROPICAL

- (a) Evergreen Forests
- (b) Semievergreen Forests
- (c) Degraded and Bamboo Forests

III. TEMPERATE

- (a) Rhododendron Forests
- (b) Pine Forests
- (c) Broad-Leaved Evergreen Forests

IV. ALPINE VEGETATION

TROPICAL FORESTS

This type occurs in the North-Western part of the study area viz. Mokokchung district - along the foothills adjacent to Assam and a small patch in Tzula valley in between Mokokchung and Tuensang district. Much of the tropical forests are degraded relics of once luxuriant evergreen and moist forests. The tropical vegetation can be classified into two forest types based on

forest structure and microclimatic variations such as soils and rainfall.

(a) **Moist Evergreen Forests** : In this type of forest numerous plant species abound and is primarily allied to Assam Valley tropical evergreen type. These forests are generally restricted to a limit of 97m. to 800m. MSL and are found in Namsang, Tamlu, Changtang, Saring, Anaki, Kangtsung, Aonokpu and in lower valley of Tzula river. Dominant species in the forest are *Adina oligocephala* ^{= *Khasiaculnea oligocephala*}, *Alangium* sp., *Alstonia scholaris*, *Anthocephalus indica* ^{= *Chinensis*}, *Amoora wallichii* ^{= *Aglaia hiermii*}, *Aquilaria agallocha*, *Bombax ceiba*, *Canarium ^{strictum} resiniferum*, *C. obtusifolium*, *Chickrassia tabularis*, *Dillenia indica*, *Dipterocarpus macrocarpus*, *Duabanga sonneratioides*, *Ficus bengalensis*, *F. elastica*, *Gmelina arborea*, *Mangifera sylvatica*, *Mesua ferrea*, *Michelia champaca*, *M. montana*, *Morus laevigata*, *Phoebe goalparensis*, *pterosperrum accrifolium*, *Shorea assamica*, *stereospermum chelonoides*, *Talauma hodgsoni*, *Terminalia myriocarpa*, *T. chebula*, *Tetrameles nudiflora*, *Vatica lancaefolia*, etc. Climbers are represented by species of *Acacia*, *Bauhinia*, *Vitis*, *Entada*, *Calamus*, etc. *Gnetum gnemone*, *Leea indica*, *Zingibers*, *Saccharum* spp. and small bamboos are found growing as forest undergrowths.

(b) **Moist Deciduous Forests** : Occurrence of this type of forest overlaps several situations and plant association varies according to different ecological factors. However, this type of forest covers significant areas in Mokokchung and Tuensang districts from 100 - 800 m MSL. In the inner valley due to rain shadow effect (because of the alignment and configuration of the

mountains) the lower level vegetation is markedly of the Moist Deciduous type in contrast with the Moist Evergreen vegetation along the outer valleys adjoining the state of Assam in North-West and a small patch in Melak river valley near Tuli. This type of forest can be seen at Sonari, Tuli and Tzurang Valley. Dominant species in the forest are: *Ailanthus excelsa*, *Albizia lebbek*, *A. lucida*, *A. procera*, *Bombax ceiba*, *Butea monosperma*, *Cassia fistula*, *Dillenia indica*, *D. pentagyna*, *Engelhardtia polystachya*, *Ficus bengalensis*, *F. cunia*, *F. glomerata*, *F. pyriformes*, *Garuga pinnata*, *Kydia calycina*, *Lagerstroemia flosregina*, *L. parviflora*, *Lannea coromandalica*, *L. grandis*, *Mangifera sylvatica*, *Michelia champaca*, *Miliusa velutina*, *Phoebe goalparensis*, *Stereospermum chelonoides*, *Terminalia chebula*, *Terminalia myriocarpa*, etc.

SUB-TROPICAL VEGETATION

Sub-tropical vegetation does not climb high altitude and is restricted generally to a limit of 1850 m MSL. Numerous species abound and is allied to Assam hills evergreen type. They also occur as a mixed association of evergreen and deciduous species with bamboos occurring in almost pure patches covering extensive areas as a result of secondary succession following degradation of evergreen forests. In the inner valley due to rain-shadow effect on the alignment of the mountains the low level vegetation is markedly of moist semi-evergreen type in contrast with the evergreen vegetation.

(a) **Evergreen Rain Forests** : Occurrence of this type overlaps several situations. The floral association varies according to various ecological factors. However, this type of forest covers significant area. A rich variety of species goes into the composition of the multistoreyed forest. This type of forest occurs in Ongpangkong range (Longsa, Longkhum and Mokokchung). Asetkong range and Longpangkong range of Mokokchung district. In Tuensang district these forests are found in Chare, Phom, Tobu, Noklak-Pangsa area, Khephire and Pongro. *Schima wallichii*, *Gmelina arborea*, *Albizia procera*, *Melia azedarach*, *Garuga pinnata*, *Ailanthus* sp., *Tetrameles nudiflora*, *Terminalia* ^a sp., *Lithocarpus dealbata* ^a, *Grewia* sp., *Tannea coromandelica*, *Quercus dealbata*, *Q. serrata* ^a, *Castanopsis* sp., *Lithocarpus kamenga*, *Stereospermum chelonoides*, *Alstonia scholaris*, *Eugenia* ^{Syzygium} *cuneata* ^{um}, *E. jambolana* ^{Syzygium cumini}, *Myrica indica*, *Mangifera sylvatica*, *Bischoffia javanica*, *Syzygium* sp., *Gynocardia odorata*, *Mansonia dipikae*, *Erythrina stricta*, etc. are the principal species found in the forest.

(b) **Semi-Evergreen Forests** : This is the most important forest type in which numerous species abound and is allied to Assam hills sub-tropical type. This type of forest does not climb high altitudes and occur in mixed association. Semi-evergreen forests are a transient stage and merges with deciduous species. In the inner valley due to rain-shadow effect on the alignment and configuration of the mountains, the low level vegetation is markedly of the moist deciduous type in contrast with the evergreen vegetation along the outer valleys. Principal species found in the forest are *Albizia lebbek*, *A. procera*, *Alnus*

nepalensis, Ardisia khasiana, Bauhinia purpurea, B. variegata, Betula alnoides, Bombax ceiba, Callicarpa arborea, Castanopsis. sp., Cinnamomum zeylanicum, Engelhardtia palystachya, Emblica officinalis, Eugenia cuneata, E. jambolina, Ficus bengalensis, F. elastica, F. glomerata, F. pyriformis, F. heterophylla, Gmelina arborea, Grewia sp., Litsea angustifolia, ^{baligna} L. citrata, L. cubaba, Lannea coromandelica, Mangifera sylvatica, Melia sp., Myrica esculenta, Phyllanthus, sp., Prunus sp., Quercus sp., Schima khasiana, S. Wallichii, Stereospermum chelonoides, Xanthoxylum rhetsa, X. Z. armatum, Areca sp., Caryota sp., Pandanus sp., Dracaena sp. and various bamboos. Lianas and Climbers are represented by species of Entada perseatha members of Vitaceae and Cucurbitaceae respectively.

(c) Degraded and Bamboo Forests : This type occurs in almost pure patches over extensive area as a result of secondary succession following degradation of evergreen forests. During the past several centuries and the early decades of the current one, the forests came under the pressure of extensive agro-economic movement, as a result of which in large areas the original form and structure of vegetation have been modified by the events of human history. In the areas under study, degraded bamboo forests are met within Tuli, Japu range, Ongpangkong range, Asetkong range. Principal species are Dendrocalamus hamiltonii, D. hookeri, D. patellaris, Bambusa balcooa, B. nutans, B. pallida, B. tulda, Melocanna baccifera, Pseudostachyum polymorphum, Teinostachyum dullooa, T. griffithii, etc. in association with other species namely, Alstonia scholaris, Albizia lebbek, A. procera, Alnus nepalensis, Betula alnoides, Bombax ceiba,

Erythrina stricta, *Eugenia* sp., *Ficus elastica*, *F. glomerata*,
Macaranga denticulata, *M. indica*, *Litsea citrata*, *Morus indica*,
M. laevigata, etc. - *M. macrocarpa* - *M. australis*

TEMPERATE VEGETATION

This type is well represented in the higher altitudes between 2000m. and 3000m. MSL. High altitude and high humidity coupled with heavy rainfall in the area have favoured a high diversity of plant species.

(a) Pine Forests: This type of forest is brought about by the intercepting mountains of great heights creating low rainfall regions in areas lying in the range of 2000m to 2400m. MSL. *Pines kesiya* is the dominant species in the forest. At low elevation slopes there is an admixture with *Quercus*, *Castanopsis*, *Albizzia*, etc. Pure pine patches ascend the higher hill slopes and ridges on the sunny aspects. The presence of *Phoenix humilis* is a distinctive character. In the higher reaches orchids richly adorn the forest. Principal plant species are *Pinus kesiya*, *Phoenix humilis*, *Albizzia procera*, *Bauhinia variegata*, *Quercus dealbata*, *Q. serrata*, *Castanopsis* sp., *Emblica officinalis*, *Rhus succidenia*, *Rhus jayanicum*, various orchids, ferns, etc. This type of forest is met with in Khephri, Pongro, Yakko and Changsang range.

(b) Broad-Leaved Evergreen Forests : This type is well represented above 1700m. MSL at Longsa and Longkhum in Mokokchung district and at Hellipong, Chentang saddle, Chesore, Changsang range, Yakko peak and Saramati range in Tuensang district. The

type is characterised by the prevalence of *Quercus* and *Castanopsis*, which are almost always present and form an important part of the forest. Principal species met within this type of forests are *Acer campbellii*, *A. isolobum*, *Agapetes* sp., *Alnus nepalensis*, *Betula alnoides*, *B. utilis*, *Castanopsis hystrix*, *Cinnamomum zeylanicum*, *Cinnamomum glanduliferum*, *Lithocarpus elegans*, *Lithocarpus pachyphylla*, *Litsea citrata*, *Melia* sp., *Quercus lamellosa*, *Q. lineata*, *Q. griffithii*, *Q. serrata*, *Q. dealbata*, *Rhus javanicum*, *Rhus succidenia*, *Schima khasiana*, *Terminalia myriocarpa*, *Taxus baccata*, *Zanthoxylum montanum*, *Z. armatum*, various orchids, ferns, calamus and bamboos.

(c) **Rhododendron Forests** : Rhododendron forests occur in ridges at high altitudes ranging from 2100m to 3000m MSL. in Saramati range. Rhododendrons dominate the forest. Common Rhododendron species are *Rhododendron arboreum*, *R. barbatum*, *R. campylocarpum*, *R. dalhousiae*, *R. falconeri*, *R. hodgsonii* and *R. Wightii*. Other plant species commonly found in the forest are *Taxus baccata*, *Lithocarpus elegans*, *Betula utilis*, *Betula alnoides*, *Ilex* sp., *Berberis* sp., *Mahonia nepalensis*, etc. In this forest Lichen flora is very prominent with their luxurient growth on the tree trunks and branches as well as on rocks.

ALPINE VEGETATION

Alpine vegetation is met with at high altitudes in ridges of Saramati range, which remains covered with snow for major part of the year from October to April. During the mild summer, after

the melting away of the snow, few annuals, herbs and shrubs along with masses and lichens come up. High altitude grasses and dwarf Rhododendrons are also found but due to long period of snow cap the vegetation disappears.

FAUNA

Major part of the state being covered by forest and jungles there were plenty of birds, animals and reptiles. But in the wake of modern civilization which has brought guns to the state after the 2nd world war, those have been killed indiscriminately. It may be noted here that the people eat meat of any animal, sometimes including monitor (gain lizard) and snakes. And so the fauna wealth is no more a wealth except in some pockets of the forests. However, still the following birds and animals are found in the forests.

Wild Animals:

Generic name	Common Name	Local Name
<i>Elephas maximas</i>	Elephant	Shitty
<i>Panthera pardus</i>	Tiger	Merok kheyi
<i>Panthera tigris</i>	Tiger	Kheye/Akhu
<i>Felis bengalensis</i>	Jungle cat	Khoza-temeru
<i>Felis temonineku</i>	Golden cat	Khoza
<i>Felix chaus</i>	Spoted cat	Khoza tasu
<i>Neofelis nebulosa</i>		Merok kheyi
<i>Arcttratis benturong</i>		Sheo

Bois fondalis	Mithun	Mithun/Su
Bubalus bubalis	Wild Bufallow	Sumong
Cervus unicolor	Sambar	Shitsu
Cervus dyvayceku	Swamp deer	Shitsu
Cervus montiaca	Barking deer	Mesu
Tetracerus quadricornis	Four horned antelope	Mesu
Muntiacus muntjak	Barking deer	Tsupak mesu
Sus scrofa	Wild pig	Pongzu
Hystrix sp	Porcupine	Chepju
Manis pentadactyla	Pangoline	Kulep
Canis lupus	Wolf	Tsunu
Canis alpinus	Wild dog	Tsunu
Pteropus sp	Flying fox	Sungkojung
Hylopetes sp	Flying squirell	Sungkojung tila
Petaurista sp	Flying squirell	Mein susang
Ratufa macroura	Giant squirell	Mein susang
Ratufa furumeginnus	Squirell	Susang
Rhinolophus	Brown bat	Laa
Selenarctos thibetanus	Himalayan blackbear	Meinshirum
Hylobates hoolock	Hollock gibbon	Shero/Shenu
Macaca speciosa	Stamp tailed macaque	Mekut
Macaca macaque	Assam macaque	Alu shingo
Macaca mulatta	Rhesus monkeys	Shingo
Assam macaque	Assam macaque	Alu shingo

REPTILES

Varanus salvator 1	Giant monitor	Tsurang
Varanus Bengalensis L	Monitor	Tsurang
Python malurus	India python	Ngum
Dendroapsis angusticeps	Eastern green mamba	Sunga Kuntang
Trimerisurus styneri	Chenes green tree viper	Onger per.

BIRDS

Blythes tragopan	Tragopan	Tragopan
Psittacula Krameri	Rose ring parakeet	Oru
Upupa epops	Wood beaker	Sungskometsuba
Buceros bicornis	Great Indian Hornbill	Tennum
Pycnonotus jocosus	Red whiskered bulbul	Tsukpo
Passer domesticus	House sparrow	Alushijak
Dicrurus paradiseus	Greater racquet tailed drongo	Meeri
Cornus frugiligus	Rock black grow	Waro
Callus mungki	Wild folw	Omechi
Polyplectron bicalcaratum Bakeri	Polyplectrum	Otsu

White vulture, Black partridge, Grey partridge, Jungle bush quail, Grey jungle fowl. Common pea fowl, Green pigeon, Blue rock pigeon, spotted dove, rose ringneck, Koel, Spotted owl, Great horned owl, House swift, hoopoe, Malabar pied hornbill, Rock sparrow, Maharatta woodpecker, etc. are found in this two districts of Nagaland.

PLATE-7



Above : Sub-tropical evergreen vegetation
(cornfield - shifting cultivation in
Tuensang District).

Below : Tropical Evergreen Vegetation at Changki
Valley in Mokokchung district.

PLATE-8



Above : Saramati Peak (3840m. MSL).

Below : High altitude Temperate forest - top ridge is *Rhododendron* dominated forest and the lower part is broad-leaved temperate forest.

PLATE-9



Above : Bamboo clump (*Bambusa tulda*)

Below : Bamboo clump (*Dendrocalamus sikkimensis*).

PLATE-10



Above : Bamboo (*Dendrocalamus giganteus*) flowering in Noklak.

Below : Fleshy caryopsis of *Melocanna bambusoides*.

SOME OF THE COMMONLY ASSOCIATED BUTTERFLIES

1. Troides accus	:	
2. Delias discombesi	:	
3. Delias aglaia	:	Tree Butterflies
4. Delias aglaia	:	
5. Chilasa epycides	:	
6. Teinopalpus imperialis	:	
7. Heslima nama	:	
8. Delias thysbe	:	
9. Polyure evidamippus	:	Hilltop Butterflies
10. Polyure dolon	:	
11. Hebomoia glaucippe	:	
12. Charaxes polysena	:	
13. Limenclis denava	:	
14. Papilio paris	:	
15. Charaxes marmax	:	Swamp and water visiting Butterflies
16. Graphium Cloanthus	:	
17. Prrioneris thystytis	:	

**(B) SACRED FOREST, VILLAGE COMMUNITY OR CLAN FORESTS AND THEIR
ROLE IN CONSERVATION OF PLANT DIVERSITY.**

In Nagaland the forests and land tenure system is simple and has remained more or less unchanged. The simplicity of the system as well as its stability is in reality a part and parcel of the tribal culture into which it is fully integrated. The land and forest which is the principal source of livelihood for the community is traditionally owned by the community.

Sacred Forests:

The Religious beliefs as a system of faith and worhsip of super natural being and explaining everything in this universe "good or evil" as an act of propitiation or appeasement of these supernatural being is considered essential for betterment of an individual or society. It is known that our ancestors were mainly dependent upon the plants for shelter, food and herbal medicines. Even till today human society is still dependent upon the plants directly or indirectly. Specially tribal societies as already mentioned earlier depend mostly on their surrounding forests and vegetation. In case of Naga tribal society, the beliefs as a system of faith and worship of the supernatural beings in the form of nature and objects of nature were practised till christianity was introduced into the state. However, even now in interior villages near Burma border Nagas still practice the old system of beliefs.

Occasionally, there are sacred spots in the forests away from the villages where they still perform the sacrifices of chicken, pigs, egg etc. and various magical rites to invoke the aid of the Gods. Similarly, in case of crop failure, they blame themselves for some acts and perform magical rites. The people believe that a person suffering from a disease like hysteria etc. is possessed by an evil spirit. They attempt to effect a cure with the help of a "Arasentsur" (witchcraft or herbal medicine women) who perform rites over the patient. All these performances of sacrifices, rites are still performed in the sacred forests of the interior villages.

The sacred forests (gro^oves) are the forest pockets of climax vegetation preserved on religious grounds. Here all forms of vegetation including herbs, shrubs, climbers and flowers are supposed to be under protection of the reigning diety of the groove. The removal of even a small twig is taboo. This kind of preservation of entire vegetation associated with a diety is quite distinct from the preservation of isolated plants by Hindus for example *Ficus religiosa* or *Occimum sanctum*. These forest patches preserved on religious ground are the true indicator of the type of vegetation that existed along the hilly terrains, long before the dawn of modern civilisation. Due to advent of modern civilisation the aboriginals are gradually changing to the urban pattern. Further, with the conversion of the whole state to christianity, the natural heritage of the old system is vanishing. Consequently, many of the beliefs, folklores, folk practices, cultural heritage and customs etc. are being ignored

PLATE-11



Above : Sacred Reserved Forest in Hellipong,
Tuensang District.

Below : Sacred Reserved Forest in Mokokchung
town.

and are likely to be forgotten in the near future. The self-centered and inconsiderate urban folk have already started exploiting such forests in the study area as well as in whole state of Nagaland. However, few such forests are mentioned here which once maintained as sacred forests can still be seen with luxuriant vegetation irrespective of human disturbances:

Name of the forests	Near the village/place	District
1. Alumokshi	Chujuyembang	Mokokchung
2. Changchanglong	Alongkhima	"
3. Entsulong	Impur	"
4. Longkongla-menden	Sungratsu	"
5. Longlangba	Longkum	"
6. Longphalong	Longpha	"
7. Meinkong tenem	Meinkong	"
8. Mokokchungtenum	Ao Mokokchung	"
9. Hellipong	Hellipong range	Tuensang
10. Longdok	Chesore	"
11. Saramati	Saramati range	"
12. Thanameri forest	Thanameri	"
13. Yakko	Yakko range	"
14. Yungnushang	Longleng	"

Village and Community forest:

As stated already, in Nagaland the forest and land tenure system is simple. It is the tribal culture that has built around the integrity and unity of the village, community, clan and families.

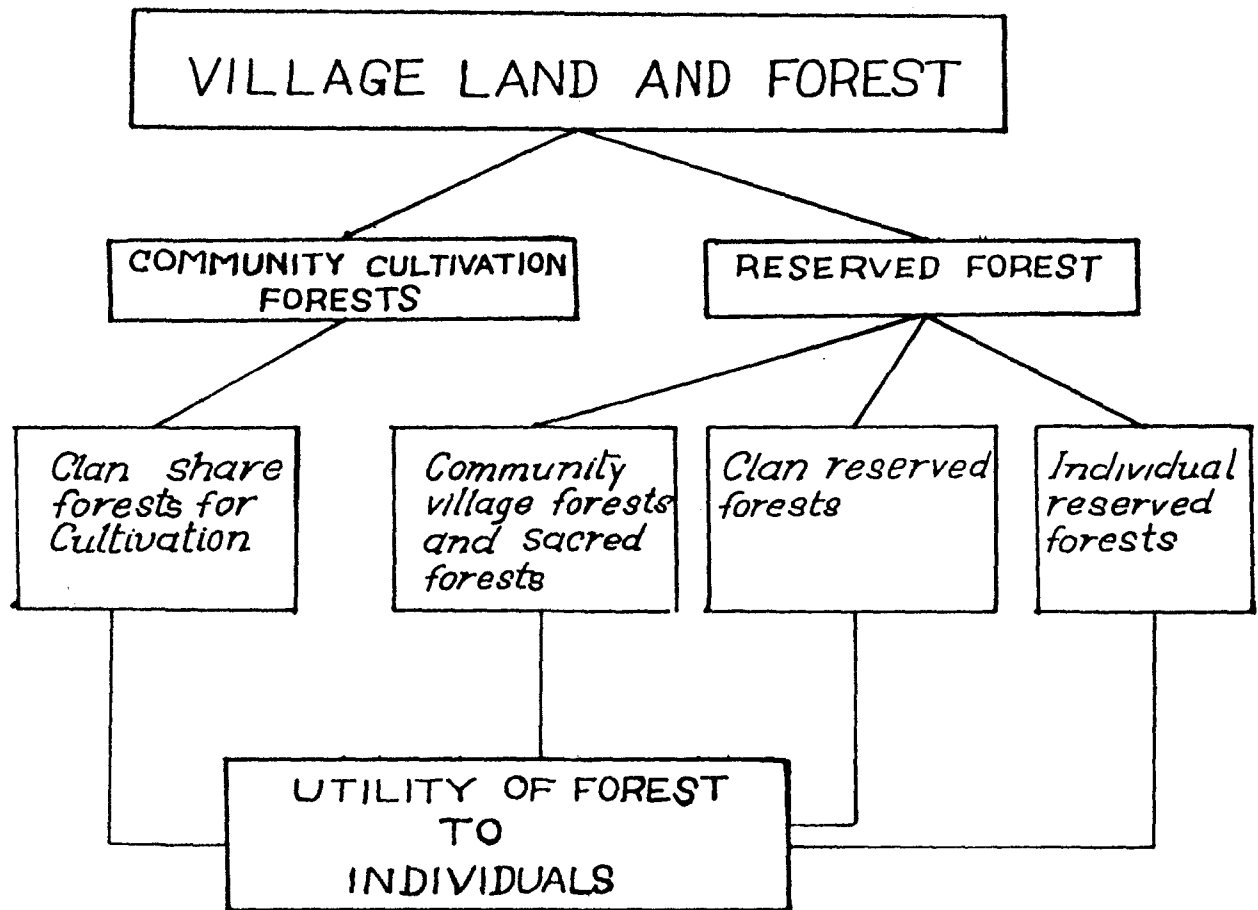


Diagram depicting utility of the forest system in the study area

FIG. V

Consequently, the forests are traditionally owned by village, community, clan and family. Every village and/or community has got its own, demarcated land and forests independantly. Within that the ownership may be in different categories.

Within the study area (i.e. the two districts Mokokchung and Tuensang of Nagaland) the total forest cover according to 1984-85 data (Nagaland Basic Facts, 1984-85) is 2,16,582 ha. Out of which 2,08,338 ha. belongs to private forests. The rest about 7,602 ha. is only under the government control (Forest department). The private owned forests can further be classified under four categories according to the land ownership.

- (i) Village Community forest
- (ii) Community reserve forest
- (iii)Clan forest
- (iv) Individual family forests

(i) Village Community (Jhum) Forest

It covers the largest or major part of land and forest in a village as well as in the state. In this land or forest mainly agriculture (cultivation) is practiced. It may be shifting (Jhum) or terrace cultivation, horticulture practice and dairy farming by the individual family or individuals. Generally, in this category, forest or land is demarcated and shared by various clans and again within the clans individuals. And accordingly shifting cultivation is practiced in these forests on rotation basis of the area. These are mostly the secondary forests and once they reach to successional or some times to sub climax stage, are again

slashed and shifting cultivation is done. Even though individual family has a share of land one does not hold the right of ownership. These forest or lands are indirectly under the village council headed by the clan representatives, called village elders.

(ii) Community reserve forests

This part of village forests are always kept as reserved forests for general requirements. These are maintained near the villages or surrounding the village as well as far away from the villages. Such forests may be few or many in numbers. These forests are usually of climax type covered with trees and variety of other species. The general requirements such as medicinal herbs, fruits and fire woods etc. are being allowed to be taken by the villagers from these forests. The falling of trees is not allowed by individuals from these forests. Village council has the right and ownership of these forests.

(iii)Clan reserved forests:

Every clan in a village possess their own forests, which are usually reserved forests, with the full rights and ownership of the clan. The village community even has no right in these forests. The size of the forest may vary depending on the size of the clan. Only the clan have the right to get their requirements and forest products from these forests. If a family or one individual of a clan required some fellings for constructional works and during celebration of

any special occasion it must be with the permission of the clan.

(iv) Individual family reserved forests:

These are usually small reserved forests belonging to an individual family having his right and ownership in whatever manner. Village community and clan does not have any right to these individual forests and lands. The present account on sacred, community village forest and land system in Mokokchung and Tuensang districts of Nagaland throw a light on conservation of forest ecosystem through traditional Naga culture. It explains how the traditional culture and folk practices of Naga tribes have greatly helped in conservation of forests and plant wealth. Due to these practices several important plant species have been protected by the tribes. However, with the weakening of the religious structure and thereby beliefs, the very idea, and the existence of these forests and sacred groves are being undermined. Yet there are still some sacred groves and reserve forests, preserved till today among the tribal people of Nagaland.

Thus, the Naga society recognise the need to preserve the natural plant resources in order to maintain their survival vis-a-vis forest system in which they live. These forests are some of the

Note: Here it should be mentioned that the Sema and Konyaks have a slightly different land controlling system, the Sema have the system of "Akekao" (village chief) and Konyak call it "Ang" (Ang-ship, i.e. village chief), who controls the land/forest holding system.

remnants of climax vegetation survived possibly because of folk taboos.

A large majority of endemic and rare species grow here. These forests are the ideal home of several herbal medicinal plants like *Aconitum* sp., *Panax ginseng*, *Costus speciosus*, members of Menispermaceae, Berberidaceae, *Terminalia* species and so on. A superb, suppose to be extinct orchid *Bulbophyllum rothschildianum* was discovered during present study from the community/village reserve forest of Longsa in Mokokchung district. Beside bulbophyllums, several *Dendrobium* species viz. *D. densiflorum*, *D. Ochreatum*, *D. porphyrochilum*, *Pleone maculata*, species of *Coelogyne* etc. are found in profusion in Longsa, Longkhum and Minkong community reserve forests. Here several wild ornamentally important plants including *Begonia* form the dominant forest undergrowth. The ginseng *Panax ginseng* was discovered from reserve forests of Yakko in Tuensang district. A large varieties of *Rhododendron* are plentiful in Saramati forests in Tuensang district. They form the dominant forest species in Saramati reserve forests.

In addition to medicinal, ornamental or horticulturally important plants many wild edible plants which are otherwise rare like *Mangifrera sylvatica*, *M. andamanensis*, *Myrica esculanta*, *Pyrus pashia*, *Garcina* sp., and so on are met commonly in these forests. These, either in patches and many a time long stretches of broad-leaved forests are, thus, store house of a number of plant wealth. A number of medicinal, wild edible, fruits, leafy vegetables, food, fodder, fuel wood and horticulturally important

species are confined to these traditionally reserved forests through tribal folk practices and taboos.

Thus, these sacred and village/community reserve forests signify the role played by collective action with common consent of traditional folk beliefs in preservation of forests ecosystem. The folklores and beliefs of the tribal culture have relevance with the past history of the community and to their environment. However, due to the intrusion of modern culture and religious weakening, the folk practices are being forgotten and the forests are under threat.

CHAPTER - IV

SYSTEMATIC POSITION AND PLANT ENUMERATION
OF THE SPECIES DEALT

Acacia pinnata (Linn.) Willd.

Family: Mimosaceae

Local Name: Chakrang-aing

Locality: Mokokchung, Chare.

A sharp minute hooked climber; pinnae 5-7 cm. long, leaflets minutely cuspidate, both surfaces glabrous, lower grey-green; heads yellow; pod straight, 8-12 seeded.

Bark is made into paste and applied to snake bite and scorpion sting; leaves juice extract is mixed with milk and served to infants during indigestion; leaves paste is used as haemostatic; whole plant is crushed in the stream to stuff the fish. Plant is cut from the root stock and allowed to be attacked by a kind of wood borer which is a delicacy.

Sp. Examin: S.Ch. 1

Acanthopanax ^ggensing C.A. Meyer

Family: Araliaceae

Local Name: Tzudirmoli

Locality: Yakko, Hellipong, Saramati range.

Perennial herbs with rhizomes; roots stout, less branched, fusiform and thick; stem erect, simple, glabrous; leaves 3-4, verticillate, palmately compound, 5-6 foliolate; flowers greenish white.

Root is dried and crushed into powder and taken for the treatment of gastritis and urinine trouble, it is also applied to injuries. Young leaves are eaten as vegetable by Khiamungan tribe (Folklore is given in the Chap. VI).

Sp. Examin: S.Ch. 2

^e
Achyranth~~us~~ aspera Linn.

Family: Amaranthaceae

Local Name: Masu-rua

Locality: Khensa, Mekeli

An erect herb; leaves orbicular to obovate, rounded at the apex, velvety-tomentose; spikes terminal; flowers greenish white.

Infusion of root is drunk as astringent; leaves and inflorescence juice extract is drunk with water as purgative, diuretic; paste is applied to piles, skin eruptions. Plant is fed to domestic animals.

Sp. Examin: S.Ch. 3

Aconitum falfouru Stapf/

Family: Ranunculaceae

Local Name: Meri-mezem

Locality: Saramati range

Tuberous herb; leaves devided, ultimate division broad, upper leaves distant, pubescent when young, low^er petiolate, pale green below, inflorescence yellowish tomentose; flowers brilliant blue, helmet-shaped.

Tubers are crushed carefully in a bamboo cylinder jug with a pestle and the arrow is kept dipped in it for use in hunting.

Sp. Examin: S.Ch. 4

Aconitum palmatum D. Don

Family: Ranunculaceae

Local Name: Meri-mezem

Locality: Chentang, Konya range

A herb; root tuberous, paired, dark brown, dry and cylindrical; leaves 10-15 mm. in diam; sinus shallow, ovate, deeply cut, petiole long; flowers large, light purple and pedicels long.

Root is crushed and soaked overnight in water and drunk to relieve diarrhoea, dysentery, rheumatism; also drunk as tonic. (Higher altitude variety is more effective).

Sp.Examin: S.Ch. 5

Aconitum spicatum Stapf/

Family:Ranunculaceae

Local Name:Meri-mezem

Locality:Yakko

Erect tall herbs; leaves broadly ovate, 3-partite, 6-7 cm. long and 5-12 cm. wide; flowers in racemes, pedicillate, dull purple to blue; follicles 5, oblong, hairy.

Same as *Aconitum falfouru*.

Sp.Examin: S.Ch. 6

Acorus calamus Linn.

Family:Araceae

Local Name:Burma-ami

Locality:Cultivated in Jhum field.

Herbaceous plant with creeping root stock, leaves much distichous, ensiform, spathe a direct continuation of the scape; flowers small, whitish-green.

Root stock and young leaves eaten as vegetable, paste of the corm

one word

is applied as vulnerary; juice is applied in case of catarrach and conjunctiv^eitis.

Sp.Examin: S.Ch. 7

Acorus graminifolius Soland. ex Ait.

Family:Araceae

Local Name:Burma-ami

Locality:Cultivated in Jhum field.

Herbaceous plant, creeping root stock; leaves much distichous, ensiform, spathe continuing the ensiform peduncle; flowers small, whitish-green, cylindric spadix; whole plant is aromatic.

Same as *Acorous calamus*.

Sp.Examin: S.Ch. 8

Actephila excelsa (Dalz.) Muell.

Family:Euphorbiaceae

Local Name:Merphi (Arunachalis)

Locality:Japu, Waromong.

Small tree; young shoots minutely hairy; bark grey; leaves obovate or oblanceolate, or oblong-elliptic, acuminate, entire, glabrous; flowers in axillary clusters; fruits capsular, dipressed, globose, 3-angled, on a slender pedicel, upto 12 cm. long.

Young leaves eaten as vegetable and seeds are boiled and eaten as secondary food.

Sp.Examin: S.Ch. 9

***Adhatoda vasica* Nees,**

Family: Acanthaceae

Local Name: Kicharang naro

Locality: All over study area.

Evergreen shrub, bark smooth, young part pubescent; leaves elliptic, acuminate; flowers dense, white in colour with purple veins; capsule clavate, longitudinal, channelled, pubescent, 4-seeded.

Young twigs and leaves are crushed and the juice extract is mixed with the seed husk (powder) of Rhus Javanicum/Rhus semialata is drunk to treat diarrhoea and vomiting. It is drunk as an expectorant. Mature leaves are sun dried and smoked in pipe to relieve asthma. Leaves are heated on fire and applied during headach, Rheumatism and body pain. Leave paste is applied to treat fracture and sprain.

Sp.Examin: S.Ch. 10

***Aegle marmelos* Corr.**

Family: Rutaceae

Local Name: Mongmong-mesuk

Locality: Tuli, Merangkong, Tsurang Valley

A small tree, 10m. high; leaves alternate; leaflets 3-5, ovate-lanceolate, lateral sessile, terminal, long petioled; flowers 2-sexual, greenish white, 3 cm. in diameter, in short panicles, sweet-scented; fruit 5-12 cm. in diameter, globose, oblong or pyriform, yellow, pulp sweet thick and orange coloured.

Pulp of rip fruits are aromatic, cooling and laxative, juice of unripe or half-ripe fruit is drunk as astringent, digestive, stomachic and diarrhoea. Root bark used to intermittent fevers, and fish poison.

Sp.Examin: S.Ch. 11

Agapetes auriculata (Kurz.) Hk.f.ex Clarke

Family:Ericaceae

Local Name:Aeing naro

Locality:Hellipong, Chentang, Longkhum, Meinkong.

Epiphytic, stem thickened at the base; leaves serrated, elliptic, obovate-lanceolate; flowers red, globose; seeds escaping through pores round the disc.

Same as *Agapetes setigera*.

Sp.Examin: S.Ch. 12

Agapetes miniata Hk. f.

Family:Ericaceae

Local Name:Aingnarao

Locality:Meinkong, Hellipong, Noklak.

Shrub; branches stout, smooth; leaves alternate, elliptic-lanceolate, remotely serrate, acuminate, coriaceous, glabrous; flowers in glabrous corymbs with numerous short bracts; fruits globose.

Same as *Agapetes setigera*.

Sp.Examin: S.Ch. 13

Agapetes nana Hk.f.

Family:Ericaceae

Local Name:Aingnaro

Locality:Longkhum, Chentang

A small epiphyte; stem and branches thick, glabrous; leaves lanceolate, narrowed at both ends, entire, coriaceous, glabrous; flowers red; fruits globose.

Same as *Agapetes setigera*.

Sp.Examin: S.Ch. 14

Agapetes ^esatigera D. Don

Family:Ericaceae

Local Name:Aing naro

Locality:Chentang, Hellipong, Noklak, Meinkong, Longkhum.

Epiphytic shrub with tuberous base; leaves falsely whorled, elliptic, obovate-lanceolate, entire, toothed, acuminate: flowers scarlet red and tubular; fruits subglobose.

Used for making bird's lime. Fruits are boiled till it turns gelatinous. It is then mixed with the latex of Ficus elastica and poured into a bamboo jug. Bamboo splints are then introduced into the mixture and allowed to cool down. The bamboo splints are then taken out and arranged in quadrangular manner. In the centre of the quadrangular construction something relished by birds is placed as a bait for birds. Birds stick to the splinters (trapped).

Sp.Examin: S.Ch. 15

***Ageratum conyzoides* Linn.**

Family: Asteraceae.

Local Name: Imchenriza.

Locality: All over Nagaland

An erect annual herb, 30-90 cm. high; leaves petioled, ovate, heads blue or white and dense terminal corymbs; achenes black.

Root extract is drunk for anthelmintic, leaves are crushed^{ed} and the paste is applied to cure cuts and sores.

Sp. Examin: S.Ch. 16

***Albizia lebbek* Benth.**

Family: Fabaceae *Albizia lebbek*

Local Name: Meritsu sung

Locality: Changki, Japu range, Tuli area

A large deciduous tree; rough brownish grey bark with numerous small cracks; compound leaves.

Leaves and bark is crushed and^{are} introduced to streams to stuff the fish. Wood is excellent for burning charcoal and for domestic construction.

Sp. Examin: S.Ch. 17

***Albizia lucida* Benth.**

= *A. lucidior* (Steud.) Nielson

Family : Fabaceae

L. Name : Mokok

Locality : All over study area

Large deciduous tree, compound leaves, leaflets grey beneath, flowers in globose heads, fruits a pod, thin, brown and glabrous.

Same as *A. Procera*.

Sp. Examin. S.Ch. 18

Albizia odoratissima Benth.

Family: Fabaceae

Mimosa

Local Name: Mokoktalula

Locality: Mokokchung Dist, Chari, Longleng

A tall tree; young shoots dark and maroonish in colour, compound leaves; flowers in globose heads, fruits pod, thin, Dark brown and glabrous.

It is used in tanning, dying, fish poison, Anti-termite used for fencing.

Sp. Examin: S.Ch. 19

Albizia procera Benth.

Family: Fabaceae

Mimosa

Local Name: Sapanpai

Locality: Mokokchung Dist, Longleng, Chare.

Large deciduous tree, compound leaves, leaflets grey beneath; flowers in globose heads, fruit a pod, thin, brown, glabrous, 8-12 seeded.

Leaves crushed to a paste and used to kill lice and as shampoo for Silky hairs.

Sp. Examin: S.Ch. 20

Allium ampeloprasum Linn.

Family: Liliaceae

Local Name: Sangtam lasung.

Locality: Chare, Longkhim.

Robust plant with flat leaves, resembling garlic but differ in possessing numerous small bulblets among the foliage leaf bases; flowers purple in colour.

Leaves extract is drunk for stomach trouble and cough. Leaves and roots eaten as salad (vegetable.)

Sp.Examin: S.Ch. 21

Allium porrum Linn.

Family:Liliaceae

Local Name:Repjee (Leek)

Locality: Cultivated in the kitchen gardens and in jhum feilds.

Rhizomatous, flat, closely overlapping leaves forming a long neck; inflorescence umbels.

Crushed leaves mixed with fermented bamboo shoot and chilli is eaten to cure influenza. Leaf paste applied to treat fungal infection. Leek is also extensively used as vegetable.

Sp.Examin: S.Ch. 22

Alnus nepalenses D.Don,

Family:Betulaceae

Local Name:Entsung tong (Alder tree)

Locality:All over study area

Tall tree; branchlets glabrous, leaves shortly pointed, elliptic lanceolate, petiolate, male catkins in terminal drooping panicles; female catkins cone-like; fruit numerous, sub-cylindric, nuts with a membranous wing.

Decoction of the root is drunk for treatment of diarrhoea. Leaf paste is applied on cuts and compounds as haemostatic. Bark is crushed mixed with the seeds of Perilla Ocimoides ^{frutescens} and extract is used for dying into blood red colour.

Plant is grown in terraces on the field as a fertilizer plant as well as to prevent the soil erosion and for various domestic uses. It is an excellent fuel wood. (The roots of the plant is associated with Microrhiza and Frangia which helps in nitrogen fixation)

Sp.Examin: S.Ch. 23

Aloe ^b *barbadensis* Mill.

Family: Liliaceae

Local Name: Indian Aloe

Locality: Noklak, Toubo

Perennial herb; leaves thick, fleshy, sessile, crowded lanceolate, spine toothed in the margin; flowers in raceme, pendulous and yellow.

Purgative, in colon constipation and contraindicated in hemorrhoid menstruation and pregnancy. Also used as cosmetics.

Sp.Examin: S.Ch. 24

Alstonia scholaris (Linn.) R. Br.

Family: Apocynaceae

Local Name: Lazarongpang

Locality: Mokokchung Dist.

Evergreen tree; leaves 4-7 in a whorle, obovate, white beneath; flowers pubescent; fruit follicles, long, slender.

Juice extract of leaves and bark mixed with sugarcane is drunk for treating ulcers and gastric disorders; also mixed with crushed crab (black variety) is employed in curing cholera and dysentery. Latex is applied in sexually transmitted diseases, fungal attack in the body and to ear-aches. Latex is also used for inscription in wood. Wood is used for carving effigies.

Sp.Examin: S.Ch. 25

Alternanthera sessilis (Linn.) DC.

Family:Amaranthaceae

Local Name:

Locality:All over study area

A prostrate herb; leaves narrowly oblong, obtuse; flowers white in small, axillary sessile heads.

Leaves are made into paste and applied to snake-bite and scorpion bite. This plant is used by Nepalis as galactagogue (Med Plant of NEPAL).

Sp.Examin: S.Ch. 26

^{WS}
Amaranthus caudatus Linn.

Family:Amaranthaceae

Local Name:Arurang (Ruwa)

Locality:Tuensang

Erect glabrous herb; leaves elliptic obtuse; spike slender and drooping panicles.

Cultivated in Jhum fields; leaves are taken as vegetable; seeds as staple food. Husked seeds brewed to drink (beer), usually

served in festivals and ceremonial performances by Chang, Yimchunger and Khiamungan tribes.

Sp.Examin: S.Ch. 27

Amaranthus viridis Linn.

Family:Amaranthaceae

Local Name:Aluenjang naro (cocks comb)

Locality:Waromong, changki

Erect glabrous herb; leaves rhomboid; spikes slender in terminal and axillary panicles; fruits rugose.

This plant is grown in jhum field and in the kitchen garden. Leaves made to a paste and is mixed with the root paste of *Cardiospermum helicacabum* and is applied for healing scorpion bite and dog bites. Leaves are cooked and eaten during dysentery, seeds are thrown on the head of Mithun (*Bois fondalis*) during the sacrificial ceremony.

Sp.Examin: S.Ch. 28

Amomum subulatum Roxb.

Family:Zingiberaceae

Local Name:Melangosu

Locality:Changki range & Japu Range

Rhizomatous herb; leaves large, oblong, glabrous; flowers in spike, corolla lip yellowish white.

Rhizomes are crushed and applied in case of sprain and bone fractures. Fleshy bulb of the lower stem is used as harmer during the pricking of tattoo. Young tender shoot is taken as vegetable, inflorescence is made into paste and applied to snake bite. Juice

extract of the plant is drunk for the treatment of cholera, dysentery and gastric problems. Fruits and inflorescence are eaten as vegetable and also used in Rain making ceremony and for prediction of rainfall by the Ao-Nagas.

Sp.Examin: S.Ch. 29

Amphineuron apulentum (Kaulf) Holtum

Family:Thelypteridaceae

Local Name:Ma-a-chai

Locality:All over study area.

Fern grown all over in study area, front^d bright green, hispides with a strong pungent smell.

Leaves are pasted, mixed with *Hypericum japonicum* and is applied to tooth ache and kills the mag^gote in the tooth.

Sp.Examin: S.Ch. 30

Ananas comosus Merril

Family:Bromeliaceae

Local Name:Jeru

Locality:Changki, Changtongya, Merangkong, Chari, Medzephima.

Herbaceous; leaves in clustes spirally arranged; flowers terminal, white with a terminal crown of leaves above; fruits aggregate.

Fibres are extracted from the leaves, young fruits are eaten for abortion and the ripe fruits as desert.

Sp.Examin: S.Ch. 31

***Andrographis paniculata* Nees**

Family: Acanthaceae

Local Name:

Locality: Below 2500 mts, all over study area.

Erect small shrub; stems quadrangular; leaves narrow at both ends, ovate at base; bract linear; inflorescence sympodial; pedicil in the axil; scape pubescent, hairy; corolla white spotted, thinly hairy; capsule, glabrous.

Root and plant extract is drunk for treating influenza, also used as anthelmintic, stomach-ach.

Sp. Examin: S.Ch. 32

Angiopteris erecta *✓ author ?*

Family: Angiopteridaceae

Local Name: Meintekong asang

Locality: Hellipong

Fern grown in the shaded wood in the hills, Dark green, glossy fronds.

Rachis, young leaves and underground part : eaten as vegetable.

Sp. Examin: S.Ch. 33

***Anisomeles indica* (Linn.) O.Ktze.**

Family: Lamiaceae

Local Name: Azu-talula

Locality: Toubo.

Strongly scented, pubescent shrub-like herb; leaves ovate, coarsely crenate, acuminate, softly pubescent; flowers ~~prop~~plish

blue, in dense whorls on terminal shoots; Nutlets smooth, black ovoid.

Inflorescence is crushed and mixed with water and the juice extract is drunk to get rid of bladder and urine troubles; juice extract of leaves is also drunk to relieve stomach troubles.

Sp.Examin: S.Ch. 34

Anona squamosa Linn.

Family: Anonaceae

Local Name: Shingo polong

Locality: Changki, Japukong.

Straggling small tree; young leaves pubescent, mature shiny beneath; fruits aggregate, globose.

Crushed leaves spread as insecticide and applied in skin diseases; ripe fruit as dessert, fruit ^{ju}ice as refreshing drink.

Sp.Examin: S.Ch. 35

Anthocephalus *indicus* A. Rich. *chinensis* (Lamk.) A. Rich. ex Walp.

Family: Rubiaceae

Local Name: Arongtsuba

Locality: Japukong - Tuli belt.

A large deciduous tree, bole straight, with horizontal branches; leaves oblong or oblong-lanceolate; inflorescence in single heads; flowers greenish yellow.

Wood is used for making canoes, log drum, and in house building (quick growing sp. used in plywood, match sticks etc.).

Sp.Examin: S.Ch. 36

***Aquilaria agallocha* Roset**

Family:Thymelaeaceae

Local Name:Sungza/Akurr

Locality:Tzurang Valley, Changki Valley, Tuli area

Evergreen lofty tree with straight bole; leaves oblong, lanceolate, leathery; flowers small, white, silky; fruits obovate, reddish brown

It is a cordial export to abroad. Infected wood is soaked in water overnight and is drunk for the treatment of gout, rheumatism, for stomach trouble and druing Malaria fever. Bark is used as waist belt with small apron by the Konyaks. (Folklore of *Aquilaria agallocha* is mentioned in Chapter VI).

Sp.Examin: S.Ch. 37

***Areca catechu* Linn.**

Family:Arecaceae

Local Name:Kozu

Locality:Changki, Japu, Longchang

Solitary trunk about 15 to 30 mt. Leaves about 2 mt. with numerous leaflets glabrous, spathe glabrous and compressed, spadix much branched, rachis stout; fruits 4-5cm, smooth; orange colour.

Nut is chewed with *Piper betel* leaf and lime. The husk is used for cleaning and scraping utensils; leaves used for thatching, tree trunk used for building houses, bridges, and for channeling purpose (water pipe).

Sp.Examin: S.Ch. 38

Areca nagensis Griff.

Family: Arecaceae

Local Name: Aor koku

Locality: Changki, Japukong, Lengchang.

Solitary trunk 10-15 mt., leaves are longer than *A. catechu* about 2-3 mt., spadix about 35 cm, fruits small about 3-4 cm. long.

Same as *Areca catechu*.

Sp. Examin: S.Ch. 39

Argyrea speciosa Sweet

Family: Convolvulaceae

Local Name:

Locality: Mokokchung, Chare

Woody climber; leaves 10-30 cm. long, ovate, cordate, acute, petiole long; flowers deep rose, sub-capitate cymes and pedicillate.

Roots are crushed and juice extract is drunk to treat rheumatism and neurotic problems. Leaf paste is applied on cuts as haemostatic.

Sp. Examin: S.Ch. 40

Artemisia nilagirica (Cl.) Camp.

Family: Asteraceae

Local Name: Antsuksuba

Locality: Meinkong, Mokokchung.

Aromatic herb; leaves large, ovate, lobed, pinnatifid 2-3 sect, whitish tomentose beneath; heads globose or ovoid.

Plant extract mixed with red tea (without sugar and milk) is given for treatment of malaria. Plant is cut and spread in chicken cage to get rid of chicken ticks. Dried twig is rolled into cigar with palm leaves is lighted and tied in the waist belt to repel insects while working in Jhum field and in forests.

Sp.Examin: S.Ch. 41

Artocarpus lakoocha Roxb. *lacucha* Buch.-Ham.

Family: Moraceae

Local Name: Salitong / Sungkuptong

Locality: Changki Valley, Japu.

A large deciduous tree; leaves sub-coreaceous, long, oblong, alternate; flowers in axillary, globose, shortly stalked heads, male and female flowers from different axil.

Wood is used for construction work. Bark is eaten as betel nut with *Piper betel* and lime. Dried powder of the bark is applied as vulnerary on sores and pimples. Fruit is eaten; fruit juice is drunk as astringent; seeds are roasted and eaten.

Sp.Examin: S.Ch. 42

Arundinaria hirsuta Munro

Family: Poaceae

Local Name: Lijakjang-aoo.

Locality: Chentang, Yakoo

A small shrubby bamboo with single stems from the rhizome; Culm greyish-green 1-2.5m. tall, .5-1 cm. in diameter; Internodes upto 33 cm. long; Culm-sheaths papery, 15 cm. long and 2.5 cm. broad, rounded at the top, recurved; leaves oblong-lanceolate, 7.5 - 12 cm. long, 12.5 - 17.5 mm. wide rounded at the base.

Same as *A. rolloana* Gamble.

Sp.Examin: S.Ch. 43

Arundinaria rolloana Gamble

Family: Poaceae

Local Name: Lijakjang-aoo.

Locality: Chentang, Hellipong

A shrubby bamboo similar to *A. hirsuta*, stoloniferous with distant culms. Culms 2.4 m. tall, 2 cm. in diameter, slightly rough, somewhat flattened on one side; nodes swollen, lower rooting; Internodes 20-30 cm. long; Culm-sheaths 10-15 cm. long and 2.5 - 5 cm. broad; leaves 15-20 cm. long by 2.5 - 3.75 cm. broad, around at the base.

Extensively used for making arrows and for walls in house construction.

Sp.Examin: S.Ch. 44

Arundo donax Linn.

Family: Poaceae

Local Name: Arang

Locality: Changki Valley

Tall perennial grass; aerial stem hollow, noded, thin walled, often with a white scurf; leaves sheathed, drooping, tapering to a fine point; inflorescence large, long, feathery.

Used in making walls in construction of houses; for clipping *Imperata cylindrica* and *Jenkensia scholaris*; leaves for thatching the house.

Sp.Examin: S.Ch. 45

Asparagus officinalis Linn.

Family: Asparagaceae

? *Asparagaceae*

Local Name: Asangshi

Locality: Hellipong, Chentang.

Under shrubs stem climbing, roots thick and fleshy, branches unarmed, false leaves setaceous; true leaves membranous, acute; peduncles lax; single flower, dropping; young shoots thick fleshy.

Tuberous roots are cooked and eaten; juice extract of roots is drunk as blood purifier, tonic, hepatics, Diuretic, and CNS (Central nervous system); young shoots eaten as vegetable. (Plate: 19;a.)

Sp. Examin: S.Ch. 46

Asparagus racemosus Willd.

Family: Asparagaceae

?

Local Name: Asparagus

Locality: Hellipong, Chintang

Scandent erect undershrub; root stock stout, fleshy, creeping, bears tubers; leaves reduced to minute, spinose scales.

Root is eaten as vegetable; root extract is drunk for the treatment of kidney, bladder, liver and as aphrodisiac. Young shoot of the plant is eaten as vegetable. (Plate: 19;a.) Chemical content - Abundance of Amino succinamic acid, or asparagine, Vitamin B, C and carotene.

Sp. Examin: S.Ch. 47

Baliospermum montanum (Willd.) Muell-Arg.

Family: Euphorbiaceae

Local Name: Tsumar mozu

Locality: Changki Valley, Chari, Toubo

Stout sub-herbaceous leafy shrub, branching from the root; leaves glabrous, glandular, rigid, strongly veined base acute, cordate, stipules of 2 glands, dioecious flowers; capsule long, obovoidly 3 dynamous, seeds oblong, smooth, mottled.

Root extract is drunk to treat Jaundice, anthelmintic, carminative, diarrhoea, dysentery.

Sp. Examin: S.Ch. 48

Bamboosa balcooa Roxb.

Family: Poaceae

Local Name: Jangpu

Locality: Tsurang Valley, Tsuiong Valley

A tall, stout, densely caespitose bamboo; Culm upto 24m., 7.5-15 cm. in diameter, thick walled; Nodes swollen with a whitish ring above, hairy below; Internodes 20-45 cm. long; Culm-sheaths of two kinds, the lower short and broad, hairy on the upper surface; Leave lanceolate, sub-cordate, 16-32 cm. long and 12-24mm. broad.

Chiefly used as posts in building construction. Other uses of this bamboo ^{are} ~~is~~ discussed under "Folk Practices".

Sp. Examin: S.Ch. 49

Bambusa nutans Wall. ^{ex} & Munro

Family: Poaceae

Local Name: Longmi

Locality:Changki, Changtongia

Very similar to *B. tulda*. Culms green and smooth, white-ringed below the nodes, 7-14m. tall, 4-8 cm. in diameter; Internodes 36-45 cm. long; Culm-sheaths 15-22 cm. long, scattered black hairs on the back; Leaves linear-lanceolate, 15-30 cm. long, 2.5 - 3.75 cm. broad.

Mainly used in building construction for making floor mat, posts, walls and garden fencing. Other uses are discussed under "Folk Practices".

Sp.Examin: S.Ch. 50

Bambusa pallida Munro

Family:Poaceae

Local Name:Arang

Locality:Changki

A caespitose bamboo growing in thicks clumps; Culms smooth, fistular, 12-20 m. tall, 5.5-8.0 cm. in diameter, olive green; Internodes 50-80 cm. long, thin walled; Culm-sheaths 17.5 to 30 cm. long by 25 cm. broad, straight truncate at the top, glabrous; Leaves lenear - lanceolate, short petioled, ending in a subulate twisted point.

Mainly used in making mats for floors and walls in buildings. Other uses are discussed under Folk Practices "Bamboos"

Sp.Examin: S.Ch. 51

Bambusa tulda Roxb.

Family:Poaceae

Local Name:Longmi

Locality: Chungtia, Longkhum

A tufted bamboo; Culms reaching upto 22m., 5-10 cm. in diameter, thick walled in lower nodes, smooth, lower branches leafless, rigid, horizontal; Culm-sheath 15-22 cm. long by 15-25 cm. broad; Leaves linear-oblong, rounded or cordate at the base, 11-32 cm. long, 17-40 mm. broad.

Same as *B. nutans*.

Sp. Examin: S.Ch. 52

Bauhinia purpurea Linn.

Family: Caesalpiniaceae.

Local Name: Noksangtsuben

Locality: Changki range, Tsula valley

Middle size tree, leaves are deeply lobed, cordate at base, lobes elongated, ovate, raceme, tomentose; flowers white with purple veins.

Same as *B. variegata*.

Sp. Examin: S.Ch. 53

Bauhinia variegata Linn.

Family: Caesalpiniaceae.

Local Name: Noksangtsuben

Locality: Khensa, Mekeli

A medium sized tree with ash-coloured bark, fracture granular; leaves deeply lobed, cordate, leathery; flowers in clusters, large, fragrant, pinkish with purple veins or variegated.

Root paste is applied as antidote to treat snake bite; decoction is drunk to relieve sore throat, ulcers, tympanic gland trouble,

antiarthristis, and as astringent; bark is crushed and juice extract drunk to treat diarrhoea, dysentery, dyspepsia. It is also useful against skin diseases.

Sp.Examin: S.Ch. 54

Begonia flaviflora Hara

Family: Begoniaceae

Local Name: Kokralik

Locality: In deep wood forest of high altitudde in Tuensang Dist.

Slender herbs; leaves ovate, acutely lobed, soft petiole brown, tomentose; flowers yellow with acute thin sepals.

Same as other *Begonia* sp.

Sp.Examin: S.Ch. 55

Begonia palmata D.Don

Family: Begoniaceae

Local Name: Kokralik

Locality: All over study area.

Erect herbs; leaves, ovate, suborbicular, lobed, unequally at base, caudate-acuminate at apex, serrulate.

Same as other *Begonia* sp.

Sp.Examin: S.Ch. 56

Begonia picta Sm.

Family: Begoniaceae

Local Name: Kokralik

Locality: Occur in Shaded places in Wood all over.

Slender herbs; leaves orbicular, ovate, acuminate, cordate,

finely serrate; flowers pinkish white.

Same as *Begonia rubrovenia*.

Sp.Examin: S.Ch. 57

Begonia *rubrovenia* Hk.

B. hatacoa Buch-Ham. ex D. Don

Family: Begoniaceae

Local Name: Kokralik

Locality: Meinkong

Slender, succulent, small herb; leaves lanceolate, minutely toothed at margins; flowers pink.

Leave paste is warmed and applied to treat mouth ulcer, bristle in the tongue; juice extract is drunk as astringent, to cure diarrhoea and dysentery; leaflets are eaten as vegetable. Matured root stalks are crushed and decoction is used for pink dye.

Sp.Examin: S.Ch. 58

Beilschmeidia ^h~~dia~~ *roxburgiana* Nees

Family: Lauraceae

Local Name: Arentong

Locality: Changki

Large tree, bark light grey, blaze soft, reddish brown, glabrous; leaves opposite or sub-opposite, elliptic - oblong or lanceolate elliptic; panicles, shorter than the laves, glabrous; fruits elliptic to ovoid or oblong; purple to black when ripe.

Wood used for construction works; fruits eaten by Deer, Hornbill; bark is crushed and juice extract is applied for massaging.

Sp.Examin: S.Ch. 59

***Benincasa hispida* (Tumb.) Cong.**

Family: Cucurbitaceae

Local Name: Maosu/Mapu-temesung

Locality: Cultivated in Jhum field.

Hispid annual, climbing plant; stem thick prominently furrowed, clothed with white hairs; leaves longer than broad, deeply cordate, acute or acuminate, irregularly lobed, stout pedioled; flowers solitary yellow, male with long hairy stalk female with short stalk fruits cylindrical, covered with white wax.

Fruits eaten as vegetable, and desert; white wax is scraped and applied on burns and sores. Seeds are roasted and eaten.

Sp.Examin: S.Ch. 60

***Berberis aristata* DC.**

Family: Berberidaceae

Local Name: Ayak tepa aing

Locality: Longkhum, Saramati.

A stout, erect, spinous shrub, bark whitish brown; leaves single foliolate, leathery, obovate; flowers small, pale-yellow in drooping, racemes, long stalked, berries ovoid, red in colour.

Wood is used for making walking stick; bark is crushed and soaked in water overnight and the decoction is drunk to treat antiperiotoxic, alternative, antilipypretic, uterine troubles, jaundice and as tonic. Bark decoction is used for yellow dye. Bunch of spines are tied in a bamboo clip called "Azialangba" which is used as adze during pricking tatoo marks on human body.

Sp.Examin: S.Ch. 61

***Berberis lycium* Royle**

Family: Berberidaceae

Local Name: Ayak tepa aing

Locality: Yakko, Pangsa, Saramati

Stout erect, spinous shrub, spines 3-parted, conical; leaves 5-8 in a cluster, pale, leathery, veiny, oblong-lanceolate or obovate, tapering to the base. The margins sprangly toothed or entire; flowers erect, spreading, small, externally scaly and lanceolate.

Same as *B. aristata*.

Sp. Examin: S.Ch. 62

***Berberis vulgaris* Linn.**

Family: Berberidaceae

Local Name: Ayak-tepa aing

Locality: Japu range, Meinkong, Longkhum, Hellipong, Yakko, Noklak

Stout, erect, spinous, deciduous shrub; leaves somewhat obovate, devided at the edge by ciliated teeth, in primary state 3-parted spines, Racemes many flowered, lax, pendulous, petals entire, fruits acidic, red when ripe.

Bark, same uses as *B. aristata*, Refreshing drink prepared from fruits is considered recriceable in fever.

Sp. Examin: S.Ch. 63

***Berberis wallichiana* DC.**

Family: Berberidaceae

Local Name: Meri-Ayaktepa aing.

Locality: Saramati range, Noklak

An erect, spinous shrub; branches angled; leaves simple, 3-partite spines, oblong-lanceolate, acute at both ends, glabrous, serrulate with very sharp spines; flowers yellow; berries oblong-ellipsoid, deep purple when ripe.

Latex (juice) is used in preparation of arowpoison for hunting animals. Bark is used for yellow dye, Roots extract is drunk for stomach problems, as liver tonic, pancrease tonic and foe blader infections. Wood is used for making walking sticks; spines are bounted in a bamboo clip called "Azialangba" used for bricking tattoo marks.

Sp.Examin: S.Ch. 64

Bergenia ciliata (How) ^{Haw.} Sternb.

Family: Saxifragaceae

Local Name: Longpak-wa

Locality: Longtok, Saramati peak

Perennial stout creeping herb; root stock orbicular; broad leaves with a cordate base, smooth, glabrous, ciliated, clothed on the lower surface of the leaves, reddish in the margin; flowers light pink, orbicular, fruits subglobose.

Rhizome paste is applied to treat bone fracture and sprains and is very effective. The decoction is also drunk for the same treatment and as tonic, astringent, cardiac diuretic, to diarrhoea, dysentry and for kidney treatment.

Sp.Examin: S.Ch. 65

Betula utilis Don

Family: Betulaceae

Local Name:Entsung/ongpangselem.

Locality:Saramati range, d Pongro.

Tall tree upto 10m. high; Bark papery, white spotted, peeling in horizontal; leaves oblong, ovate, acuminate, irregularly serrate.

Same as *Betula alnoides*.

Sp.Examin: S.Ch. 66

Betula alnoides Buch.-Ham.

Family:Betulaceae

Local Name:Entsung/Ongpangselum

Locality:Mokokchung

Tall tree upto 40m. high; silvery greenish spotted bark; leaves long, ovate, acuminate, unequally serrate; male and female spike long, slender, paniced, pendulous, female bracts hairy and narrow.

Wood used for building purposes and furniture. Bark is aromatic and eaten for digestion, it is also crushed and soaked in water overnight and used in taking bath to body-ache and fever. Wood is excelent for burning charcoal and as fuel.

Sp.Examin: S.Ch. 67

Boehmeria macrophylla D. Don

Family:Urticaceae

Local Name:Aoklachii

Locality:Occurs all over Nagaland in secondary forests.

Shrub; leaves opposite, lanceolate, serrulate; spikes elongate pendulous, seeds compressed ciliate with a 2-4 toothed neck.

Bigoled young twigs are fed to pigs to kill intestinal parasites. fruits are eaten and the leaves are used as fertilizer. The wood is avoided to burn during cooking, it is a believe that the smoke of this wood causes throat cancer called 'Sungra'

Sp.Examin: S.Ch. 68

Boerhavia diffusa Linn.

Family:Nyctaginaceae

Local Name:

Locality:Mokokchung

A common, perennial creeping herb, diffused by branched; leaves thick, ovate, oblong dark green; flowers minute, sub-capitate, in axillary and terminal panicles.

Roots extract is drunk for treating jaundice, asthma and for stomach troubles.

Sp.Examin: S.Ch. 69

^Δ
Bombax Ceiba Linn.

Family:Bombacaceae

Local Name:Azuben

Locality:Aliba, Changtongya

Tall deciduous tree, butteressed, branches spreading horizontally, young branches with prickles; leaves digitate; flowers red or scarlet on leafless branches; pod ovoid, long, velvety, woody; seeds membranous, embedded in white silky cotton.

Bark decoction drunk to relieve stomatch and urinary troubles.

Sp.Examin: S.Ch. 70

Borreria hispida K. Schum.

articularis (L.f.) F.N. Will.

Family: Rubiaceae

Local Name: Sunumra

Locality: Mokokchung

A procumbent scabrid, hirsute, hispid herb with perennial roots. Branches stout, 4-angled; leaves obovate, spatulate, oblong or elliptic, obtuse, scabrid above; flowers whorled, light blue in colour; capsule pubescent.

Tender stalk is introduced in to the uterus through the vagina and kept for about a minute for abortion. Plant is made into paste and applied to cuts as haemostatic.

Sp. Examin: S.Ch. 71

Brassaiopsis glomerulata Bl. Regd.

Family: Araliaceae

Local Name: Manen mozu

Locality: Changki

A small tree, young parts rusty tomentose, with blunt prickles, bark grey, leaflets 5 to 8, long, oblong-elliptic, oblong-lanceolate, acuminate, glabrescent beneath, hairy above; umbel with white small flowers, fruits subglobose.

Bark juice extract is drunk for digestion and constipation. Paste is applied to treat bone fracture and sprain.

Sp. Examin: S.Ch. 72

Brugmansia shaveolens (H.B.K.) Bercht & Prest

Family: Solanaceae

Local Name: Mezemnaro

Locality: Chuju yempang

Shrub or undershrub; leaves ovate-oblong, acute; flowers drooping, tubular, white, long; fruits ovoid-oblong.

Leaves made into paste is applied to relieve head-ach, Rheumatism, sprain and bone fracture.

Sp.Examin: S.Ch. 73

Brunella vulgaris Linn.

Family: Lamiaceae

Local Name: Anga-mejep

Locality: Changki

Perennial creeping ^{herb} (shrub) leaves ovate, sub-obtuse, obscurely toothed, hispidly hairy on both sides; petiole long; flowers purplish blue in dense whorls; smooth oblong nutlets.

Paste of the root is applied as an antidote to treat snake bite, spider bite and scorpion sting.

Sp.Examin: S.Ch. 74

Bryophyllum spathulata ^{um} 57 Salisb.

Family: Crassulaceae

Local Name: Nokchamoli

Locality: Changki, Changtongya

Erect, fleshy, stout, perennial herbs; leaves large, succulent, deeply pinnatifid twice or thrice; flowers deep orange to pale red.

Plant paste is applied in bone fracture, sprains, burns; leaves are warmed in fire and applied on forehead to relieve headache.

Chemical value - Malic acid, Quinone, Tocophenol. Alkoloids and saponin are present.

Sp.Examin: S.Ch. 75

Bryopsis laciniosa (Linn.) Naud

Family: Cucurbitaceae

Local Name: Warojakshi

Locality: Dipuia, Waromong

Climbing herb; tendrilar; leaves palmately five-lobed, petiole longer than the blade; flowers small, yellowish, males and females clustered in the same axil; fruit red.

Leaves are warmed and applied in case of bone fracture and sprain; paste is applied to treat bilious patients.

Sp.Examin: S.Ch. 76

Buddleja asiatica Lour.

Family: Loganiaceae

Local Name:

Locality: Meinkong, Longjang

Shrubs, 3m. high; leaves lanceolate, acuminate, serrulate; flowers white in slender, terminal or axillary spikes.

Plant paste applied to relieve skin diseases and as an abortifacient.

Sp.Examin: S.Ch. 77

Bulbophyllum ornatissimum (Rchb.f.) J.J. Sm.

Family: Orchidaceae

Local Name:

Locality: Meinkong, Mangaki.

Diploeycos palmatus (L.) Jeffrey

Pseudobulbs 2-3 cm. long, ellipsoid, borne apart on a creeping rhizome, 1-leaved; leaf long, oblong, fleshy, sessile; scape long bearing a solitary terminal flower; flower yellowish green tinged with purple.

Same as *Bulbophyllum rothschildianum*.

Sp.Examin: S.Ch. 78

Bulbophyllum rothschildianum (O'Brien) J.J.Sm.

Family: Orchidaceae

Local Name: Churong naro

Locality: Longsa, Mokokchung

Rhizomatous stem, pseudobulbs borne apart, pear-shaped, 4-angled, each 1-leaved; leaves fleshy, erect elliptic-oblong; inflorescence a terminal one sided umbel of bright crimson, blotched with pale yellow on sepals. (Plate: 15; a.)

Pseudobulbs crushed and the paste applied to treat bone fracture and sprains. It is also applied as haemostatic.

Sp.Examin: S.Ch. 79

Butea minor Ham. →

buteiformis (Voigt) Grierson & Long

Family: Fabaceae

Local Name:

Locality: Meinkong

An erect shrub with long switchy branches, leaflets coriaceous, glabrate above, grey silky beneath; racemes long, erect, angular, short branches; flowers red; pod long, rigid, sessile, cuneate at the base, rusty - tomentose.

Leaves are used for wrapping parcels; seeds are crushed and used as soap, juice extract of the seed is drunk as antihelmenthis, seeds are also fed to cattle. A kind of wood borer (caterpillar like worm) is collected from its root which is a delicacy.

Sp.Examin: S.Ch. 80

Butea monosperma (Lam.) Kuntze Taub.

Family: Fabaceae

Local Name: Tsupak naro

Locality: Tuli

An erect tree; leaves compound, three leaflets, stalked; flowers deep red, tinged with orange, appearing before the leaves on axillary racemes.

Bark made into paste is applied to relieve ^{from} snake bite; bark juice is drunk as tonic, for the treatment of diarrhoea, dysentery and as antihelmenthis. Flowers used as ornamental.

Sp.Examin: S.Ch. 81

Calamus floribundus Griff.

Family: Arecaceae

Local Name: Arr/Changtong

Locality: Japu, Lermen

Scandent, slender, with yellowish-brown scales, shrubs, leaves upto 1 mt. long; rachis, petiole and spathes with scattered spines, male spadix spinescent; drupe globose, small.

Acidic fruits are eaten, young shoot of the plant are eaten as vegetable. stem (cane) is used in various domestic and commercial purposes. It is used in making furnitures, basketry, decorative pieces, and in house building. The rattan splits are excellent

for binding purposes. Besides, this plant has got various utility in various traditional folk practices. The spines from the plant are made into a bundle and the bundle fixed on a bamboo stick is used for pricking tattoo marks. The fruits are taboo after the pricking work. The long leaves of the plant are made into a bundle, (by binding) the leaves at one end and is placed on a bamboo platform near a corpse believing that the bundle of leaves would serve as a broom to the dead person's spirit. Four rings made of rattans are put round the neck of the mithun to be sacrificed. A small basket containing some calamus leaves is also tied to the rattan rings. This sacrificial ceremony is called "Senlirakshiba". Leaves are also kept exposed on the wall near the entrance of the house while a family is performing the "Genna". The following species of Calamus occur in the study area (Mokokchung and Tuensang Districts) Which are used for the same puposes as *Calamus floribundus*:-

Calamus gracilis , *C. erectus*, *C. guruba*, *C. leptospadix*,

C. latifolius, *C. rotang* and *C. tannis*? tenuis

Sp. Examin: S.Ch. 82

Callicarpa arborea Roxb.

Family: Verbenaceae

Local Name: Kachet

Locality: All over study area.

Common throughout, evergreen small tree, corky rough bark, dark grey shallow fissures; Leaves elliptic-lanceolate, acuminate, glabrescent above, stellate tomentose beneath, flower purplish; Drupe green turning to purple when ripe.

Bark of this plant is chewed with the bark of *Ficus silhetensis* and the juice extract is used as red dye. Bark alone is chewed with betel leaf with lime as 'pan'. Bark paste is used as poultice to treat headache. Young twigs crushed and the juice extract is drunk for gastric treatment. During the time of head hunting Callicarpa was used in many ways by Nagas. After the head-hunting, heads were put in basket lined with Callicarpa leaves. The cut head was boiled along with bark and leaves of this plant with a few capsicum and little salt to clean off the flesh from the skull. Leaves are fed to cattle, the wood which is soft and corky is used in construction works.

Sp.Examin: S.Ch. 83

***Callicarpa rubella* Lindl.**

Family: Verbenaceae

Local Name: Kachet Tasula

Locality: All over study area in Secondary forests.

Erect shrub, leaves oblong-lanceolate, acuminate, crenate serrate, coriaceous hairy above, tomentose beneath, flower red in stellately tomentose; drupe purple.

Bark and roots chewed with betel leaves. Drupes are used in various bird traps.

Sp.Examin: S.Ch. 84

***Callicarpa vestita* wall.**

Family: Verbenaceae

Local Name: Kachet taluba

Locality: All over study area in secondary forest.

Small tree, bark brown, warty; Leaves larger in size than the former, ovate-acuminate, coriaceous, glabrous above, thickly silky white, tomentose beneath, flowers pinkish, fruits globose drupe, purple in colour when ripe.

Same as *C. arborea*.

Sp.Examin: S.Ch. 85

Calotropis gigen^aatea Br. (L.) R. Br.

Family:Asclepiadaceae

Local Name:Nokarimoli

Locality:Japu range, Tuli

Large shrub, young parts mealy, leaves sub-sessil, thick, coriaceous, oblong-ovate, acute, base cordate-auricled; flowers bluish purple in umbellate; follicles recurved, tinged brown.

Leaves made into paste is applied for the treatment of leprosy, syphilis, burns and skin diseases.

Sp.Examin: S.Ch. 86

Cannabis sativa Linn.

Family:Cannabinaceae

Local Name:Ganja

Locality:Tuensang, Longkhim

Annual tall herbs, slender, grooved stem; leaves alternate, palmately divided, toothed, flowers dioecious; flowers pale yellowish green; achene minute, enclosed in the persistent perianth.

Decoction is drunk during stomach pain, malaria, pharadism,

dried inflorescence is smoked in pipe. Rope is made out of bark.

Sp.Examin: S.Ch. 87

Capsicum annuum Linn.

Family:Solanaceae

Local Name:Mersu

Locality : Cultivated in Jhum field and in Kitchen garden also in the forest.

Herbaceous plant, leaves entire, repand, glabrous; flowers pedicelled, axillary, white; ~~fruits~~ fruits long, conical in shape, dark red when ripe.

Fruits used as stimulant, externally as rubefacient in sore throat. Roots made into paste is applied to cure snake bite. Red chilli along with the tail-feather of a bird, Scarlet menivete or Drongo bird (Picrurus paradiscus) is worn as an ear-ring by the daughter of the person who sacrificed a Mithun.

Sp.Examin: S.Ch. 88

Carica papaya Linn.

Family:Caricaceae

Local Name:Mamazu

Locality:Cultivated in Jhum field and kitchen garden.

Short and soft wooded tree, branchless, stem large, leaves in clusters at the top of the stem, large, palmately divided; leaf stalk very long and hollow; flowers pale yellow; ~~fruits~~ fruits oblong and large, indehiscent; ripe seeds are black. (There are about three particular cultivar varieties commonly known as Naga chillies),

Unripe fruits are eaten for abortion. Ripe fruits as desert, meat is wrapped over night with the leaves to tenderize the meat. The leaves are burnt to ashes and used as soap and shampoo. The latex is applied in skin deceases and "ring worm" . The seeds are considered as anthelmintic, alcoholic, and vermifuge. Paparin (Alkoloid) is extracted from this plant; leaves contain 5.8% Protein.

Sp.Examin: S.Ch. 89

Caryota obtusa Griff.

Family: Arecaceae

Local Name: Mere-Asang

Locality: Changlangshu, Manyakshu

Tall palm, straight trunk upto 30 mt. high, cylindric, annulate, covered with long shallow cracks; leaves in a terminal crown; leaflets irregular, toothed or lobed like a fish tail; leaf-stalk very stout at the base, lower part naked; spadix upto 4 mt. long, stalked curved, branches very long, simple pendulous; flowers monoecious; fruits roundish, reddish.

Roots made into cordage, stem is hard and silicious, Outer cylindrical stem is used for construction works, made into water cannal, drums, water buckets, flooring inside the house, spears, and agricultural implements; . Pith is soft and starchy and is made into flour and used as staple food. Cakes, biscuits are prepared and also fed to domestic animals; leaflets used for thatching houses. Leaf fibres are made into ropes, which last for 20-30 years. Usually used for binding armours like spear dao-handle and also excellent for bow strings. It is also used

for tithering mithuns, buffaloes, cows and pigs. It is also used for making brushes and brooms. Young fruits are eaten as *Areca nut* and as antihelmenthic. It is served to domestic animals for the same purpose. Plant is expensive and is cultivated for its value

Sp.Examin: S.Ch. 90

Caryota urens Linn.

Family:Arecaceae

Local Name:Asang

Locality:Tuensang, Mokokchung

Tall palm, trunk straight, upto 25 mt. high; columnar, marked slightly with the annular cicatrices of the petioles; leaves pinnate, leaflets sub-ternate, sessile, oblique, spadix pendulous covered with innumerable sissele flowers, berry roundish-covered with thin yellow acrid bark.

Same as *Caryota obtusa*, starch content is negligible and it being a very good lightning arrester is planted away from houses.

Sp.Examin: S.Ch. 91

Cassia fistula Linn.

Family:Caesalpiniaceae

Local Name:Drum stick

Locality:Tuli, Watiyem

Middle sized tree; compound leaves, abruptly pinnate; leaflets long, ovate, acute, stalked; flowers large, showy, bright yellow in long axillary racemes, fruit a pod 30-60 cm. long.

Leaves made into paste is applied in ring worm and skin diseases;

paste of the Bark and roots is applied to cure snake bite and scorpion sting.

Sp.Examin: S.Ch. 92

Castanopsis indica (Sm.) DC.

Family:Fagaceae

Local Name:Kozu

Locality:Common throughout province

A large tree; bark greyish, warty, deeply fissured vertically; leaves elliptic-oblong, acute, spinous-serrate, coriaceous, glabrous above; male spikes in lax panicles, female spikes axillary, solitary, ripe involucre, thin walled, densely covered with spines.

Nuts roasted or unroasted are eaten; wood is used for timber and for various domestic purposes. Handsome "Y"-shaped plants are felled and after removing the bark are kept erect in front of a rich man's house. It is a traditional way of showing the number of how much Mithun has been sacrificed by the particular house. The number of "Y" post representing the number of mithun sacrificed.

Sp.Examin: S.Ch. 93

Centella asiatica (L.) Urb.

Family:Apiaceae

Local Name:Imsenkorokla

Locality:Occurs all over study area.

Perennial creeping herbs, stem prostrate, rooting at the joints; leaves orbicular, glabrous; flowers small, whitish or pink;

fruits, oblong, sub-cylindrical, curved; seeds compressed laterally.

It is eaten as vegetable, for the treatment of dysentery, diarrhoea, as tonic for liver, spleen gastric problems, blood purifier, diuretic and nervousness. Plant extract is also applied as hair tonic.

Sp.Examin: S.Ch. 94

***Cephalostachyum capitatum* Munro**

Family: Poaceae

Local Name: Awaza

Locality: Chentang, hellipong

Culms semi-scandent, 4-15m. long, 24-35 mm. in diameter, pendulous over the branches of trees; Internodes upto 1m. long, thick walled; Culm-sheath thin, 15-20cm. long, 50-60 mm. wide, papyraceous towards the top on young culms. Leaves pale-green.

Same as *Dendrocalamus* sp.

Sp.Examin: S.Ch. 95

***Cephalostachyum fuchsianum* Gamble**

Family: Poaceae

Local Name: Meri-Awa

Locality: Chentang, Yakko

A medium-sized, arborescent, semi-scandent bamboo; Culm 8-20m long, 3-4cm. in diameter, thick walled, soft, verticillately branched from the nodes; Internodes upto 1m. long, dark green; Culm-sheaths thin, striate, veined at the edge, 30 cm. long by 10 cm. broad; Leaves large, 20-25cm. long, 6-8cm. broad, ovate-

lanceolate, cuspidately acuminate with twisted point.

Same as *C. capitatum*.

Sp.Examin: S.Ch. 96

Cessampelos pareira Linn.

Family: Menispermaceae

Local Name: Tsungrembang moli

Locality: Meinkong

A tomentose twining shrub with woody root; leaves ovate-orbicular, base cordate, branched and silvery leathery on the surface of the leaves; Fruits drupe, ovoid, deep red when ripe.

Plant paste applied to treat fracture, burns; juice extract is drunk to relieve stomach troubles.

Sp.Examin: S.Ch. 97

Chaerophyllum reflexum Lindl.

Family: Umbelliferae

Local Name: Mezen Pangpanglan

Locality: Chentang saddle, Hellipong, Yakko range of Tuensang Dist.

Slender erect, little branched perennial; leaves are compound, pinnate with lanceolate lobes further divided to ovate lobed segment, leaf-sheath inflated; flowers small umbels of white; fruits long, smooth, shortly beaked.

Roots are starchy, eaten as vegetable. It is also dried and made into powder and mixed with ginseng roots and water is drunk for sex stimulation, also applied as cosmetic.

Sp.Examin: S.Ch. 98

Chaerophyllum villosum ^VWall. ex DC.

Family: Umbelliferaea

Local Name: Mezen Pangpanglan terala

Locality: Chentang saddle, Noklak

Slender erect little branched perennial, having distinctive long stiff downward pointing white hairs on the lower part of the stem; Leaves are longer than *C. reflexum*. Flowers are whitish-pink; fruits are long and cylindrical.

Same as *C. reflexum*.

Sp. Examin: S.Ch. 99

Chenopodium ambrosioides Linn.

Family: Chenopodiaceae

Local Name: Antsuksuba

Locality: Ongpang range

An erect herb; leaves short-petioled, oblong or lanceolate; flowers small, green, in axillary and terminal panicle spikes; seeds small, black, shining.

Plant extract is drunk as anthelmintic. Plant is crushed and spread in chicken cage to drive away the flies. It serves an excellent insecticide.

Sp. Examin: S.Ch. 100

Chimonobambusa callosa Nakai

Family: Poaceae

Local Name: Meri - Ao

Locality: Saramati, Hellipong

A shrubby thorny bamboo; Culms 4-6 m. tall, 1.25-2.8 cm. in

diameter, greyish-green, smooth; Nodes raised in a ring, studded with thick, short, conical spines; Internodes 15-20 cm. long, thick walled; Culm-sheaths loose, thin, transversely veined, 22cm long and 2-4 cm. broad; Leaves wide, oblong-lanceolate, thin.

The culm is used for making hair pins, comb, etc. A kind of mouth organ is also made out of the culm. The bamboo is extensively used for domestic purposes but young shoots are not edible.

Sp. Examin: S.Ch. 101

Chimonobambusa griffithiana Nakai

Family: Poaceae

Local Name: Meri - aoo

Locality: Hellipong, Chentang

An erect bamboo; Culms erect, single, 3-10 m. tall, 2.5-4.0 cm. in diameter, olive-green; Nodes prominent, armed, downy hairs present round the node; Internodes 18-23 cm. long, striate, furrowed; Culm-sheaths striate, dark-brown, 15-23 cm. long, 10-13 cm. long and 10-15 mm. wide.

Same as *C. callosa*.

Sp. Examin: S.Ch. 102

Chloranthus branchystachys Bl.

Family: Chloranthaceae

Local Name: Ongchinaro

Locality: Hellipong, Longdok.

Shrubs; leaves elliptic or elliptic-lanceolate, deeply serrate; berries red.

Plant paste made out of twigs by crushing is used in the

Sarcandra glabra (Thunb.) Nakai

treatment of tiger and dog bite. Twig along with the red berries are ornamental and sold in market during Christmas.

Sp.Examin: S.Ch. 103

Cinnamomum (*Cecidodaphne* Meissn.)

glaucescens (Nees) Hand-Mazz

Family: Lauraceae

Local Name: Sungshi tulula

Locality: Meinkong

Large evergreen tree, aromatic; thick bark & dark brown; leaves strongly scented, elliptic, glabrous; flowers bisexual, in densely tomentose panicles; fruits oblong.

Wood is used in construction works; leaves are used as insecticide, bactericides and to drive away the evil spirit.

Roots and barks are used as substitute to *C. zeylanicum*.

Sp.Examin: S.Ch. 104

Cinnamomum (*obtusifolium* Nees)

bejolghota (Buch.-Ham.) Sweet

Family: Lauraceae

Local Name: Sungshi talu

Locality: Longkhim, Longdok

A medium evergreen tree, leaves often glaucous beneath, petioles; flowers small at the ends of the branches, long-peduncled, crowded panicles; fruit succulent.

Bark decoction is used in the treatment of dyspepsia, also used as liver tonic, astringent and stimulant.

Sp.Examin: S.Ch. 105

Cinnamomum tamala Nees and Ebern

Family:Lauraceae

Local Name:Sungshi mashila

Locality:Meinkong

Evergreen moderate sized tree; bark wrinkled; leaves glabrous, shining above, leathery, obtuse, 3-nerved from the base; drupe ovoid, ellipsoid succulent; Plant is aromatic.

Same as *C. zeylamicum*.

Sp.Examin: S.Ch. 106

Cinnamomum zeylanicum Blume

Family : Lauraceae

Local Name : Sungshi

Locality : Meinkong, Longkhum, Changki

Medium sized evergreen aromatic tree, wood-light red, hard, scented; leaves sub-opposite, variable large, oblong at low levels, small and oval at high levels, glabrous above, dull below, prominently 3-5 nerved.

Oil obtained from bark and leaves are used for various purposes. It is aromatic, antiseptic, astringent, anti-tubercular, blood purifier, carminative, counter-irritant, deodorant, dentifric, diuretic, expectorant, haemostatic, liver tonic, nervine tonic, soporific, stimulant, stomachic and tonic. It is also used in the treatment of asthma, catarrh, colic, cough, debility, dysentery, flatulence, gastric troubles, heart troubles, influenza, poisonous bite of insects, typhoid and vomiting.

(Essential oil contains cinnamic aldehyde, resin, tannin, glucose, starch and etc.)

Sp.Examin: S.Ch. 107

Cirsium falconeri (Hook.f.) petrak

Family:Asteraceae

Local Name:Ai-anu naro

Locality:Chentang saddle

Whole plant covered with spines giving a silvery appearance, annual shrub; stem robust, winged, spine; leaves linear, acute, with toothed margins, with spines; flowers light purple, heads globular.

Young tender shoot is taken as vegetable.

Sp.Examin: S.Ch. 108

Clerodendrum bracteatum Wall.

Family:Verbenaceae

Local Name:Astuksuba

Locality:Chesore, Noklak, Chujuyembang

Shrub, young shoots villous. Bark ash coloured, rough, thick. Leaves ovate, acuminate, entire, membranous, fairly scabrous above, flowers white, scented, in pedunculate bractate capitate cymes forming a tomentose corymbiform leafy panicles. Drupe globose, bluish purple, calyx red.

Plant paste is used as astringent. Juice extract is applied to kill lice and remove dandruff.

Sp.Examin: S.Ch. 109

Clerodendrum colebrookianum Walp.

Family: Verbenaceae

Local Name: Umrem

Locality: All over study area.

Small tree; leaves cordate; flowers numerous, clustered, bracteolate, rose-purple or white; fruit drupe.

Young twigs are boiled and eaten, soup is drunk to cure blood pressure, heart troubles and malaria; also used as an appetizer. Sold in market as vegetable. Infusion of the leaves mixed with bark paste of "menpan plant" is drunk as an antidote. Decoction of the leaves mixed with dried and pounded meat of tortoise is given to patients during high fever.

Sp. Examin: S.Ch. 110

Clerodendrum hastatum Lindl.

Family : Verbenaceae

Local Name : Atsuksubaorema

Locality : Longnak

Shrubs with annual shoots; roots woody; leaves opposite and or whorled, oblong - elliptic oblong, serrate, smooth, puberulous; Flowers flus white, in terminal panicles; Bracts maroon or dark red; drupe black, 4 seeded.

Leaf extract is drunk to treat malaria, also used as head wash to kill lice and is found effective.

Sp. Examin: S.Ch. 111



***Clerodendrum serratum* Spreng.**

Family: Verbenaceae

Local Name: Atzuksuba

Locality: Changki

Shrub or under shrub with woody root-stock; young branchelets quadrangular; leaves with a foetid smell, oblong, oblong-ovate or elliptic, oblong, coarsely serrate, acuminate, coraceous, glabrescent when mature; flowers red; drupe black when ripe succulent connate drupels.

Same as *clerodendron bracteatum*. Decoction is also drunk to antiperiodic and as tonic.

Sp. Examin: S.Ch. 112

***Clerodendrum villosum* Bl.**

Family: Verbenaceae

Local Name: Akawa

Locality: Meinkong

Tall shrub, villous; leaves broad-ovate, ovate-acuminate, chartaceous, tomentose above; flowers white; panicle tomentose, terminal; drupe black.

Juice extract of the plant is applied in head to kill the lice; Decoction is drunk to liver treatment.

Sp. Examin: S.Ch. 113

***Clerodendrum viscosum* Vent.**

Family: Verbenaceae

Local Name: Akawa

Locality: All over Nagaland.

Shrubs; leaves ovate to lanceolate, acute or acuminate, dentate, flowers white with pink tinge or red ; drupes blackish black.

Young twigs crushed to a paste and applied on the hair to kill lice and for silky hair.

Sp.Examin: S.Ch. 114

Coccinia indica W & A

Family:Cucurbitaceae

Local Name:Koktsulijang

Locality:Changki, Meinkong

A climbing hairy herb, tendrils, leaves petioled, 5 angular toothed, flowers dioecious, large and white colour. Fruits bright scarlet, fleshy, cylindrical and smooth, seeds many.

Roots are crushed and soaked in water and decoction is drunk as carminative and to cure mental problems. Fruits are eaten.

Sp.Examin: S.Ch. 115

Coelogyne longipes Lindl.

Family:Orchidaceae

Local Name:

Locality:Tuensang

Pseudobulbs to 15 cm. long, borne on a long cylindric sheathed rhizome; leaves 2 in number, long, elliptic, petioled, inflorescence a 5-10 flowered raceme; flowers about 2 cm. across, dull yellow with red marks on the lip.

Same uses as *Bulbophyllum* sp.

Sp.Examin: S.Ch. 116

Coelogyne *graminifolia* Par. & Reichb.f.

viscosa Reichb.f.

Family: Orchidaceae

Local Name: Cheru asang

Locality: Longsa, Meinkong, Tzutsung.

Pseudobulbs ovoid; leaves narrow, long, 2 in number; Raceme 2-4 flowered; flowers white, lip brownish-yellow.

The bulb with two leaves and few flowers are put in the ear lobes by Ao women folks and dance to recieve the Head hunters after the head hunting. It is a sign of victory.

Sp.Examin: S.Ch. 117

Coelogyne nitida (Wall. ex Don) Lindl.

Family: Orchidaceae

Local Name: Longkhun naro

Locality: Longsa, Lonkhum

Pseudobulbs upto 10 cm. long, borne 2-3 cm. apart on a stout rhizome; cylindric, grooved; leaves 2 in number, upto 20 cm. long, oblong, petioled; inflorescence 6-8 flowered raceme; flowers white.

Same as *Bulbophyllum* sp.

Sp.Examin: S.Ch. 118

Coelogyne cristata Lindl.

Family: Orchidaceae

Local Name: Mezen Anakmoli

Locality: Meinkong, Longkhum

Pseudobulbs upto 5-7.6 cm. long; leaves 15-30 cm. long; flowers in pendulous racemes, very large, white tinged with orange.

Paste of the psuedobulb is applied as cooling and soothing.

Sp.Examin: S.Ch. 119

Coix lachryma-jobi Linn.

Family:Poaceae

Local Name:Menjang

Locality: Cultivated in Jhum field in Tuensang Dist.

A tall coarse grass; internodes polished; leaves long, broad, margin serrated; Racemes long stalked, drooping, fruits ovoid or globose, bluish grey, polished covered with hard shell.

Root is crushed and decoction is drunk to treat menstural disorders; decoction of seeds is drunk as tonic and diuretic; grains are eaten as staple food; "Dzu" a kind of beer is prepared and drunk. Hardgrains are used as beads for necklace. "Nowhere in his country is the land such that mill~~e~~t (*Panicum miliaceum*) and jobs' tears (*coix lachryma-jobi*) will grow. He's a careless sower and careless weeder, but the long gentle slopes with their thick covering of soil give him excellent crops, and though the times of scarcity occur, a real famine is rare or unknown. Nagas domesticated many soft shelled forms of *coix lacharyma-jobi*, selecting thin shelled, for easy hulling types with bigger kernel and heavy fruting". (J.P. Mill, 1926 The Ao Naga pp. 107.)

Sp.Examin: S.Ch. 120

Commelina benghalensis Linn.

Family:Commelinaceae

Local Name: Mesetza

Locality:

A villose herb; leaves elliptic, acute, petiolate, flowers blue in a group, hidden in a large funnel-shaped spathe.

Plant - bitter, emollient, demulcent, refrigerant, laxative, beneficial in leprosy. Leaf paste applied in burns, cuts.

Sp.Examin: S.Ch. 121

Cordia clarkei Bruce.

Family: Boraginaceae

Local Name: Chenu (Angami)

Locality: Changki range, Langpangkong.

Large tree, leaves white, dotted, densely tomentose beneath, flowers white, fruits ellipsoid.

Bark and leaves are crushed and the decoction mixed with the decoction of *Rhus semialata* is used as a dye.

Sp.Examin: S.Ch. 122

Costus speciosus (Koen. ex Retz.) Smith

Family: Costaceae

Local Name: Alar naro

Locality: All over the state.

Tuberous herb with horizontal root-stock; stem slender, fleshy, whorled by leaf sheaths; leaves oblong-lanceolate, acuminate, flowers in dense spikes, white, bracts bright red.

Plant is used as antimagote, anthelm[']entic, opthalmic (Folk practices referred in Chapter VI).

Sp.Examin: S.Ch. 123

Croton caudatus Geisel.

Family: Euphorbiaceae

Local Name: Chawaza

Locality: Lirmen, Nokpo

An aromatic shrub; leaves oblong - lanceolate, long petioled; racemes long, male flowers woolly, female flowers stout, pedicelled.

Leave ground to a paste is applied as poultice, spasm and as Depurgation.

Sp.Examin: S.Ch. 124

Croton roxburghii Balakr.

Family: Euphorbiaceae

Local Name: Chawatong

Locality: Changki Valley

Middle sized tree; bark light brown, warted; leaves broadly elliptic, oblong, repand serrate; flowers yellow; fruits obscurely trigonous.

Root is made into a paste and applied to cure snake bite and scorpion sting. Leaves are fed to cattle and goats for lactation.

Sp.Examin: S.Ch. 125

Cucumis melo Linn.

Family: Cucurbitaceae

Local Name: Apang matsu

Locality: Grown in Jhum field.

Softly hairy annual climbing herb with tendrils, leaves simple, palmate, internode long; flowers yellow monocious, shortly

peduncled; fruit glabrous, cylindrical upto 4 kg. with golden yellow skin.

In case of major injury in battle field, the injured is first dressed up and then fed with the cucumber and cooked dog- meat in order to stop bleeding and for early recovery.

Note: It is a local variety of cucumber. It is larger in size and scented. It is golden yellow inside.

Sp.Examin: S.Ch. 126

Cucumis sativa^{us} Linn.

Family:Cucurbitaceae

Local Name:Zungi

Locality:Grown in Jhum and kitchen garden.

Climing herb, tendrils, simple, leaves palmately lobed or angled or in tire, petiole long; flowers yellow, monoecious, male flower clustered in the axils, female solitary, all shortly peduncled; fruits glabrous, cylindrical; many oblong seeded, compressed.

Ripe fruits boiled and eaten for the treatment of kidney trouble and as a diuretic. Young fruit is cut at the tip and a kind of whitish latticeferous substance obtained is applied in case of burns and skin diseases. Fruit eaten as desert and vegetable.

Sp.Examin: S.Ch. 127

Curculigo capitulata (Lour)^o O.Ktze.

Family:Hypoxidaceae

Local Name:Koritong

Locality: Occurs all over study area

Perennial tuberous herb; rootstock stemless shrub; leaves fleshy, elongate, lorate or ensiform, lanceolate, acuminate, long petioled; flowers distichous, yellowish colour; perianth tube produced above the ovary.

It is used as a remedy in case of dilation of pupils and opthalmia. Root stock is soaked overnight and the liquid is applied to treat conjunctivitis and ear ache. Root stock is also cooked and eaten as vegetable. Paste of the plant is used as poultice. It is a belief that the man saw the monkeys binding up their wounds with poultices of this plant and thus learnt its value. A man wounded in war, had his wound dressed in this way. Leaves torn or cut into strips are used in stitching cuts and in domestic animal castration. Leave paste is haemostatic.

Sp. Examin: S.Ch. 128

Curculigo orchiioides Gaertn.

Family: Hypoxidaceae

Local Name: Koritong

Locality: Meinkong

Perennial tuberous herb; leaves lanceolate, acuminate, long petioled; flowers distichous, pale yellow to orange in colour.

Same as *Curculigo cupitulata*.

Sp. Examin: S.Ch. 129

Curcuma angustifolia Roxb.

Family: Zingiberaceae

Local Name: Alar sungmok

Locality: All over in Secondary forests.

A small rhizomatous root stock herb; leaves lanceolate; flowers yellow crowded in stalked spike.

Rhizome is boiled and eaten as a source of starch and as vegetable.

Sp.Examin: S.Ch. 130

Curcuma aromatica Salisb.

Family: Zingiberaceae

Local Name: Pangsalaphi

Locality: Occurs in secondary forests in Mokokchung Dist.

Root stock tuberous; leaves are long, oblong, large, petioled; flowers are whitish-green, cluster in spike, bract ovate.

Paste of the rhizomes is antispasmodic, antiparasitic; young shoots are eaten as vegetable.

Sp.Examin: S.Ch. 131

Curcuma longa Linn.

Family: Zingiberaceae

Local Name: Haldi

Locality: Tuensang, Longsa.

Stemless rhizomatous root stock, ovoid and cylindric; leaves very large, oblong-lanceolate, in tufts, petiole as long as blade; flowers in spikes long and whitish pale green.

Rhizome is crushed and decoction is drunk as stimulant tonic, carminative, antiperiodic, and blood purifier. It is also applied in case of conjunctivitis. Rhizome paste is applied to bone

fracture and sprains.

Sp.Examin: S.Ch. 132

Curcuma zedoaria Rose^{C.}

Family: Zingiberaceae

Local Name: Pangsalaphi

Locality: Mokokchung

Stemless rhizomatous rootstock, many, large and ovoid; tubers pale yellow, whitish inside; leaves long, oblong, clouded with purple down into the middle, long stalked; flowers pale yellow; capsule 3-angled.

Aromatic rhizomatous and young shoots are eaten as vegetable. It is also eaten as cardiotonic, febrifuge, cardiac stimulant. The paste of the rhizome is applied to bone fracture and sprain. Decoction is also drunk for flatulence.

Sp.Examin: S.Ch. 133

Cuscuta reflexa Roxb.

Family: Cuscutaceae

Local Name: Tsulali

Locality: All over study area.

Leafless twining parasites; stem yellowish, fleshy; flowers in lax racemes; fruit capsule; 4-seeded, large, black.

The tendrils are crushed to a paste and applied in bone fracture treatment, also applied for bilious treatment.

Sp.Examin: S.Ch. 134

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Cyclea peltata, Hk.f. (and) Th.

Family: Menispermaceae

Local Name: Tsungrempang moli

Locality: Longjang, Meinkong

Slender climber; branches longitudinally ribbed and pubescent; leaves deltoid or ovate, peltate, thinly coriaceous, glabrous or sparsely pilose above; flowers small in axillary dioecious; drupe globose or obovoid, pilose; endocarp horse-shoe shaped, tubercled.

A spiritual disinfectant of great efficacy. The bark is scraped from the plant and is pasted and stuck in the centre of the forehead and a bit of the leaves are crushed and applied to limbs of a person who are susceptible to evil spirits. A twig is always carried by the hunters to protect from the evil spirits, while hunting.

Sp.Examin: S.Ch. 135

Cymbopogon citratus (DC.) Stapf

Family: Gramineae (Poaceae)

Local Name: Lemon Grass

Locality: Mokokchung

A tall, perennial grass, 1.8m. high; leaf-blades linear, 90 cm. long, 16-18 mm. wide, glabrous, smooth; peduncles 6-10 mm. long, glabrous, racemes, more or less pubescent.

Infusion of leaves, stimulant and antiperiodic in catarrhal. It is an insecticide, bactericide and bechic. Citronella oil is derived from this plant.

Sp.Examin: S.Ch. 136

Cymbopogon clandestines stapf.

Family: Poaceae

Local Name: Azu

Locality: Noklak area

Annual grass with slender culms, upto 2 mt. tall, glabrous and polished, nodes glabrous; leaf-blades linear, tapering above to a pointed, rough on both surface; inflorescence an interrupted panicle 10-30 cm. long, nodding, made up of many racemes.

Straw is used for thatching house.

Sp. Examin: S.Ch. 137

Cyperus rotundus Linn.

Family: Cyperaceae

Local Name: Tarangpa aie

Locality: Changki valley.

Perennial, glabrous herb; leaf simple, long, crowded near the base of the stem; umbel compound, spikes loosely spicate, red-brown colour in a short spike, 20-50 glumes.

Tubers are crushed and juice extract is drunk as stimulant and in stomach disorder. It is also a very effective antehelminthic. Seeds are crushed or husked and fed to cattle and pigs. A twig of this plant is worn in ear lobe while passing an enemy village by the Chang-Nagas. This is a customary sign of enmity between the different villages.

Sp. Examin: S.Ch. 138

Daphne cannabina wall.

Family: Thymelaeaceae

papyracea Wall.

Local Name:Lyaknum

Locality:Meinkong, Chentang

Large evergreen shrubs; leaves obtuse, crowded near the ends of branches, lanceolate; flowers white, heads surrounded by numerous bracts; perianth tubular, pubescent; fruits succulent, red when ripe.

Bark is basted and made into fine ropes, which is used in bows as strings, trap strings, etc.

Sp.Examin: S.Ch. 139

Debregeasia longifolia (Burm.f.) Wedd.

Family:Urticaceae

Local Name:Leikin

Locality:Chentang, Kodor

A large spreading shrub or small tree; young shoots silky-pubescent; bark, corky, dark brown, leaves oblong-lanceolate or narrow-elliptic, oblong, acuminate, serrulate, subcoriaceous, rugose, pale white or ashy tomentose beneath; flowers in lateral dichotomous panicles; fruits aggregate of achenes, in clusters, orange yellow.

Bark is shredded and boiled for a long time till the threads become soft and used in loin-loom for weaving cloths. The fibre is corded to use in traps, fishing net etc.

Sp.Examin: S.Ch. 140

Dendrobium chrysotoxum Lindl.

Family:Orchidaceae

Local Name:Sungsapen

Locality:Meinkong, Longsa

Pseudobulbs upto 40 cm. long, grooved, shining yellow; leaves 3-7 in numbers, oblong-lanceolate, tip bilobed; inflorescence upto 15 flowered, hanging; flowers deep yellow.

Same as *Dendrobium densiflorum*.

Sp.Examin: S.Ch. 141

Dendrobium densiflorum Wall.

Family:Orchidaceae

Local Name:Shimelang naro

Locality:Chare, Longjang

Pseudobulbs upto 40 cm. long, erect, 4-5 angled, gradually tapering towards the base, sheathed; leaves 3-5 in number, clustered near the apex, lanceolate, acute; inflorescence axillary, hanging with a dense cluster of yellow flowers.

This orchid is used in every festival as a sign of prosperity and richness of a person who arranged the festival in Ao community. During the Mithun sacrifices the flowers are collected even from far distances to keep in the owner's house.

Sp.Examin: S.Ch. 142

Dendrobium farmeri Paxt.

Family:Orchidaceae

Local Name:Arum shimelang-naro

Locality:Longsa, Longkhum, Changki

Pseudobulbs to 40 cm. long, 4-angled; leaves 2-3 near the tip portion, ovate-lanceolate, acute; inflorescence a loosely flowered

hanging raceme; flowers showy, whitish-pink with yellow tip.

Same as *Dendrobium densiflorum*.

Sp.Examin: S.Ch. 143

Dendrobium fimbriatum Lindl. Var. occulatum.

? author

Family:Orchidaceae

Local Name:Akong naro

Locality:Changki, Japu

Pseudobulbs upto 150 cm. long, gradually tapering towards the apex; leaves many, oblong-lanceolate, acuminate; inflorescence hanging, lateral, 7 to 12 flowered, racemes arising from leafly or leafless pseudobulbs; flowers bright yellow.

The stem is dried in the sun and made into thin splits of yellow ribbon is used for various decoration, basketry, weaving etc. It is also put round a small bamboo stick and put in ear lobes as earring called "Tongpang" by women folk. (Old women wearing "Tong pang" is shown in photograph-plate No.30:a).

Sp.Examin: S.Ch. 144

Dendrobium heterocarpum Wall.ex. Lindl.

Family:Orchidaceae

Local Name:Akong tatsuba

Locality:Hillipong

Pseudobulbs upto 25 cm. long, stout, ribbed; leaves oblong-lanceolate, tip acute, covered with membranous sheaths; flowers in group of 2-3 at the nodes of leafless stems, yellow lip dark brown and scented.

Pseudobulb is crushed and the paste applied as cosmetic, and in burns. It is also applied in bone fractures and sprains. (Photo plate; 16:a).

Sp.Examin: S.Ch. 145

Dendrobium sp. (un-identified) PLATE-32a.

Family:Orchidaceae

Local Name:Akong temesung

Locality:Toubo-Tuensang

Pseudobulbs upto 60 cm. long, pale-yellow, smooth, cylindric, gradually tapering towards the base, sheathed; leaves glabrous, linear-lanceolate, tip unequally bifid; inflorescence terminal, 2 flowered raceme; white, flowers showy, yellow tinged at the tip.

This orchid is used in "Chang" tribal marriages. It is a sign of two uniting together as it is always two flowered at the tip of the plant. It is also a beautiful ornametal orchid.

Sp. Examin: S.Ch. 146

Dendrocalamus giganteus Munro

Family:Poaceae

Local Name:Meri-anung

Locality:Noklak, Tuensang

The largest of the bamboos, densely caespitose; Culms over 30 m. tall, 15-25 cm. in diameter, often naked at the base, branchy above. Nodes hairy; Internodes 38-45 cm. long, covered with white waxy scurf when young; Culm-sheaths as broad at the base; Leaves large 30-50 cm. long, broadly lanceolate, rounded at the base, cuspidate-acuminate, ending in a twisted point.

Internodes are used for making water jugs, cooking jugs, etc. It is also used for making blower-piston used in blacksmithy; making bamboo-plates and for various domestic purposes discussed in Folk Practices "Bamboos".(Photo plate;10:a).

Sp.Examin: S.Ch. 147

Dendrocalamus hamiltonii Nees et Arn.

Family:Poaceae

Local Name:Azung-Ashi/Awa

Locality:Japvo Range, Changki range, Tuli

A large bamboo with caespitose culms, sometimes grows tall and erect, often curved downwards; Culm large, 12-25 m. tall and 10-15cm. in diameter, greyish-white when young with dense appressed pubescence, dull green when old; Nodes marked with root scars; Internodes 30-60 cm. long, scabrid; culm-sheaths long and stiff, glabrous with stiff dark-brown hairs; Leaves small on the side branches, but on new shoots reaching 37.5 cm. long, 4 cm. broad, lanceolate, ending in an acuminate twisted point.

For the Nagas, this bamboo has got the highest utility among all the bamboos. This bamboo is extensively used as "rattan splits" for binding construction works.

Sp.Examin: S.Ch. 148

Dendrocalamus hookeri Munro

Family:Poaceae

Local Name:Ongpang anung

Locality:Throughout Mokokchung Dist.

A large bamboo with caespitose stems and long curving branches.

Culms 15-20 m. tall, 10-15 cm. in diameter. Culm-sheaths very broad at the base, narrow on the young shoots and on the upper branches, covered on the outside with dense, black or brown hairs glabrous inside; leaves large, oblong-lanceolate, acuminate ending in a twisted point, rounded at the base.

Same as *D. giganteus*.

Sp. Examin: S.Ch. 149

***Dendrocalamus patellaris* Gamble**

Family: Poaceae

Local Name: Awa-taluba

Locality: Maungmetong, Longkhum.

An evergreen, soft bamboo. Culm 7-10m. tall, 3-5cm. in diameter. Nodes marked by a projecting, softly hairy ring. Internodes 30-45 cm. long, whitish below the nodes. Culm-sheaths persistent, 25-30 cm. long, 6-7 cm. broad at the base, stiff hairs outside the sheaths. Leaves 20-40 cm., long by 3-10 cm. broad, shortly petioled, terminating in a twisted scabrous point.

Same as *D. hamiltonu*.

Sp. Examin: S.Ch. 150

***Dendrocalamus sikkimensis* Gamble**

Family: Poaceae

Local Name: Anung

Locality: Changki, Chungtia.

A large bamboo with caespitose stems and few culms. Culms 18 - 25m. long, bare at the base, branchy at the top, 12-20 cm. in diameter, dark-green in colour. Culm-sheaths 36-40 cm. long by

30 cm. broad, densely covered with golden-brown hairs. Leaves oblong acuminate.

Same as *D. giganteus*.

Sp. Examin: S.Ch. 151

Didymosperma nana Wendlet Drude.

Family: Arecaceae

Local Name: Chiya

Locality: Waromong, Dibulia

Stem about 1-2 m. tall, clothed with persistent leaf - sheaths and petioles; leaves short; spadix very stout, simple, sparingly branched, densely flowered.

Young shoot eaten as vegetable, also made into flour cakes. Cooked or uncooked fruits served to pigs and cattle as vermifuge (it is very effective). Fruit scrape used to skin diseases. Leaves are used for thatching in houses, rain-cap, etc.

Sp. Examin: S.Ch. 152

Diospyros lanceifolia Linn.

Family: Ebenaceae

Local Name: Ruja

Locality: Changki

Middle-sized evergreen tree; young shoot pubescent; bark blackish, rough, vertical fissures, leaves narrow-elliptic or lanceolate to oblong acuminate, glabrous, shining above; flowers numerous, male flowers sessile, clustered; female flowers solitary sub-sessile in axil of fallen leaves; fruits sub-globose, rusty villous.

Wood is used in wood crafts and construction works; young fruits and seeds are eaten; juice extract of bark and fruits used as tanin; fruits are crushed in streams to poison fishes.

Sp. Examin: S.Ch. 153

Diplazium polypodioides Vam

Family: Thelypteridaceae

Local Name: Kongchang

Locality: Meinkong

Fern grown in the shaded wood in the hills, Dark green, glossy fronds.

Eaten as vegetable, also eaten for the treatment of pileous.

Sp. Examin: S.Ch. 154

Dipterocarpus macrocarpus Vesque retusus Bl.

Family: Dipterocarpaceae

Local Name: Arungtsuba (Holong Assames)

Locality: Mangkolemba, Tzurang Valley

A very large gregarious tree upto 50 m. in height and 6 m. in girth with a long cylindrical bole; bark bluish-grey; leaves elliptic-oblong, stoutly acuminate, repand and densely brown ciliate, flowers axillary, pinkish, fruits avoid, pointed towards both end.

Wood is superior quality timber, used for constructing canoe boat and log drums.

Sp. Examin: S.Ch. 155

***Dipterocarpus turbinatus* Gaertn.**

Family: Dipterocarpaceae

Local Name: Arungtsuba tasula

Locality: Mangkolemba, Lirmen

Lofty evergreen tree; bark light grey, fissured, young branches compressed; leaves ovate, long; flowers large, pinkish white, calyx tubular; fruits masked with striations, spindle-shaped; fruit winged.

Wood is superior quality, used in construction works; juice extract is drunk as tonic and as hebaticees.

Sp. Examin: S.Ch. 156

***Dracaena angustifolia*, Roxb.**

Family: Dracaenaceae

Liliaceae / Agavaceae

Local Name: -

Locality: Meinkong, Hellipong.

Erect stem upto 4 m; Leaves sessile by a broad sheathing base, spreading and recurved; flowers white; fruits orange-gold.

The plant is used during festivals and marriages as a symbol of prosperity. This plant is not destroyed during Jhum slashing and prefer to grow in the Jhum fields by the Chang tribes.

Sp. Examin: S.Ch. 157

***Drimycarpus racomosus* Hk.f.**

Family: Anacardiaceae

Local Name: Kangri

Locality: Tsurang valley, Warmong.

Large tree, upto 25 m. height; bark corky, rough, granular

exuding from the inner bark and watery acrid sap which turns black after exposure; Leaves resembling mango leaves, oblong-lanceolate or oblanceolate, acuminate, entire, coriaceous, glabrous; flowers white; drupe transversely oblong, glossy, green, red when ripe.

Plant exude is poisonous, gives rashes on skins, allergic to some people. Sap is collected and used as arrow poison.

Sp. Examin: S.Ch. 158

Eclipta alba (L.) Hassk.

prostrata (L.) L.

Family: Asteraceae

Local Name: Ongpang ejokza

Locality: All over study area

Erect herbs; leaves sessile, linear or oblong-lanceolate; flowers white; fruit achenes, narrowly oblong.

Whole plant is crushed and mixed with sugar-cane juice and drunk for the treatment of spleen and liver enlargement.

Sp. Examin: S.Ch. 159

Elatostema coneatum Wt.

Family: Urticaceae

Local Name: Changpangchempa

Locality: Changki, Longkhim.

Succulent fleshy under shrub; leaves alternate, glabrous, acuminate, serrulate, lateral nerve 4-5; achene ovoid.

Boiled young twigs are eaten as vegetable, which serves as a

laxative. The paste of the plant is applied in bone fracture.

Sp. Examin: S.Ch. 160

***Elephantopus scaber* Linn.**

Family: Asteraceae

Local Name: Powa-wa

Locality: Mangaki, Longkhum

A stiff scabrous herb, dichotomously branched; leaves oblanceolate, obovate-lanceolate, cuneate, amplexicaul, attenuate, sessile; flowers in dense cluster, purplish; fruits truncate, brown, ribbed, hairy.

The decoction of the root is given as tonic to a mental patient. It is also given to *epilepsy* patients.

Sp. Examin: S.Ch. 161

***Engelhardtia spicata* Blume**

Family: Juglandaceae

Local Name: Akhu-Taluba

Locality: Changtongia, Akhoia

Large deciduous tree, upto 75 m. height, base often buttressed; bark greyish-brown, rough, vertically split, leaflet, 4-13, sub-opposite, narrow-oblongⁿ, elliptic-lanceolate, sub-coriaceous, glabrescent above, pubescent beneath; male flower in slender catkins, female flowers in pendulous spikes; nut globose, villously hispid.

Wood is used as timber and for construction works; bark and young leaves are crushed in streams to poison the fish.

Sp. Examin: S.Ch. 162

***Entada pursaetha* DC.**

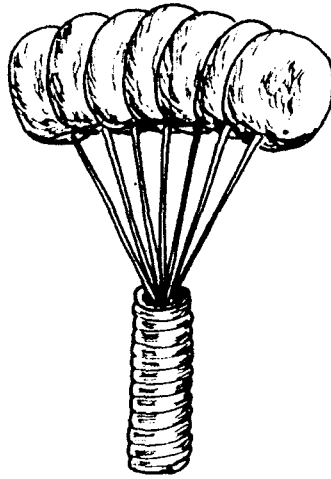
Family:Mimosaceae

Local Name:Shizung

Locality:Changki, Chungtia

Large woody climbers; leaves compound, bipinnate, opposite; leaflets 3-4, glabrous, shining; flowers pale-yellow, crowded in long slender spikes; pod woody, large, flat, sword shaped; seeds flat, nearly orbicular; testa hard, shining brown.

The twining stem of the plant is used in all ceremonial festivals, sacrifices, etc. During "Moatsu" festival the village morung boys go into the forest and bring a long twining stem of *Entada pursaetha* to be used as a rope in Tug-of-war. It is also used for pulling phallic emblems, log drums, main posts for house construction and for tethering Mithun during sacrificial ceremony. the Semas and the Yimchunger use *Entada* seeds as a tally of loans. The Konyaks use it as an ornament to decorate heads of enemies they have cut during the head hunting operation. when a mithun or a cow gives birth to a young one, the owner celebrates the "Genna" for 6 days but for a stranger the celebration lasts for 12 days in that no stranger is allowed to meet the owner for 12 days. On the fourth morning of the Genna, a rope is inserted through holes made in *Entada* seeds and is put round the neck of the calf for prosperitiy, growth and fertility of the owner and his family. Two pieces of ginger (*Zingiber officinalis*) are also tied on either side of the neck in order to protect from the evil spirit. These are removed on the morning of the 7th day after the Genna. A kind of ceremonial



MALLET (HAMMER)
MADE UP OF ENDADA PERSAATHA SEEDS



CUTTING HAIR: HAMMERING BY
MALLET ON TOP OF DAO

CEREMONIAL HAIR CUTTING INSTRUMENT

FIG. VI

hammer (mallet) is made using Entada seeds. (As per shown in the Figure VI). 7 seeds are fixed vertically on the sharp pointed bamboo splints and the seeds are arranged in a row. The other end of the bamboo splints are bound to a cane-handle. This specially made hammer is used in "the hair-cutting ceremony", which is performed 2 days after a boy child's ear-lobes are pierced by a pointed bamboo-needle. The hairs are placed on the sharp edge of a long, narrow and sharp dao and is hammered with the ceremonial hammer.

The seeds, after removing the outer hard coat is crushed to powder and used as shampoo in hair-wash. The powder is also used for general washing purposes and it is found to serve as a good detergent. The cotyledons are cooked twice or thrice changing water after each cooking and is eaten. The seeds are used by children in a game called "Shizung sai". During the Jhum field slashing operation, the presence of Entada plant in the field is believed to be a sign of prosperity and rich harvest.

Sp. Examin: S.Ch. 163

Erythrina arborescens Roxb.

Family: Fabaceae

Local Name: Tsuben/Mangotsurong

Locality: All over study area

Medium sized, deciduous tree, bark corky, thick, deeply furrowed, sometimes with prickles; trifoliate leaves, densely pubescent beneath; flowers in sub-capitate racemes; two lipped calyx; corolla scarlet; pod long, slightly constricted; 2-5 kidney-shaped seeded.

Latex from the bark is applied to cure "Charak ra" a kind of skin disease (rashes) caused by contact or even going near by the plant, *Rhus succedanea*. Roasted seeds crushed to powder is mixed with the residue of rice beer and given to domestic animals as anthelmintic, purgative and as tonic. Leaves contain alkaloids and hypaphorine. Seeds contain hypaphorine, saponin and barks contain alkaloids including betaine and choline.

This tree is commonly known as head tree. After the head hunting operation; heads, hands and legs are hung on this tree may be as a symbol of fertility. It is followed by almost all Naga tribes. After the head is brought to the village it is kept hanging upto three months and the heads are collected after a ceremony and kept above the entrance door in their respective houses. After the head hunting if a dead person's body is not recovered, an effigy made of this wood is kept in the corps on a platform. The wooden heads are carved out of this wood and kept in the warriors corps in the cemetery. This plant is always planted inside the village as a fertility plant.

Sp. Examin: S.Ch. 164

Erythrina stricta Roxb.

Family: Fabaceae

Local Name: Tsuben/Mangotsurong

Locality: All over study area in lower altitudes.

Large deciduous tree; bark smooth, branchlets and stem armed with conical prickles; leaves trifoliate, terminal leaflets larger than the other two, flowers large, numerous, in dense racemes,

scarlet; pods many on a stalk, 12-seed.

Same as *Erythrina arborescens*

Sp. Examin: S.Ch. 165

Eugenia jambolana Lam.

Nomen cl.

Family: Myrtaceae

Local Name: Longchen

Locality: All over Mokokchung Dist.

Large evergreen tree; bark thick, light grey-brown, somewhat rough with cracks; leaves elliptic-oblong or ovate, acuminate, acute, smooth, glossy: Internal nerves close, fine meeting at the margin in a intramarginal nerve; flowers greenish white, sessile, fragrant; berry oblong or ellipsoid, juicy.

Bark is burnt to ashes and used as tenderizer and soap. Lime decoction of bark is drunk to treat dysentery and diarrhoea. Wood is hard and red and is used in construction works and is an excellent fuel wood.

Sp. Examin: S.Ch. 166

Eupatorium adenophorum Linn.

Family: Asteraceae

Local Name: Yimsenza

Locality: All over study area

Much branched undershrubs or herbs, aromatic, upto 2m. high; leaves ovate, ovate-triangular, rhomboid, acute or acuminate, pubescent; heads long, in dense corymbs, involucral bracts present; florets white; achenes black; pappous hairs twice as long as achenes.

Leaf paste is applied to cuts as haemostatic; crushed leaves are spread as insecticide; whole plant is crushed and the juice extract is used for cleaning glasswares.

Sp. Examin: S.Ch. 167

Eupatorium odoratum Linn.

Nomen

Family: Asteraceae

Local Name: Tsulaphoba

Locality: Changki Valley, Tuli, Japu.

Erect undershrubs or shrubs, aromatic plant, up to 5m. high; leaves ovate, ovate-lanceolate or triangular, acute or acuminate, irregularly serrate, pubescent; heads long, in terminal and upper axillary corymbs; involucral bracts ovate-lanceolate; achenes angular; pappus hairs, stiff, white.

Crushed plant is spread as insecticide; leaves are crushed and mixed with a solution of kitchen ashes in water. The juice is then poured into the hole of earth worms burrow. A bamboo tube (nozzle) is introduced through the hole and air is blown into the earth worms burrow and immediately the earthworms come out through the other end of the pore. The earthworm is collected and used as a bait for fishing and catching crabs. (This method was devised by late Mr. Imkongchurung from Chang^ki Village, author's grand father)

Sp. Examin: S.Ch. 168

Eurya acuminata DC.

Family: Theaceae

Local Name: Alumeset

Locality: Changki, Noklak

Small tree, young shoots hairy; leaves serrate, narrowly lanceolate, acuminate; flowers in dense fascicles of 5 or more; fruit indehiscent; seeds numerous, small, angular.

Wood is extensively used in construction works. Pestle for husking rice is made out of this plant. Bark and leaves are crushed and soaked in water overnight and used for green-yellow dye. It is also mixed with juice extract of *Rubia sikkimensis* to yield an excellent red dye. Juice extract of tender leaves is drunk to relieve dysentery and diarrhoea.

Sp. Examin: S.Ch. 169

Fagopyrum esculentum Moench

Family: Polygonaceae

Local Name: Lipakwa

Locality: Mokokchung

Glabrous annual herb attaining upto 1 m; leaves triangular, acuminate, glabrous; flowers white in dense subcapitate cymes.

Leaves are eaten as vegetable, nuts are cooked and fermented into beer.

Sp. Examin: S.Ch. 170

Ficus bengalensis Linn.

Family: Moraceae

Local Name: Akutong

Locality: Chungtiayimsen, Mangolemba

Large spreading tree, epiphytic in juvenile stage; bark smooth, grey; leaves elliptic, obtuse, glossy green; receptacles globose,

pubescent, sessile, scarlet when ripe.

Bark extract is drunk for the treatment of ulcers, aphrodisiac, astringent, cooling, laxative, conceptive etc.

Sp. Examin: S.Ch. 171

Ficus cryptophylla wall. ex/ Mig.

Family: Moraceae

Local Name: Poksok

Locality: Changki range

Middle sized trees with wide spreading branches; bark brown, horizontally wrinkled, leaves obliquely rhomboid, obovate-elliptic acuminate, hispid, dentate, stipules tomentose, receptacles ovoid-oblong, obscurely angled, reddish when ripe.

Fruits are eaten. Dried leaves are used as sand papers or scraper for smoothening the wood surface in wood-crafts. It is also used for scraping the utensils while washing.

Sp. Examin: S.Ch. 172

Ficus elastic^a/Roxb.

Family: Moraceae

Local Name: Nissa (Indian Rubber)

Locality: All over Mokokchung Dist. and Chare.

Large tree, spreading over a large area; buttressed, epiphytic when young; leaves broadly elliptic, glabrous; stipules reddish, lanceolate; receptacles ovoid-oblong, greenish-yellow when ripe.

Latex is chewed as chewingum. Fruits are eaten. This plant is called the father of all the plants. It is grown near the morung, and in the entrance of the villages serve as a gate as

well as a village lookout. From the tree sentries watches over the paths leading deep down through the field. Sacrifices of animals and Oath is taken under this tree.

Sp. Examin: S.Ch. 173

Ficus glomerata Roxb.

Nomencl.

Family: Moraceae

Local Name: Zero

Locality: Changki, Chungliyemsen.

A large spreading tree, without aerial roots; bark scaly. Leaves ovate oblong to lanceolate, dark green. Figs in clusters on short leafless branches, sub-globose or pyriform, red when rip.

Fruits are eaten, leaves are feed to cattle for lactation, latex is obtained and mixed with latex of *Ficus elastica* and fruits of *Vaccinum* sp. gives a sticky substance ... used as birds lime.

Sp. Examin: S.Ch. 174

Ficus hirta Vahl

Family: Moraceae

Local Name:

Locality: Mokokchung, Meinkong

Small tree, branchlets hollow; young parts twiny or rusty-pubescent; bark warty, with horizontal wrinkles; leaves variable, broad-ovate, sub-orbicular or ovate-elliptic acuminate, serrate, 3-5 lobed, scabrid above, densely hirsute. Receptacle axillary
Same as *Ficus hispida*.

Sp. Examin: S.Ch. 175

***Ficus hispida* Linn.**

Family: Moraceae

Local Name: Amwakuru

Locality: Longkhum, Meinkong.

Small tree or shrub with hollow branches; bark brownish, warty with horizontal wrinkles, leaves opposite, obovate, elliptic, shortly acuminate, serrate or dentate, hairy, hispid, pubescent beneath; Receptacles in clusters on the stem or branches.

Leaves are used for wrapping packages, and feeds to cattle for lactation. Soya beans (*Glycine max*) is boiled and wrapped with this leaves and fermented the beans which gives a peculiar and a delicious taste.

Sp. Examin: S.Ch. 176

***Ficus racemosa* Linn.**

Family: Moraceae

Local Name: Merir aku

Locality: Noklak, Pangsa

Large tree, bark smooth, reddish brown; leaves membranous, 3 nerved, alternate, petioled, oblong; receptacles in clusters, short, scaly, subglobose, pyriform, smooth or downy, reddish or orange when ripe.

Young shoots are eaten as vegetable. Bark is crushed and extract is drunk as carminative, diuretic, diabetes and also in dysentery and diarrhoea. Leaves are also fed to cattle for lactation.

Sp. Examin: S.Ch. 177

***Ficus religiosa* Linn.**

Family: Moraceae

Local Name: Akutong (Ao) Pipal (Hindi)

Locality: Tuli, Merangkong.

A large glabrous tree, epiphytic in juvenile stage; bark grey exfoliating in roundish irregular flakes; leave long-petioled, ovate, fruit receptacles axillary, paired, sessile, purple when ripe.

Same as *Ficus bengalensis*.

Sp. Examin: S.Ch. 178

***Ficus silhetensis* Mig.**

gasparriana Mig.

Family: Moraceae

Local Name: Kuru

Locality: All over Mokokchung Dist. and in Chari Tuensang Dist.

A shrub, sometimes a small tree; young parts pubescent; Bark ashy-grey, smooth, leaves oblanceolate, elliptic, entire, acuminate, membranous, glabrous, male flowers pedunculate, female flowers sessile; Receptacle axillary, solitary, globose and reddish

Same as *Ficus subulata*.

Sp. Examin: S.Ch. 179

***Ficus subulata* Bl.**

Family: Moraceae

Local Name: Kuru

Locality: Chare, Meinkong.

A large straggling decedous shrub; young parts minutely

pubescent, leaves elliptic - lanceolate, entire, membranous, hispid, lateral nerves on either half; petiol long, male flowers in ovoid receptacles and female in globose receptacles and orange-red.

Fruits are eaten, leaves are feed to cattle for lactation. Bark is eaten with the bark of *Callicarpa arborea* as alternative to pan (Betel pan).

Sp. Examin: S.Ch. 180

Ficus virens Ait. Hort.

Family: Moraceae

Local Name: Wazanisa

Locality: Tzurang valley, Saring.

A deciduous low tree; leaves membranous long, ovate or ovate-oblong, margins entire; receptacles axillary globose, small, male flowers few, sessile near the mouth of the receptacles and female flowers many and long.

Bark is used as rope. Decoction of the bark is drunk for treatment of ulcers and as tonic and also as gargle in salivation. Leaves are fed to cattle for lactation.

Sp. Examin: S.Ch. 181

Flemingia macrophylla (wild.) Kuntaze ex/ Prain

Family: Fabaceae

Local Name: Waza Chami

Locality: Khensa, Mekeli

An erect small shrub, upto 20 cm height; leaves digitately trifoliate; flowers in racemes, purple; pods oblong, tomentose,

2-seeded.

Roots are pasted and applied as Vulnerary.

Sp. Examin: S.Ch. 182

Floscopa scandens Lour.

Family: Commelinaceae

Local Name: Misetza

Locality: Mangaki, Longkhim

A long flexuous herb with creeping stem; leaves sessile, leaf-blade lanceolate, glabrous; flowers blue in dense-panicled cymes.

Paste is applied to burns; juice extract is used as opthalmintic.

Sp. Examin: S.Ch. 183

Foeniculum vulgare Mill.

Family: Umbelliferae (Apiaceae)

Local Name: Wazachak

Locality: Toubou, Tuensang

A tall glabrous aromatic herb; leaves pinnately dissected, segments linear; flowers in compound umbels, yellow in colour.

Plant paste is applied in massage as a stimulant, juice extract is drunk as carminative. Seeds are chewed for its aroma.

Sp. Examin: S.Ch. 184

Fritillaria cirrhosa D. Don

Family: Liliaceae

Local Name: Mein labonaro

Locality: Hellipong, Chentang

A glabrous, bulbous herb; bulb hairless, small globose, scale

membranous; leaves, linear, lanceolate; flowers nodding, terminal, solitary, short raceme, dull purple.

Paste of the bulb is applied to bone fracture and sprain. Extract juice of the bulb is boiled and drunk for the treatment of tuberculosis.

Sp. Examin: S.Ch. 185

Somewhere HK. 8.

Galeola falconeri Hook.f.

Family: Orchidaceae

Local Name: Lichaba Naro

Locality: Chentang, Hellipong

Saprophytic, thick rhizomatous bearing a large fleshy triangular scale; stem 2-3 m. high, dark brown; leaves absent; inflorescence a panicle, long; flowers bright yellow, spongy, with fragrance of Vanilla.

There is a belief among local people that this plant is "ghost-plant", as such no one dare to pluck its flowers.

Sp. Examin: S.Ch. 186

Galeola lindleyana Hook.f.

Family: Orchidaceae

Local Name: Yakko range

Locality: Mojing naro

Saprophytic, rhizomatous, bearing heart shaped fleshy scales; leaves green or variegated, petioled; inflorescence many flowered racemes; flowers large, spongy, bright yellow.

Same as *Galeola falconarii*.

Sp. Examin: S.Ch. 187

Garcinia cowa Roxb.

Family: Clusiaceae

Local Name: Pelamesong

Locality: Changki range.

Middle sized tree with dark green foliage; bark brown-greyish, often with white blotches, exude a dark yellowish gum; Leaves broadly elliptic, lanceolate, acuminate; Male flowers yellow, cluster; Female flowers larger than male, terminal, yellow, solitary; Fruits 4-6 cm. diam; globose with slightly tapering towards the apex, dull-red when ripe.

Same as *G. pedunculata*.

Sp. Examin: S.Ch. 188

Garcinia pedunculata Roxb.

Family: Clusiaceae

Local Name: Sentula

Locality: Waromong

A large tree with a fluted trunk; bark thick, spongy; leaves obovate or oblanceolate, rigid, subcoriaceous, midrib stout; male flowers pale-green in terminal panicles; female flowers solitary, larger than male, terminal, 4-angled peduncle; fruit 8-12 cm. diam., fleshy, golden yellow when ripe; seeds 8-10 reniform enclosed in a fleshy aril.

Fruit and leaf extracts contain malic acid, which is drunk for cardiac problem and as diuretic, aperient, expectorant, carminative, emollient and as tonic. Fruits eaten as desert.

Sp. Examin: S.Ch. 189

Garcinia xanthochymus Hk.f.ex Th.

Family: Clusiaceae

Local Name: Pelamesong

Locality: Changki

A small or middle sized tree; bark dark-brown, exude pale-green gum; leaves narrowly oblong or oblong-lanceolate, coriaceous, shinny on both surfaces. Flowers pentamerous, dull-white; fruits fleshy, acidic, 4-7cm. diam; yellow - red when ripe; seeds oblong.

Fruits are eaten; acidic juice is drunk for the treatment of cardiac problems, gastric and as expectorant. Unripe fruits and bark are crushed and the extract is used as yellow-red dye.

Sp. Examin: S.Ch. 190

^C
~~G~~ardiocrinum *gigantium* (Wall) Makino

Family: Liliaceae

Local Name: ^{Atsu}~~Astu~~-Pangpi

Locality: Yakko, Hellipong

Tall, upto 3 m., leafy herbs; cauline leaves crowded near the middle of the stem, glabrous; flowers large, tubular, white actinomorphic, fragrant.

Dried stem is use ... horn to call Mithuns from the forests. Planted in gardens as an ornamental plant.

Sp. Examin: S.Ch. 191

Gaultheria fragrantissima Wall.

Family: Ericaceae

Local Name: Anga-jang

Locality: Saramati range

A stout shrub; leaves persistent, alternate, crinate-serrate, petioled; flowers small, racemose, green yellow or whitish corolla.

Oil from leaves - aromatic, stimulant, carminative, used in rheumatism, neuralgia, as flavauring agent, antiseptic and internally vermifidal against hook worms.

Sp. Examin: S.Ch. 192

Girardinia *heterophylla*, Decne

diversifolia (Link) Fries

Family: Urticaceae

Local Name: Merizaklu

Locality: Noklak

Robust, erect undershrub with long stinging hairs (needle) and perennial roots; leaves cordate, variously lobed, coarsely toothed; flowers monoecious; male cymes loosely paniculate; female cymes in clusters; fruiting cymes alternate, lobulate, achene punctuate, black.

The stinging hairs of the plant are scrapped out with the help of bamboo shavings and then the bark is peeled and pasted into a white silky, fine, strong fibre and woven into cloths (shawls), Rope is used in bow, animal and bird traps, fishing net, etc. The paste of young leaves is applied to treat bee and ant stings.

Sp. Examin: S.Ch. 193

Gmelina arborea Linn.

Family: Verbenaceae

Local Name: An-cha

Locality: Chentang

A tree, attaining 18m. height; leaves 10-20 cm. long, broadly ovate, acuminate, entire, petiole 7.6 cm. long; flowers small, usually 3-flowered cymes, brownish-yellow.

Juice of leaves demulcent used in gonorrhoea, cough and to remove foetid discharges and worms from ulcers, malaria, blood pressure. Plant paste used in snake bite and scorpion-sting. Bark is used for yellow dye, leaves as vegetable.

Sp. Examin: S.Ch. 194

Gnaphalium luteo-album Linn.

Family: Asteraceae

Local Name:

Locality: Nagaland in secondary forest

A very variable, annual herb, 10-30 cm. high; leaves alternate, entire, sessile, upper leaf lanceolate, acute, head 4mm. in diameter, small, terminal or axillary corymbs; flowers whitish yellow or brown shiny.

Juice extract of leaves drunk as astringent and vulnerary.

Sp. Examin: S.Ch. 195

Gnetum gnemon Linn.

Family: Gnetaceae

Local Name: Milem-O-

Locality: Changki range

An evergreen shrub or small tree; bark greenish, light brown; leaves elliptic-lanceolate or elliptic-oblong, acuminate,

glabrous, glossy; male spikes slender, female spikes about 36m. long, often branched; fruits oblong, apiculate, orange-red

Tender leaves are taken as vegetable; seeds are roasted and eaten.

Sp. Examin: S.Ch. 196

Gnetum montanum Brongn

Family:Gnetaceae

Local Name:Milem taluba

Locality:Changki range

Large evergreen climber; stem woody, bark dark grey; leaves opposite, elliptic or ovate, oblong, bluntly acuminate, entire, glabrous, glossy; flowers dioecious; male closely imbricate, female interrupted. Fruits drupaceous, stipulate, ellipsoid, reddish orange when ripe.

Bark is used as rope and fruits are eaten; seed is roasted and eaten.

Sp. Examin: S.Ch. 197

Gomphostemma lucidum Wall.

Family:Lamiaceae

Local Name:Arem napa

Locality:Noklak area, Tuensang

Erect perennial herb; plant covered with stellate hairs, flowers yellowish, dense, in axillary whorls.

Plant extract is drunk for the treatment of pneumonia, rheumatism.

Sp. Examin: S.Ch. 198

Gonatanthus ornatus Schott.

Family:Araceae

Local Name:Kozalongri

Locality:Chentang

Small tuberous plant; leaves narrower than in *G.pumilus*, with a fine coppery-purple coloration in the leaves.

Same as *Gonatanthus pumilus*.

Sp. Examin: S.Ch. 199

Gonatanthus pumilus (D.Don) Engl & Krause

Family:Araceae

Local Name:Kozalongri

Locality:Changki, Hellipong

Small tuberous plant; leaves peltate, acuminate, dark green above; spathe long, ovoid, green; base inflated, reclined with a long recurved tip, golden yellow, contracted at the base; Berries yellow; seeds on long funicles, ovoid.

Whole plant is crushed and the extract is drunk as anti-helminthic, aperient, and as tonic, juice extract of the plant is applied to cure earache, paste of the plant is also applied to treat burns, bone fracture and sprains.

Sp. Examin: S.Ch. 200

Gossypium arboreum Linn.

Family:Malvaceae

Local Name:Methi

Locality:Chongtia

A shrub or low tree; leaves 5-7 lobed; flowers axillary, small and reddish-purple.

Same as *Gossypium herbaceum* Linn.

Sp. Examin: S.Ch. 201

Gossypium herbaceum Linn.

Family:Malvaceae

Local Name:Methi (Cotton)

Locality:Chongtia, Mekeli

Woody shrub; wood is white, redish brown bark; leaves 3-5 lobed, glabrous, dark green; flowers yellow with a purple in the centre; capsule ovoid.

Cotton obtained from the capsule is used for making yarn; bark is used in making rope; cotton wool is traditionally brought by bride during marriage as a symbol of marriage and in case of divorce it is taken away from the house. It is used as earring in the effigy of spirit Gods "Tsongrem".

Sp. Examin: S.Ch. 202

Hedychium coronarium Koenig

Family:Zingiberaceae

Local Name:Kimonger naro

Locality:Occurs all over study area.

Perennial erect rhizomatous plant; rootstock stout, horizontal, fleshy, jointed. Leaves sessile, lanceolate, glabrous or sparsely pubescent beneath; ligule long and membranous; flowers fragrant, white, in dense oblong spikes; calyx green, cylindric,

Plant is grown near houses as a snake repellent and as an ornamental; rhizomatous root stock is cooked and fed to pigs.

Sp. Examin: S.Ch. 203

Hedychium spicatum Buch-Ham.

Family:Zingiberaceae

Local Name:Kimonger narotemerem

Locality:Meinkong, Longkhum

Perennial rhizomatous plant; leaves oblong, lanceolate, glabrous beneath; flowers ascending, large, red in dense terminal spikes.

The juice extract of the rhizome is applied as eye drop in conjunctivitis, also drunk as carminative, liver tonic, kidney problems. Plant contains the essential oil of Methyl-paracusarin acetate, cinnamic ethyl-acetate, and sesquiterpenes. Those are medicinally used as anti-arthritis, emmenagogue, expectorant, febrifuge, hair tonic, and makes a kind of scented powder.

Sp. Examin: S.Ch. 204

Hedyotis corymbosa (Linn.) Lam.

Family:Rubiaceae

Local Name:

Locality:Meinkong, Longmisa

A subfruticose, spreading, 3-5 cm. high annual plant; leaves linear or narrowly elliptic-lanceolate; flowers white in axillary pedunculate cymes; capsule globose.

Whole plant is crushed and soaked overnight in water and the

juice extract is drunk for the treatment of gastric, ulcer and as tonic.

Sp. Examin: S.Ch. 205

Hedyotis scandens Roxb.

Family: Rubiaceae

Local Name:

Locality: Occurs in Secondary forests.

A much branched climber; leaves green when dry, smooth, flat, stipulate; flowers in cymes, pedicellate, greenish white; capsule broadly obovoid.

Plant juice extract is applied to treat eye diseases and drunk in case of troubles following child birth. Root is crushed and applied to treat bone fracture and sprain.

Sp. Examin: S.Ch. 206

Herpetospermum pedunculatum Baill.

Family: Cucurbitaceae

Local Name: Arem poka/jue

Locality: Tuensang

Large herbaceous climber with long branched tendrils, leaves are ovate, acute, long pointed. Flowers bright yellow, corolla with a slender funnel-shaped tube. Fruits ellipsoid, 5-8 cm. long, finely hairy.

Young tender leaves are sold in market as relished vegetable. Fruit extract in water is drunk for the treatment of malaria and as liver tonic.

Sp. Examin: S.Ch. 207

***Hibiscus abelmoschus* Linn.**

Family:Malvaceae

Local Name:Arem pendi

Locality:Chentang, Longsa

A variable hispid annual, 3-5 ft. high; leaves polymorphic palmate, 5 lobed, petiole with long deflexed hairs, flowers yellow with purple centre, capsule 3-4 in long.

Fibres use for cordage flowers as ornametal, cultivated. Seeds are cruhsed and used as musk.

Sp. Examin: S.Ch. 208

***Hibiscus macrophyllus* Roxb.**

Family:Malvaceae

Local Name:Akhunem

Locality:Chungtia, Aliba, Changki

Medium sized deciduous tree, trunk straight, young parts covered with spreading hairs; leaves caudate, orbicular, sharply acuminate; flowers yellow, caduceous; capsule oblong, pointed tip.

Inner part of the bark is an excellent cordage, wood is much used for rafters, post and sill plates. Leaves are used for package purpose as "Am".

Sp. Examin: S.Ch. 209

***Hibiscus pungens* Roxb.**

Family:Malvaceae

Local Name:Meribend

Locality: Chentang Saddle

A bristly annual herb; leaves polymorphic, palmate, 5-7 lobed, crenate; flowers showy yellow with purple centre on a stout peduncle; calyx spathaceous; capsule hirsute.

Root paste is applied as poultice.

Sp. Examin: S.Ch. 210

Hibiscus sabdariffa Linn.

Family: Malvaceae

Local Name: Sengurep

Locality: Cultivated in Jhum fields.

Erect shrub; stem blood-red in colour; leaves orbicular, palmately lobed into 3-5 oblong, lanceolate, segments; flowers pale-yellow with bright purple centre; calyx blood red, tubular, fleshy, acidic; enlarged and thick fleshy in fruits; capsule ovoid, pointed.

Root is crushed and juice extract is drunk as aperient, carminative, emollient, indigestion and stomach-ache; leaves and calyx make refreshing drink and also taken as vegetable.

Sp. Examin: S.Ch. 211

Hibiscus surathensis

Family: Malvaceae

Local Name: Sentsureb

Locality: Mokokchung, Chare

Under-shrub, stem with recurved spines, green in colour but red colour in young, glabrous; leaves palmately 3-5 lobed, serrate; flowers bright yellow with a purple centre.

Same as Hibiscus sabdariffa; Young leaves and calyx are eaten as vegetable.

Sp. Examin: S.Ch. 212

Hodgsonia macrocarpa (Bl.) Cogn.

Family: Cucurbitaceae

Local Name: Assa.

Locality: Changki range

An woody climber; Leaves deeply 3-5 lobed, glabrous, coriaceous; lobes entire, sharply short acuminate or acute; tendrils 2-3 from the top; flowers large, dioecious, buds brown tomentose, fruits upto 20 cm in wide, depressed, globose, red brown, 10-12 grooved, extremely bitter; perfect seeds usually six, each having a barren one attached to its side, ellipsoid.

The kernel of the seed is a delicacy eaten after roasting, and also made into various curry; seeds are used in a childrens' game called "Assa-chai". Silk worms are also fed on the leaves.

(Photo plate No. 25 : a)

Sp. Examin : S. Ch. 213

Holarrhena antidysent^erica (L.) Wall.

Family: Apocynaceae

Local Name: Ho-Pai

Locality: Noklak

Small tree, light brown bark, wood is yellowish-white; leaves membranous, opposite with milky latex, flowers creamy-white; pods long and acuminate.

Bark extract is drunk to treat febrifuge, dysentery, diarrhoea, liver problem, and as astringent. Latex is applied to cure skin diseases and ring worm. Wood is excellent for wood crafts and cross bows are made out of this wood.

Sp. Examin: S.Ch. 214

Houttuynia cordata Thunb.

Family: Saururaceae

Local Name: Alimoli/Mokma

Locality: Occurs through out the State.

Herbs; leaves alternate, cordate; stipules broad, membranous; spikes terminal, involucre, dense flowered; fruit subglobose; seeds globose.

Juice of the plant is drunk in the treatment of ulcer and blood purification. Crushed plants are spread in chicken cage to keep away fleas. The whole plant is taken as vegetable, extensively sold in market.

Sp. Examin: S.Ch. 215

Hydnocarpus kurzii (king) Warb.

Family: Flacourtiaceae

Local Name: Vimsungjang (Chalmugra-Bengali)

Locality: Changki range

A tree, about 15 m. high, tall, crown drooping, leaves about 20cm. long, pointed at tip, leathery, glabrous; flowers small, yellow in small axillary clusters; fruits round, 6-7 cm. diameter, brown; seeds many.

Raw pulp of the fruit mixed with boiled rice or piece of meat is

kept in the tracks of the rats to poison. "I have tried this and found it quite effective" (J.P. Mill. The Ao-Naga pp. 151). The seed is cooked thrice changing water and eaten. Paste of the seeds is applied for the treatment of leprosy, the juice of the bark is drunk during malaria fever. The shavings of the bark is spread near the bee hives to drive out the bees and collect the larva as food.

Sp. Examin: S.Ch. 216

Hydrocoryle javanica Thunb.

Family:Apiaceae

Local Name:Tsula-polong

Locality:Meinkong

Prostrate herbs, rooting out nodes; leaves palmate; flowers small, white in axillary, umbels.

Plant is crushed and soaked in water and the extract is drunk as liver tonic, antiepiletic, C.N.S., (Central nervous system).

Sp. Examin: S.Ch. 217

Hypericum japonicum Thunb.

Family:Hypericaceae

Local Name:Ao-Chani

Locality:Changki, Chungliyemsen

Slender herb, stem 4-angled; leaves clasping the stem; flowers yellow, bracteate; fruits capsule, seeds ribbed.

The plant and a single frond of a fern (*Amphineuron* sp.) is crushed to a paste and applied on teeth to kill the maggot. Women carry a twing of the plant in the rice basket while going to

jhum field with belief that it will please the God 'Lichaba'.

Sp. Examin: S.Ch. 218

Hypericum monanthe^mum Hk.f. & T.

Family:Hypericaceae

Local Name:Ao-Chani/Chitango

Locality:Chentang, Longkhim

A slender perennial herb; leaves oblong, elliptic or ovate, obtuse, marginally glandular, flower scarlet.

The plant juice extract is used as eye drop for the treatment of conjunctivities. Leaves spread over the head of Mithun prior to its sacrifice made by a rich man. This sacrificial ceremony is locally called "Chitang-O" which means "never to fell hungry.

Sp. Examin: S.Ch. 219

Ichnocarpus frutescens (Linn)^o R. Br.

Family:Apocynaceae

Local Name:

Locality:Mokongchuket

Woody, climbing undershrub, smooth^a; leaves short stalked, oblong, acute, broad, smooth^a, veined, dark green; flowers small, tubular, purple.

Young tender leaves made into paste is applied to treat bone fracture and sprain; juice extract drunk as purgative and alterative.

Sp. Examin: S.Ch. 220

Imperata cylindrica Beauv.

Family:Poaceae

Local Name:Azu

Locality:Occurs all over secondary forests and degraded forests.

A variable, tufted, perennial grass; rhizomes deep seated, creeping, scaly, white and branched; culms erect; leaves variable, inflorescence dense, fluffy, silver-white panicles.

Crushed rhizome is soaked in water and is drunk to relieve dysentery, diarrhoea, anthelmenthic. It is also applied as opthalmic. Young tender inflorescence called "Aipoktsu" is eaten. In case of male 6 straw and female 5 straw ~~are~~ soaked in a bamboo cylinder/bamboo mug and kept towards head near the bed to drive away the evil spirits from nightmare, night sleep walking and bad dreams.

Sp. Examin: S.Ch. 221

Indigofera tinctoria Linn.

Family:Fabaceae

Local Name:Tzumar-osak

Locality:Changki range

Suffruticose, erect, branched, sprinkled with soft whitish pubescence; leaves pinnate, oblong-obovate, cuneate at base, decreasing at apex; racemes shorter than the leaves, sessile, many flowered, purplish to violet, curved upwards; seeds truncated at the both ends.

Root decoction is drunk to treat epilepsy; plant extract is used for blue dye.

Sp. Examin: S.Ch. 222

Ipomoea batatas (Linn.) Lamk.

Family: Convolvulaceae

Local Name: Chamiang

Locality: Cultivated in Jhum fields and occur wildly in Japu.

Annual, slender, twining herb; leaves cordate, acute, angular, stalked, pedicels longer than the petioles, 3-4 flowered; sepals mucronate; corolla large, tubular, purple, root very large tuberos.

Tubers eaten as staple food; leaves fed to pigs and cattle; powdered seeds taken as laxative.

Sp. Examin: S.Ch. 223

Ipomoea nil (Linn.) Roth

Family: Convolvulaceae

Local Name: Angura moli

Locality: Occurs in degraded forests

An annual slender twining herb; leaves ovate - cordate, deeply 3-lobed; flowers funnel shaped, blue, tinged with pink colour; capsule 3-celled subglobose.

Seeds are dried and crushed into powder. The powder is burnt and the smoke inhaled through mouth and nostril for the treatment of asthma. Young seeds crushed and mixed with milk is drunk as diuretic, purgative and as hepatic stimulant. Leaves are feed to cattle and pigs.

Sp. Examin: S.Ch. 224

Jatropha curcas Linn.

Family: Euphorbiaceae

Local Name:Tzulu mezem jang

Locality:Changki valley

A soft wooded deciduous shrub or small tree; leaves ovate, 3-5 lobed, alternate; flowers greenish yellow; seed oblong, dark brown when ripe.

Plant extract is used as shampoo and soap; it is also applied to treat skin diseases and ring worms. Seeds are crushed and taken in little doses as purgative.

Sp. Examin: S.Ch. 225

Juglans regia Linn.

Family:Juglandaceae

Local Name:Akhuchang

Locality:Akoia, Longkhum, Onger

A large, deciduous, monoecious tree; young part tomentose, leaves alternate and long; flowers yellowish green and small; drupe ovoid, green; rind thick, enclosing irregularly furrowed, 2-valved nut.

Wood is excellent timber and is used in construction and furnitures. Bark juice is extracted and used for tanning; bark, leaves and young fruits are crushed in stream to poison fish. The kernel is eaten. Leaves extract is drunk as astringent and tonic.

Sp. Examin: S.Ch. 226

Kydia calycina Roxb.

Family:Malvaceae

Local Name:Akhunem

Locality:Chungtia, Sungratsu

A moderate sized, fast growing deciduous tree; young parts covered with grey, stellate hairs; bark grey exfoliating in long strips; leaves large, suborbicular, palmate with many lobes; flowers white-yellow; capsule depressed-globose.

Wood is used in construction work, bark is used as cordage; leaves for wrapping packages.

Sp. Examin: S.Ch. 227

Kydia glabrescens Mast. *

Family: Malvaceae

Local Name: Ongpang akhunem

Locality: Ungma, Kabza.

A tall tree, upto 35 m. in height; bark grey and thick; leaves orbicular broader than long, near the inflorescens generally elliptic, slightly lobed, old leaves turn yellow before falling; flowers yellow, showy.

Same as *Kydia calycina*. Bark and nuts are eaten by goats, deers and squirrels.

Sp. Examin: S.Ch. 228

Lagerstroemia parviflora Roxb.

Family: Lythraceae

Local Name: Tsuma sung

Locality: Mokokchung, Ungma, Kabza.

Tall deciduous tree; leaves ovate-lanceolate, flowers pinkish-white; fruit capsule, long ellipsoid; seeds with terminal wing.

Timber^{and} building materials; supplied to other states.

Sp. Examin: S.Ch. 229

Lagerstroemia speciosa (Linn.) Pers.

Family:Lythraceae

Local Name:Tsuma Sung

Locality:Changki Valley.

Small trees; bark peeling off; leaves oblong - elliptic or oblong-lanceolate; flowers mauve purple in long panicles; fruit capsule, subglobose.

Same as *L. parviflora*.

Sp. Examin: S.Ch. 230

Lantana ^{camara L. var.} ~~*aculeata*~~ (Linn.) ^{moldenke}

Family:Verbenaceae

Local Name:Yemra naro

Locality:Mokokchung

Aromatic straggling shrub / [?] Quadriangular with recurved prickles. Leave opposite, obovate, oblong, acute, and crenate; flowers are orange, or yellow; fruits greenish blue when ripe.

Cultivated as hedge plant but not close to houses as some people are allergic to this plant. The aroma causes headache. Whole plant crushed and spread as insecticide.

Sp. Examin: S.Ch. 231

Laportia *terminales* Weight

Family:Urticaceae

Local Name:Ongpang mezenzaklu

bulbifera (Seeb. & Zucc.) Wieg

Locality:Meinkong

Herbaceous 4-angled stemmed; young parts clothed with stinging hairs; Leaves glossy, broad, ovate-elliptic, acute or acuminate; Achene oblique, compressed or flattened, fleshy.

Leave paste applied as poultices to bees and cat fish sting.

Sp. Examin: S.Ch. 232

Lasia spinosa (Linn.) Thw.

Family:Araceae

Local Name:Turang/Churang

Locality:Changki Valley

Stout spiny marshy herbs, tuberous; stemless, leaves long spongy stalk, palmate, glabrous, leathery.

Young tender leaves are eaten as vegetable (sold in markets); also eaten as anthelmintic and vermifuge. It is fed to domestic animals. ["I have been assured by most reliable witnesses that the maggots drop out of the wound within a very few hours" (J.P. Mills. Ao-Naga P;P 150).]

Sp. Examin: S.Ch. 233

Leea robusta Roxb.

Family:Vitaceae

Local Name:

Locality:Meinkong

A large, handsome shrub; leaves 2-3 pinnate, leaflets elliptic-oblong, flowers in corymbose cymes, greenish or bluish; berries depressed globose.

Tuber and stem crushed are used as mucilaginous, the dried stem are used as stop-cork and as float in fishing.

Sp. Examin: S.Ch. 234

Leucas zeylanica R.Br.

Family:Lamiaceae

Local Name:Kolimi moli

Locality:Tzurang

An erect, pubescent or hispid annual herb; hairs spreading deflexed or expressed; leaves sub-sessile linear or linear-lanceolate, obtuse, pubescent; flowers white, and hispid.

Fresh leaves and young shoots are chewed in case of tooth ache and headache for quick relief; leaf paste is applied on cuts and wound as haemostatic; the decoction of the root is drunk in case of malaria fever.

Sp. Examin: S.Ch. 235

Leucosceptrum canum Sm.

Family:Lamiaceae

Local Name:Anuzamechepa

Locality:Tuensang, Noklak

Erect under shrub; bark whitish brown, thin, papery flags; leaves oblong, elliptic, acuminate, entire, coriaceous; flowers white and purplish; nutlets triquetrous.

The white cottony tomentum scraped from the leaves and applied as haemostatic; inflorescence is soaked in water is sweet and drunk as astringent, stimulant and as tonic.

Sp. Examin: S.Ch. 236

Litsea *citrata* Bl.

Cuteba (Lam.) Pers.

Family: Lauraceae

Local Name: Entzurem

Locality: Hellipong, Tuensang, Meinkong

Aromatic small tree; bark green, wood white; leaves alternate, lanceolate, glabrous, acuminate; flowers in head small and creamy yellow; fruits globose, aromatic, turn black when ripe.

Aqueous extract of seeds, bark and leaves are carminative, expectorant and stimulant; paste used as poultice; plant is smoked inside house to kill the caterpillars which eat away the roof, made of *Leviston* *jinkensia* and *Caryota* sp.; twigs are crushed and used as insecticide; plant is stalked in the entrance of the house near the main door during the "Genna" performance as a sign to prevent/protect from the evil spirits. Fruits eaten as spices and is sold in market. Crushed berries mixed with a little dried and powdered meat of "por" (kind of rat which lives under the culm of bamboos) and fermented bamboo shoots of *Bambusa* sp is boiled/cooked and taken by patients suffering from dysentery and diarrhoea. Fruits are also eaten as spices.

Sp. Examin: S.Ch. 237

Litsea lancifolia Hook.f.

Family: Lauraceae

Local Name: Antsurem

Locality: Tuensang Dist.

A small tree; leaves variable in sizes, drying grey or red-brown, pitiolate; flowers in very small and shortly

pedicelled umbells, 2.5 mm. in diameter; fruit apiculates.

Paste of the bark used in poultices. Also applied in case of sprains and wounds.

Sp. Examin: S.Ch. 238

Litsea monopetala Roxb.

Family:Lauraceae

Local Name:Entsurem

Locality:Tuensang Dist.

A small to medium sized tree; bark dark grey or pale brown; leaves elliptic-oblong, ovate or obovate; flowers in umbells or corymbs, white or pale greenish yellow; fruits drupe, globose-ellipsoid, black when ripe.

Juice extract of the bark is drunk as astringent and for the treatment of diarrhoea. Powdered bark and roots are applied externally to relieve pains.

Sp. Examin: S.Ch. 239

Livistonia jenkinsiana Griff. ?

Family:Arecaceae

Local Name:Sera

Locality:Changki, Chare.

Tall about 8-12 m. height tree; annulate trunk; leaves orbicular; 1-2 m. in diameter, flabellately plicate, split to the middle into byfid narrow lobes, petiole long, margins spinous, branches dichotomous; flowers are small, clustered on tubercles, drups about 3 cm. diam., leadin blue in colour.

Leaves used for thatching houses and wraping packages; tree trunk

used in construction works; young drupes are eaten as areca nuts and the fleshy drupes are steamed and eaten.

Sp. Examin: S.Ch. 240

Lycopodium cern^uium Linn.

Family: Lycopodiaceae

Local Name: Mangrang naro

Locality: Mokokchung, Hellipong

Terrestrial, prostrate, branches short, creeping; fertile branches erect; leaves spirally arranged, narrowly linear, acute. strobili oblong, sessile, born terminally sporophylls rhomboid-lanceolate; spores pyramidal.

Whole plant is used as ornamental; matured spores (powder) are mixed with gun-powder; powder is applied as an antiseptic in wounds and injuries.

Sp. Examin: S.Ch. 241

Lycopodium phlegmaria Linn.

Family: Lycopodiaceae

Local Name: Pangcha naro

Locality: Tuensang

Epiphytes; pendulous, dichotomous branching; leaves ovate-lanceolate, green acute, entire, coriaceous; strobiles 3-4 cm. long, terminal.

Same as *Lycopodium squarrosum*.

Sp. Examin: S.Ch. 242

Lycopodium squarrosum Foust

Family: Lycopodiaceae

Local Name: Keyi naro

Locality: Tuensang, Toubo

Epephytes; stem pendulous, dichotomous branching; leaves crowded, linear, acute, entire, rigid, coriaceous, shining, strobili 4-8 cm. long, terminal; sporophylls rhomboid-lanceolate; spores triangular.

In the marriage ceremony of the Konyak-Nagas the bridegroom must present a twig of this plant as a symbol of togetherness (May be because the twig is dichotomously branched).

Sp. Examin: S.Ch. 243

Macaranga denticulata Muell.

Family: Euphorbiaceae

Local Name: Thobi

Locality: All over in Secondary forests.

Small evergreen tree; young part rusty tomentose, branches and petioles glaucous; leaves thinly coriaceous, base truncate with 2 glands, acuminate; male panicles, long bracts, subtending a cluster of 5-8 flowers; female panicle shorter. Capsule blackish, didymous, clothed with waxy orbicular.

Red resinous exudate from the plant is used in fixing iron blade of dao in wooden/bamboo handle. Leaves are used as wrapping and packing materials.

Sp. Examin: S.Ch. 244

Macaranga indica Wight

Family: Euphorbiaceae

Local Name: Thobi

Locality: All over secondary forests.

Medium sized evergreen tree; bark greyish smooth thin; leaves peltate, triangular-ovate, orbicular-ovate, acuminate, denticulate, petiole long and red, glaucous with a pair of glands; male panicle branches zigzag; flowers pubescent, clustered; female panicles smaller, hairy; capsule globose, seed globose.

Same as *Macaranga denticulata*.

Sp. Examin: S.Ch. 245

Maesa indica Wall.

Family: Myrsinaceae

Local Name: Khoza-longri

Locality: Through out the study area.

Shrub or small tree; bark dark-grey, greenish, warted; leaves elliptic, elliptic-oblong or elliptic lanceolate, acute or acuminate, coarsely toothed, glabrous; flowers white in axillary racemes; berries small, pinkish white like pearls, succulent.

A spiritual disinfectant of efficacy, Twigs of the plant is plucked by the "Arasentsur" (witch or Quack) and whips repeatedly to a man who is caught or infected by the evil spirits, to remove the spirit from the body.

Sp. Examin: S.Ch. 246

Magnolia campbellii Hook. f. & Th.

Family: Magnoliaceae

Local Name: Ongdang naro

Locality: Longkhum, Meinkong

Large deciduous tree, wood white, leaves 30 cm. long, silky tomentose when young, nearly glabrous when matured. Flowers terminal, white, showy, scented, appearing when the tree is leafless, fruiting spike, cylindric; seeds are red.

Flowers are used as ornamental, wood is used for carving. The flowers are term as "Asur naro" Deathman's flower. It is believe that person after dead carry this flower to please the God called "Moyots^ung", who is the keeper of heaven.

Sp. Examin: S.Ch. 247

Mahonia nepalensis DC.

Family: Berberidaceae

Local Name: Meri-mezen-aing

Locality: Hellipong, Longlok

Spiny shrub or small tree; leaves sheathed at the base; leaflets 2-12 pairs, ovate-oblong or lanceolate, sessile, glabrous, with spinous teeth on either side; flowers yellow, fascicled in erect dense flowered racemes; berries elliptic or globose dark purple-blue.

Yellow dye is obtained from its roots and the root decoction is drunk as diuretic and demulcent in dysentery.

Sp. Examin: S.Ch. 248

Mallotus philippensis Muel Arg.

Family: Euphorbiaceae

Local Name: Surumjang

Locality: Tuensang Dist. Noklak

A small evergreen tree; trunk often buttressed; young parts rusty

pubescent. Leaves variable alternate, broadly ovate, glabrous above. Flowers dioecious, capsule 3-lobbed, 3 seeded, covered with dark red glandular pubescence.

Bark is used for tanning leather, glandular pubescence. capsules are used for dying wool, and cotton cloths. Bark decoction is drunk for stomach troubles. Paste is applied to snake bite.

Sp. Examin: S.Ch. 249

***Mangifera andamanica* King**

Family: Anacardiaceae

Local Name: Chechetsu

Locality: Changki range, Japu range.

Middle size tree; bark dark brown; leaves obovate, obtuse-acuminate; entire, thinly coriaceous, glabrous; panicles shortly peduncled; flowers tetramerous, pedicelled; drupe oval blunt, compressed; pulp thin; stone large, rugose, tomentose.

Fruit is eaten as mango; juice extract is astringent and colic. It is highly scented than the other two *mangifera* spp., and is made into excellent drinks after fermentation.

Sp. Examin: S.Ch. 250

***Mangifera indica* Linn.**

Family: Anacardiaceae

Local Name: Deti

Locality: Japu, Saring, Turang velley

Large evergreen tree with rough thick bark; leaves crowded, oblong or obovate-lanceolate, bluntly acuminate, glabrous; flowers greenish yellow, scented, male and bi-sexual on the same

panicles; drupe large (larger than the other two *Mangifera* sp.) pulpy, globose, laterally compressed.

Same as *Mangifera sylvatica*.

Sp. Examin: S.Ch. 251

***Mangifera sylvatica* Roxb.**

Family: Anacardiaceae

Local Name: Pong~~e~~nsu

Locality: Changki range, Merangkong

Tall and lofty evergreen tree; bark brownish grey, thick. Leaves narrow, long petioled, glabrous, obovate, acuminate; panicles large, ascending slender; flowers pinkish yellowish with glabrous pedicels; drupe 6-7 cm. long ovate, obliquely tapering and hooked, slightly compressed pulpy.

Wood is used in constructional work, and made to hewn drums; Resinous gum is burnt as insecticides as well as scent. Fruits are eaten as mango, made into pickles and juice as colic, astringent and fermented into a drinks.

Sp. Examin: S.Ch. 252

***Manglietia insignis* Blume**

Family: Magnoliaceae

Local Name: Tzu-angtong

Locality: Changki range

A very large evergreen tree, young branches petioles and pedicels pubescent, otherwise glabrous. Leaves lanceolate, about 25 cm long; flowers scented, dull red with pale green veins; fruiting spike narrowly ovoid and brilliant red.

Wood is used for furnitures and carving, also used as timber. Flowers are used as ornamental, seeds are used in birds catch/trap effectively.

Sp. Examin: S.Ch. 253

Manihot esculanta Crantz

Family: Euphorbiaceae

Local Name: Alishi

Locality: Longjang, Changki

Soft wooded shrub; leaves palmately 5-6 lobed, membranous, finely pubescent beneath; lobes oblanceolate, petiole long, usually reddish.

Roots yield cassava starch and tapioca meal and form a valuable food stuff. Boiled root after carefully peeling off the outer skin is fermented to wine. Roots and leaves are fed to domestic animals as fodder and eri-silk worm feed on leaves and the pupae of eri-worm is a delicacy. 'Probably this plant was brought by the Nagas with their migration from South East Asia as a secondary food'.

Sp. Examin: S.Ch. 254

Maranta arundinaceae Linn.

Family: Marantaceae

Local Name: Aammshi (Arrow root)

Locality: Cultivated in Jhum field.

Perennial leafy herbs, flowers are white in clusters; rhizome inter node with the scales; fleshy with starchy bifrous.

The leaves are used as *Phryneum* sp. The roots are eaten after boiled in water. Root made into flour and used as staple food.

Sp. Examin: S.Ch. 255

***Melastoma malabathricum* Linn.**

Family: Melastomaceae

Local Name: Zukyim

Locality: All over study area.

A very variable shrub, sometimes a small tree; bark reddish brown, thin; leaves lanceolate to oblong; flowers in terminal corymbose panicles, mauve purple; fruit broadly ovoid, truncate, pulpy within.

Plant is astringent and used in diarrhoea and dysentery and lencorrhoea. Paste of the bark and roots are used for healing wounds and other skin diseases.

Sp. Examin: S.Ch. 256

***Melia dubia* Cav.**

Family: Meliaceae

Local Name: Aiek-Talo

Locality: All over Nagaland.

Large tree upto 30 mt. high; crown large. Bark dark brown; leaves pinnate, ovate-lanceolate to ovate-rounded, acuminate, serrated to entire; flowers creamy white drupes pulpy, yellowish, spicklet with silvery white dots.

Wood is used for timber and pulpy fruits are eaten.

Sp. Examin: S.Ch. 257

***Melocanna bambusoides* Trin. (*M.baccifera*.)**

Family:Poaceae

Local Name:Zeliang-~~Boo~~

Locality:Japu Range

Culms simple, distant, clothed with persistent sheaths, upto 20m. tall and 3-4 cm. in diameter; Nodes marked by a thin ring. Internodes smooth, 30-50 cm. long, soft, thin walled; Culm-sheath yellowish, brittle, striate, covered with whitish appressed hairs 12-15 cm. long, 10-15 cm. broad at the base; Leaves lanceolate, scabrous, twisted point, inflorescence a large compound panicle, dropping, caryopsis large, 7-12 cm. long, 5-6 cm. in diam; Fleshy, obliquely ovoid, beak curved.

Shoots eaten as vegetable. The shoot is crushed, fermented and taken as vegetable. Fermented juice is acidic and is used as a contentment. Roasted seed is a delicacy. Besides, the culm is used in house construction, basket and mat work and various constructional works.

Sp. Examin: S.Ch. 258

***Mesua ferrea* Linn.**

Family:Clusiaceae

Local Name:Mangi (Ironwood)

Locality:Changki range, Japu range

Middle sized glabrous evergreen beautiful tree; bark smooth; leaves opposite dark green and shining above, pink when young, acuminate; flowers showy, solitary, axillary, white, scented; fruits ovoid, conical-pointed, stony.

Wood is called the iron wood; hard, durable, excellent for constructional purposes, for making implements, armours etc. Tree is planted as ornamental. Flowers are crushed and applied on burns, pilous and in snake bite. Seeds are burnt as candle for illumination and used as fuel in the kitchens.

Sp. Examin: S.Ch. 259

Michelia champaca Linn.

Family: Magnoliaceae

Local Name: Chaapa sung

Locality: Changki range.

Tall tree, evergreen; leaves ovate to lanceolate, coriaceous, pubescent when young, when mature glabrous; flowers solitary, yellow, fragrant, bud silky; fruiting spikes are long, seed fleshy ariled.

Wood is extensively used for making furniture, wood carving, and for construction works. Flowers are used for its fragrance scent and as ornamental.

Sp. Examin: S.Ch. 260

Michelia mannii

Family: Magnoliaceae

Local Name: Spasung

Locality: Changki range

A middle sized evergreen tree; wholly glabrous; branches lenticelled, leaves oblanceolate with subacute apex, flowers axillary, white, solitary; fruits 16 cm long, fleshy, 2 seeded.

Wood is highly used for furnitures and building materials. It is

exported to other part of the country.

Sp. Examin: S.Ch. 261

Michelia montana Bl.

Family: Magnoliaceae

Local Name: Nerusung

Locality: Changki range

A large evergreen tree; Bark smooth, grey in colour, aromatic; Leaves are ovate, elliptic, suddenly acute, coriaceous, glabrous, shining both side; Flowers white, axillary and solitary seeds reddish brown, faceted suspended by an elastic cord.

Wood is highly used for furnitures and building materials. It is in demand for exporting.

Sp. Examin: S.Ch. 262

Mikania micrantha H.B.K.

Family: Asteraceae

Local Name: Japanza

Locality: Occurs all over the study area.

An extensive twiners; leaves ovate, ovate-lanceolate, acuminate, base cordate, entire or dentate; flowers white in dense compound corymbs.

Paste of the plant is used as haemostatic in cuts and also applied to treat sprains and bone fracture. Raw tender leaves are eaten in the case of constipation and indigestion.

Sp. Examin: S.Ch. 263

Milletia auriculata Baker ex Brand.

Family: Fabaceae

→ extensa (Benth.) Baker

Local Name:Alingnengba

Locality:Changki range

A large, robust, woody climber; leaves pitiolate, leaflets green, glabrous above, pale below, obovate; flowers in dense axillary racemes near the ends of the branches, whitish; pod straight, very hard.

Paste of the root applied to sores on cattle to kill vermin; the plant is crushed and washed into the stream to kill the fish. Small twig of this plant is in every birds nest, it is said the twig is kept by the birds as medicine for young chicks. It may have some medicinal value to them.

Sp. Examin: S.Ch. 264

Mimosa pudica Linn.

Family:Mimosaceae

Local Name:Mayakza

Locality:All over in secondary forests at lower altitude.

Prickly under-shrubs; sensitive; leaves bipinnate, digitate; flowers pink, 1-3 globular exillary heads, stiff, bristly bracteoles; pod constricted spreading on sutures.

Paste of the root is applied to treat vaginal infections, sexually transmitted diseases, ring worms and other skin deseases.

Sp. Examin: S.Ch. 265

Moringa oleifera Linn.

Family:Moringaceae

Local Name:Drum stick

Locality:Tsurang valley, Tuli.

A small or medium sized tree, bark corky, deeply fissured; young parts tomentose. Leaves tri-pinnate, very long, flowers white, fragrant in large panicles. Pod pendulous, ribbed; seeds trigonous winged.

Leaf juice is drunk in dysentery and diarrhoea, pods and tender leaves are eaten as vegetable. Seeds are burnt to light the fire as well as for light illumination.

Sp. Examin: S.Ch. 266

Morus alba Linn.

Family: Moraceae

Local Name: Mulberry

Locality: Toubo, Ungma

A moderate sized tree; bark vertically fissured with warts, leaves variably, serrate; Flowers inconspicuous, greenish, fruits are collectively of numerous drupes, black when ripe.

Wood is domestically used, paste of the bark is applied in soars. The leaves are feed to Eri worms. Young tender leaves are eaten as vegetable.

Sp. Examin: S.Ch. 267

Morus laevigata Wall.

macrowra MIA

Family: Moraceae

Local Name: Tankeeseng

Locality: Meinkong, Longkhum

Large tree; young parts with soft hairs; branches covered with horizontal lenticels; bark is rough and dark-brown; leaves ovate, finely serrate, membranous, scaberulous above, glabrous

beneath; spikes elongated, drooping; fruits insipid cylindric syncarps.

Wood is excellent and used for various constructional works. Milky latex is collected and mixed with burnt ashes of *Dendrocalamus* sp. (bamboo) leaves and is used for inscription in shawl and other cloths.

Sp. Examin: S.Ch. 268

Muckia maderaspatana (Linn.) Roemer

Family: Cucurbitaceae

Local Name: Tephamoli

Locality: Changki Valley

Scabrous climbing herbs; tendrils simple; leaves serrate; flowers small, yellow; fruit berry.

Roots are chewed to relieve toothache.

Sp. Examin: S.Ch. 269

Musa sanguinea Hk.f.

Family: Musaceae

Local Name: Arum mongo

Locality: Occuring throughout the study area in shaded places.

Underground stout rhizomatous herb; aerial false stem, slender, made of sheathing leaf-bases, dark brown; leaves green, oblong, large, lanceolate, glabrous, shiny; flowers in spadix, drooping pale yellow; fruits starchy and pulpy; seeds small and many.

Several varieties of Musa are cultivated; plantain juice is drunk as antithirst, drunk to treat gastric problems and as colic and

to neutralise alcohol¹ drunkenness in the body. A kind of pink and small earthworm lives in the leaf sheaths is steam baked with the plantain leaves and is applied to cure toothache; dried leaves are burnt to ashes and used as shampoo for silky hairs; and also used as salt in the curries. Too much salt in curries are neutralised by dipping for sometime a piece of plantain in the pot. Inflorescence and core of the plantain are eaten as vegetable. Unripe fruits are also cooked and eaten. Stem of *Musa* spp. were used in reinforcement of bullets. During the war with British colonial, Nagas used this method to protect from the bullets.

Sp. Examin: S.Ch. 270

Musa sapientum, Linn.

Family: Musaceae

Local Name: Septsu mongo

Locality: Mangmetong

Stout rhizomatous herb; aerial false stem made of sheathing leafbases, reddish brown; leaves green, oblong, large, lanceolate, glabrous, shiny; flowers in spadix, drooping; fruits fleshy, starchy, seeds many and small.

Same as *Musa sanguina*.

Sp. Examin: S.Ch. 271

Mussaenda frondosa Linn.

Family: Rubiaceae

Local Name: Sapaklarinaro

Locality: Changki range.

A handsome shrub; leaves elliptic-oblong or ovate; flowers in terminal cymes, yellowish green outside and orange red within; berries sub-globose or ovoid.

Paste of leaves and flowers are externally applied on ulcers. A weak decoction of dried shoots is given to children to relieve cough. Root decoction is considered alterative and demulcent and used in the treatment of white leprosy and eye troubles.

Sp. Examin: S.Ch. 272

Mussaenda macrophylla Wall.

Family: Rubiaceae

Local Name: Sapaklar, Maro

Locality: All over study area.

Shrubs; leaves broadly elliptic; flowers crowded, orange red; fruit berry, ellipsoid, hairy.

The paste obtained by crushing leaves is haemostatic aqueous extract of leaves, bark and roots is drunk to cure mouth ulcer and appetite.

Sp. Examin: S.Ch. 273

Mussaenda roxburghii Hk.f.

Family: Rubiaceae

Local Name: Noksangtsuben

Locality: All over study area.

Shrub; stem hairy above; leaves oblong-lanceolate, stipulate; flowers many; fruit berry crowned.

Aqueous extract of young twigs drunk to relieve hick-up, heart

and lung troubles.

Sp. Examin: S.Ch. 274

Myrica esculanta Buch.-Ham. ex/ D. Don

Family: Myricaceae

Local Name: Achensu

Locality: Longkhum, Dibuya

An evergreen tree, bark thick; leaves pubescent, lanceolate or oblanceolate, obtuse, serrated with resinous gland beneath; fruits drupes, fleshy and red when ripe, spindle shaped fibrous, radiating from the rugose nut.

Wood is excellent for fuel, charcoal; paste of the bark is applied to treat mouth ulcer. juice extract of drupes is drunk to treat urinary troubles and as astringent. Acidic drupes are sold in market.

Sp. Examin: S.Ch. 275

Nicotiana tabacum Linn.

Family: Solanaceae

Local Name: Moko

Locality: Through out the study area.

An erect, glandular, pubescent herb; leaves large, ovate-oblong or elliptic, acuminate, pubescent; flowers many, long, rosy, bracteate; capsule long with slightly accrescent calyx.

Leaves are warmed and placed upon the part where blood clotting has occurred. This is repeated several times and initially the blood clot is removed by sucking through a goat-horn. Leaf paste is applied in the anus of a patient suffering from food poisoning

and excessive vomiting. It is also used as haemostatic in case of cuts. Leave juice applied as a protection against insect- and snake-bites, leeches, etc. Leaves are exposed in the sun for a few hour and crushed with both hands, till juice starts coming out. It is then rolled coarsely, dried in the sun and smoked in pipes. Dried tobacco leaves are chewed to relieve tooth-ache. Tobacco mixed with *Papaver somnifera* is smoked in pipes by Konyaks. It is said that one day the God "Lichaba" happened to see a man whose wife being dead was drying his wife's dead-body by smoking in the entrance room of his house (It was a custom among the Ao, the Sangtam and the Khiamungan tribes too smoke the dead body to dryness first and only then the dead body was kept exposed on the platform above the cemetery). Seeing this the God "Lichaba" felt pity for the man and gave him tobacco, in order to make the man forget his grief. Since then men started using tobacco.

Sp. Examin: S.Ch. 276

Panax ginseng C.A. Meyer

Family: Araliaceae

Local Name: Tsudirmozu

Locality: Saramati range, Yakoo

Glabrous perennial herb; from more or less branching thick root; leaves compound with 5-6 leaflets; leaflets ovate or obovate, dentate, serrate with cuspidate teeth; flowers umbel, greenish-white; fruits 2-3 seeded, red when ripe.

Roots are dried and made into powder is taken for the treatment of heart problems, diabetes, cancer, tuberculosis, ulcers, etc.

It is also taken as aphorodieac; leaves are eaten as vegetable, fruits is eaten by phytes : tragopan (bird).

Ginseng is an oriental herbal remedy which has been in use for the last 5000 years. Extensive research has shown that ginseng contains medicinally useful substances such as ginsenosides, minerals - iron, copper, zinc, manganese, magnesium, germanium, phosphorus, sulphur etc. Enzymes, carbohydrates, aminoacids, proteins, peptides, flauonoids, essential oils, fatty acids, phytosterols, crude fibres, adenosine, maltol and phenolic compounds. Ginseng is widely consumed in the world, which is herald as an "elixir of life" in the orient, is the only herbal remedy that is being extensively researched all over the world and many of its chemical and pharmacological properties have been established. Ayurvedic system of medicine recognises the medical properties of ginseng and monographs on the herb can be found in Ayurvedic text-books and literature.

A symposium^{was} held at Lugano by WHO (World Health Organisation), thereafter, scientist have organised several international congress on ginseng research. The fifth international Ginseng symposium was held in Seoul in August 1988, where many hitherto unknown rapeutic effects of Ginseng were brought to light. In a test carried out acording to the official specifications of the Swiss National sports Association, it was proved that Ginseng contains "no substances in the¹⁸ding list of the international Olympic Committee". Thus Ginseng is recommended, in many countries, for several years to competative athlets. There are records that some of the world celebrities have used ginseng for

improvement of their health and relief from stresses. Stress hastens ageing and weakens the physiological processes.

Claimed pharmacological and chemical effects of *Panax ginseng* (From IL. 1983);—

1. Increase stamina (2) antipyretic (3) prevents tuberculosis (4) controls blood pressure (5) neurotonic (6) normalizes gastrointestinal system (7) strengthens liver functions (8) divertic (9) anthihaemorrhagic (10) treats tumors (11) treats diabetes.

Sp. Examin: S.Ch. 277

Panax psuedo-ginseng Wall.

Family: Araliaceae

Local Name: Takumtsu mozu

Locality: Chentang, Changsang

Large perennial herb, pinnate leaves with usually large ovate long-pointed, toothed leaflets. Many yellowish green flowers in umbels in a branched cylindrical cluster to about 30 cm. Fruits black, 5-angled.

Uses, same as *Panax ginseng* (There are three varieties of *Panax pseudoginseng* within study area.)

Sp. Examin: S.Ch. 278

Parkia roxburghii G. Don

Family: Mimosaceae

Local Name : Yongjak

Locality : Japu range, Changki valley.

Large tree upto 25 mt; leaves bipinnate 20-30 pair; leaflets 40-

timoriana (A. DC) Merr.

80 pairs; flowers in globose or clavate heads, each head supported by a coriaceous bract; pod long flat, coriaceous, tardily dehiscent.

Pods are eaten as vegetable, seeds are roasted or soaked in water and eaten.

Sp. Examin: S.Ch 279

Passiflora edulis Sims.

Family:Passifloraceae

Local Name:Entsulashi

Locality:Chujuyembang, Mokokchung

Perennial climber; Leaves 3-lobed toothed glabrous; flower large, showy, bluish - white; fruits large sweet fragrant inside, turn into dark purple when ripe.

Fruits ~~are~~ eaten as desert, Roots are dried and mixed with tobacco and smoked in pipe; pasted roots is applied to snake bite; young tender leaves are eaten as vegetable and boiled; decoction is drunk for the treatment of heart problems, blood pressure, malaria, and as liver tonic.

Sp. Examin: S.Ch. 280

Perilla ocimoides Linn.

Family:Lamiaceae

Local Name:Napa

Locality:Cultivated in Jhum field.

A strongly aromatic bush; stem, leaves and petiole covered with grey hairs; leaves ovate, coarsely serrate, acuminate, membranous, scaberulous above, hairy beneath; flowers small, white

in axillary spicate racemes.

Used as cultigent, juice extract is drunk to stomach trouble gastric problems; used as insecticide, and as haemostatic.

Sp. Examin: S.Ch. 281

Pinanga gracilis Bl.

Family: Arecaceae

Local Name: Changpangmetzulasu

Locality: Changki, Chungtia.

Shrubs; leaves unipinnate; petiole and sheaths scurfy; spathe solitary; male flowers in 3 rows, female flowers smaller than males; fruit scarlet; seeds ellipsoid.

Nuts are eaten as betel nuts with *Piper betel*. Juice extract of nuts as pan and young stems is consumed as a beverage/stimulant. Stem is used as tooth brush, leaves are used for thatching house.

Sp. Examin: S.Ch. 282

Pinus kesiya Royle ex Gord.

Family: Pinaceae

Local Name: Misukbasung

Locality: Pongro, Kheperi

Large evergreen tree; Bark thick and furrowed; Needles long semiterete grooved above, sheaths persistent; cone long-peduncled, ovoid, tips of scales thickened, flat or convex transversely peeled; seeds oblong, winged.

Wood is used as timber and for construction works; Leaves are crushed and soaked in water overnight and filtered is used in

massage to cure body-ache. Resin is used as fuel while cooking.

Sp. Examin: S.Ch. 283

Piper betle Linn.

Family: Piperaceae

Local Name: Patio

Locality: Satsuk, Japu, Longjang

Tall glabrous, scandent or creeping shrub; leaves orbicular, ovate, acuminate, glabrous; spikes slender long; fruiting spike long.

Tuberous like a potato from the old plant is used as black dye (it fetch high price in the market). Leaves are masticated with a little lime and piece of *Areca catechu* nut, as pan called "Kozulem". Leave paste is applied in cuts as haemostatic. If the rice is over cooked and burn, to avoid the burnt smell, a leaf of this is put under the lid of the rice pot. It is quite effective.

Sp. Examin: S.Ch. 284

Piper longum Linn.

Family: Piperaceae

Local Name: Patiotelala

Locality: Changlangshee, Tobu

Shrub; leaves entire, often unequal-sided; flowers very minute, dioecious and in spike.

Leave paste is applied as haemostatic; Root decoction is drunk as expectorant and stimulant.

Sp. Examin: S.Ch. 285

Plantago major Linn.

Family: Plantaginaceae

Local Name: Jangremriza/Akaba

Locality: Mokokchung, Khensa.

Herbs; leaves oblong-ovate; inflorescence spike; flowers crowded, bracteate; seeds minute, black.

Leaves are crushed to a paste and applied on burns, and in cuts. Whole plant is eaten as vegetable and sold in local market. Seeds are crushed and made into paste is applied in sprain.

Sp. Examin: S.Ch. 286

Pseudostachyum polymorphum Munro

Family: Poaceae

Local Name: Arang tasula

Locality: Tzurang valley, Changki valley.

A large shrubby bamboo with single culms from a long, creeping, jointed rhizome; Culm 18 m. tall, thick walled, smooth; Internodes 22 cm. long, 35 mm. in diameter; Culm-sheaths shorter than the internodes, triangular, truncate in outline; Leaves oblong - lanceolate, unequally rounded at the base, alternate at the top into a long twisted point.

As discussed in Folk Practices "Bamboos".

Sp. Examin: S.Ch. 287

Pyris ovalifolia D. Don

Family: Ericaceae

Local Name: Meimtung

Locality: Sar⁸mati.

Small, deciduous trees; leaves ovate or elliptic; flowers white in simple terminal and axillary racemes.

Poisonous plant. Used in arrow poisoning.

Sp. Examin: S.Ch. 288

Quercus griffithii Hk. f & Th.ex DC.

Family: Fagaceae

Local Name: Sarangtaluba

Locality: Meinkong, Chari

A large deciduous tree; young parts usually rusty-pubescent; bark warty, deeply furrowed; leaves obovate, obovate-oblong or oblanceolate, acute or sub-acuminate, dentate, serrate, coriaceous, glabrous, male spikes fascicled at the base of the young shoots subpendulous; seed ovoid, smooth, style base persistent.

Wood is extensively used in constructional work. It is excellent for fuel wood; kind of silk worm (Tussar) is feed on this leaves. Hornet bees extract the juice of this plant and found making hives near this plant. Hornet hives are kept near this plant and the larva of the bee is ^aof ^efficacy to Nagas.

Sp. Examin: S.Ch. 289

Quercus serrata Thumb.

Family: Fagaceae

Local Name: Sarang/Sulem

Locality: Chari, Longsa

Large, deciduous tree; bark warty, thick, deeply furrowed; leaves

acutissima Carruth

lanceolate, oblong-lanceolate, acute or acuminate, serrate, thinly coriaceous, glabrous and shining when mature, male spikes elongated, rachis, tomentose; female flowers on short axillary spikes, acorns solitary or pairs, woody, sub-globose.

Same as *Quercus griffithii*.

Sp. Examin: S.Ch. 290

***Rhaphidophora hookeri* Schott.**

Family:Araceae

Local Name:Sangami

Locality:All over study area.

Stout shrub, climbing on tree by roots; leaves distichous, entire or pinnatifid; spathe ovate, acuminate, deciduous; spadix sessile.

Young tender leaves are eaten as vegetable (habit introduced by the Britishers in 18th century). It is also fed to domestic animals.

Sp. Examin: S.Ch. 291

***Rheum Emodi* Wall.**

Family:Polygonaceae

Local Name:Tenemza

Locality:Hellipong

Herbs, 1-2 m. high; root and rhizome solid, cylindrical, outer surface irregularly wrinkled; leaves large, radical, 60 cm. in diameter, petiole very long, 1 m. in length and over 1 cm. in width, brown externally, white internally; flowers small 3 mm. in diameter.

Decoction of the root and rhizome drunk to purgative, astringent, tonic and diarrhoea.

Sp. Examin: S.Ch. 292

Rhododendron arboreum Sm.

Family:Ericaceae

Local Name:Metzuben

Locality:Longkhim and Saramati Range

Middle sized trees; trunk usually crooked; leaves oblong, oblong lanceolate, dark green; flowers in terminal corymbs, scarlet or blood red. Capsules oblong, cylindric, obscurely angled.

Wood used as fire wood; flowers are eaten. Root bark (Decoction) is drunk during stomach troubles.

Sp. Examin: S.Ch. 293

Rhododendron barbatum Wall. ex. G. Don

Family:Ericaceae

Local Name:Metzuben

Locality:Longkhim & Saramati Range

Shrubs or small trees; leaves elliptic lanceolate, shining above, lower surface wooly, becoming hairless; flowers in compact umbells, blood red with black crimson blotches at base within.

Same as *R. arborium*.

Sp. Examin: S.Ch. 294

Rhus javanica Linn.

Family:Anacardiaceae

Local Name:Tangpu

Locality: Occurs all over study area

Middle sized tree; bark grey; leaflets ovate, ovate-lanceolate, oblong-elliptic, acute or acuminate, base crenate, dentate; flowers creamish-white; drupe ovoid, orbicular pink when ripe.

Fruits husks are mixed with water and taken bath to relieve measles and prickly heat. Mixed with chicken black drops is drunk for the treatment of mushroom and tapioca poisoning. Bile of black variety crap called "Tzuben" mixed with the decoction of fruits husk of this plant is drunk for high fever. Decoction of the fruit husk used as a mordant to cotton yarns, cloths, goats hairs, cane rattans, bamboo splints and wood. The charcoal of the wood made into powder is mixed with gun powder.

Sp. Examin: S.Ch. 295

Rhus simialata Murr.

Family: anacardiaceae

Local Name: Tangpu

Locality: Meinkong, Chesor

Small deciduous tree, gregarious in habit; bark asy-grey, warty; leaves imparipinnate, compound; leaflets opposite, lateral sessile, elliptic, ovate, acuminate, deeply crenate, mebraneous, pubescent; panicles terminal, conical, dense flowered; flowers whitish-pale green; drupe sub-globose, compressed.

Same as *Rhus javanica*.

Sp. Examin: S.Ch. 296

Rhus succedanea Linn.

Family: Anacardiaceae

Local Name:Charak

Locality:Longkhum

Medium sized tree; leaves compound, odd-pinnate; leaflets ovate-oblong or lanceolate, long-acuminate, entire; flowers small, yellowish green in axillary panicles; drupes orbicular-compressed, rugose.

It is a poisonous plant, latex or resin is carefully collected and mixed with the ashes of *Dendrocalmus* sp. leaves used in inscriptions and coated to Dao handles, shields, and in baskets, Tobacco pipes etc. for water proof. Juice of the plant is allergic to human body, gives blisters to skin. To some even by passing the tree gives a extensive blister to the skins. Wood is used for timber.

Sp. Examin: S.Ch. 297

Ricinus communis Linn.

Family:Euphorbiaceae

Local Name:Phakowa

Locality:Chujuyimbang, Khensa.

Evergreen shrub, sub-arborescent; shoot and panicles glaucous; leaves palmately lobed, membranous, oblong, acute and gland serrated; racemes stout erect; dioecious flowers, pale yellow; capsule, achinate, seed oblong, smooth, mottled.

Leave is warmed in the fire and applied to forehead to relief head-ache, paste is applied as poultic for boils and pimples. Leaves are also feed to Eriworm (Silkworm). Seeds are roasted and eaten mixed with *Rhus* seed as purgative and as antidote. The

whole plant is spread in the field as fertilizer.

Sp. Examin: S.Ch. 298

Roscoea alpina Royle.

Family: Zingiberaceae

Local Name: Rejeb naro

Locality: Sramati range.

Perennial herbs with thick fleshy root stock; leaves long, lanceolate; flowers zygomorphic, pinkish-purple, showy.

Plant paste is applied to bone fracture and sprains.

Sp. Examin: S.Ch. 299

Rubia cordifolia Linn.

Family: Rubiaceae

Local Name: Ayunumetsubamoli

Locality: Noklak, Hellipong

Climbing herb; root-stock perennial; stem and branches tetragonous; leaves in whorl of 4-cordate-ovate; nerves and margins prickly; flowers small, red, fruits succulent, 2 seeded.

Plant paste is applied to ring worm, Leucoderma patches and skin diseases. Roots are used as red dye as *Rubia sikkimensis*.

Sp. Examin: S.Ch. 300

Rubia sikkimensis Kurz

Family: Rubiaceae

Local Name: Awali/Wailuk

Locality: Tuensang, Noklak

Perennial climbing herb with a red root stock; stem scabrid,

aculeate and tetragonous; leaves whorled, scabrid, acuminate, coriaceous, sharp hispid; flowers yellowish, terminal, umbellate, fruit globose, black when ripe.

Root red in colour is dried, pounded and mixed with the bark decoction of *Symplocos grandiflora* makes into a brilliant red colour for dye. *Rubia* mixing with *Euriya acuminate* gives bright red colour. After the red dye cloths is soaked to the decoction of *Rhus* husk and boiled to mordant the cloths. Dying is done carefully as *Rubia* plant blisters the skins. Paste of the root is applied to snake bite.

Sp. Examin: S.Ch. 301

***Rubus ellipticus* Sm.**

Family: Rosaceae

Local Name: Chembensu

Locality: Hellipong

A shrub; leaves alternate, leaflets sharply often irregularly toothed, lateral sessile, terminal stalked; flowers white or pink, internal and axillary corymbose, solidary or in small clusters; fruit an achene, yellow.

Roots decoction is drunk to hepatices, kidney troubles. Berries are eaten.

Sp. Examin: S.Ch. 302

***Rubus moluccanus* Linn.**

Family: Rosaceae

Local Name: Chembensu

Locality: Hellipong

Shrub; leaves most variable in texture and pubiscent, petiolate; flowers in terminal panicles or in axillary capitate clusters, white; fruit globose, succulent.

Roots uses are same as *R. ellipticus*.

Sp. Examin: S.Ch. 303

***Rumex nepalensis* Spreng,**

Family: Polygonaceae

Local Name:

Locality: Saramati range,

Robust herb with stout perennial root stock; leaves oblong or elliptic ovate, cordate, Flower over long stalked, upper nearly sessile; flowers bisexual, small green in whorles on a long racemes; nut brown.

The bruised leaves are rubbed on muscle swelling and in sprain.

Sp. Examin: S.Ch. 304

***Saccharum officinarum* Linn.**

Family: Poaceae

Local Name: Mochi

Locality: Cultivated all over Nagaland.

A tall stout perennial with erect clumps, inflorescence, a large silky and much densely branched panicle, margin scabrid in the leaves, joint of spikes and pedicles glabrous, bisexual flowers.

Juice extract is drunk for the treatment of jaundice and urinary diseases, clumps are chewed for whitening the teeth; (As tooth brush) leaves are put in preperation of rice beer.

Sp. Examin: S.Ch. 305

***Saccharum spontaneum* Linn.**

Family: Poaceae

Local Name: Pakten

Locality: Changkikong, Langpangkong, Chari

Variable perennial grass; rhizome thick; erect stem, solid above, hollow below, slender, nodes with silky hairs, below the flowers heads smooth, shining; Leaves erect and linear, leaf sheaths often blotched, inflorescence panicle silvery, slender and dense.

Leaves are used for thatching, mats, screens and brooms. Root paste is applied to snake bite.

Sp. Examin: S.Ch. 306

Sapindus mu^korossi Wendl. *Poerth*

Family: Sapindaceae

Local Name: Sangsu tong

Locality: Longkhum, Sutsu.

Tall tree, bark smooth, leaves pinnate, ovate lanceolate, elliptic glabrous, fruits globose, fleshy, 1-seeded drupe, pericarp and endocarp saponaceous, wrinkled, transparent when dry; seed globose, black, loose in dry fruit.

Wood used for domestic purpose and for furniture. The fleshy carples used as soap in washing. Seeds are used as artificial eye in stuffing animal skull.

Sp. Examin: S.Ch. 307

***Sapindus trifoliatus* Linn.**

Family:Sapindaceae

Local Name:Sangsu tong

Locality:Kabza, Setsu

A large deciduous tree, bark scaly; leaves alternate, long, elliptic, glabrous; flowers in terminal, rusty, pubescent panicles, monoecious, white; fruit fleshy, rusty tomentose at first, saponaceous.

Fruits and bark used as soap and shampoo. Seeds used as an effigy for eye. Wood used in construction.

Sp. Examin: S.Ch. 308

***Schima Khasiana* Dyer**

Family:Ternstroemiaceae

Local Name:Meri-Mesang

Locality:Noklak

Evergreen large tree; bark dark redish-brown, thick, rugged, wood red hard durable; leaves crenate, glabrous, vein distinctly reticulate; flowers white, showey fragrant; capsule globose, woody.

Uses same as *Schima Wallichii*.

Sp. Examin: S.Ch. 309

***Schima Wallichii*, Choisy**

Family:Ternstroemiaceae

Local Name:Mesang

Locality:All over Mokokchung Dist.

Evergreen large tree; bark dark grey, thick, rugged, wood red

or white, hard durable, leaves entire, chartaceous; flowers white, fragrant, capsule globose, woody.

Flowers are worn in earlobes in the forest to protect from the evil spirits. Young leaves eaten as vegetable, a kind of "Tent caterpillar" which feeds on it is a delicacy, the thick bark which contains glassy silicate needles is scrapped to goats and pigs on the skin to excelerate the hair growth. It cure the skin diseases to animals; wood is hard and excellent for constructional and building works.

Sp. Examin: S.Ch. 310

Scutellarea glandulosa Coleb.

Family:Lamiaceae

Local Name:Arem-napa

Locality:Kongpha, Longjang

Dwarf pubescent annual herb; leaves glandular, hairy, oblong-lanceolate, obtuse, irregularly serrate, sparsely hairy; flowers opposite in glandular racemes.

Leaves are eaten to stomach-ache. Juice extract of the plant is drunk for the treatment of malaria and liver disorder.

Sp. Examin: S.Ch. 311

Scutellaria rivularis Wall.

Family:Lamiaceae

Local Name:Angamejep Talula

Locality:Changki range

Dwarf glabrous herb with quadrangular stem, creeping below; leaves ovate, crenate; racemes all axillary, spicate; flowers

barbata D Don

light purple; granular nutlets.

Paste of the plant is applied to insect bites and spider bites.

Sp. Examin: S.Ch. 312

Semicarpus anacardium Linn.f.

Family:Anacardiaceae

Local Name:Arentong

Locality:Changki range

Middle sized trees; bark blackish or dark brown; leaves broadly obovate, elliptic oblong obtuse, cuneate in panicles; drupe oblong, black when ripe; fleshy pseudocarp orange yellow when ripe.

Paste of the bark is applied in boil, pimple and scratching; nut bruised is given as vermifuge.

Sp. Examin: S.Ch. 313

Senecio cappa D. Don

Family:Asteraceae

Local Name:Mesakraza

Locality:Pangsa, Noklak

Gregarious under shrubs, young parts grey and zig-zag; leaves ovate, obovate or elliptic, acute base narrowed, doubly serrate; petiole auricled at base; Head axillary and terminal paniced corymbs; involucre white.

Paste of the plant is applied to cure skin deseases; used as insectiside; applied to boils.

Sp. Examin: S.Ch. 314

Sesamum orientale Linn.

Family: Pedaliaceae

Local Name: Pingnak

Locality: Satsuk, Japu.

Herbs; leaves opposite or alternate above; hair glandular, deeply lobed or devided; flowers zygomorphic, bisexual, solitary in cymes; fruits capsular, oblong, bluntly tetragonous.

Seeds used as condiment in confictory; seeds are roasted and pounded into powder mixed with graps and fermented, used in making various curries. Pounded seeds are also used in dying cloths. Leaves are crushed and used as soap in washing.

Sp. Examin: S.Ch. 315

Silvianthus bracteatus Hk. ^f F.

Family: Carlemanniaceae

Local Name: Peningwa

Locality: Changki

Shrubs; leaves elliptic, membranous; flowers white; fruit crowned with membranous calyx-lobes.

Paste made out of young twigs is used as astringent, applied to bone fractures and sprains.

Sp. Examin: S.Ch. 316

Sinobambusa elegans Nakai

Family: Poaceae

Local Name: Meri Awaza (Tasula)

Locality: Chentang, Piong.

An evergreen, slender, tufted, shrubby bamboo; Culms dark green,

4-8 m. tall, flattened on one side in alternate internodes; Nodes raised; Internod 18-30 cm. long, 2-4 cm. in diameter; Culm-sheaths 8-10 cm. long, 4-6 cm. wide, papery, striate; Leaves linear - lanceolate, long acuminate, 10-13 cm. long, 7.5 to 14.5 mm. wide, short petioled, ligule short.

This bamboo is known for its softness and flexibility and is extensively used in bamboo craft .. Other uses of the bamboo are discussed under Folk Practices "Bamboos".

Sp. Examin: S.Ch. 317

Skimmia laureola (DC.) Hk.f.

Family: Rutaceae

Local Name:

Locality: Noklak

Aromatic shrub; bark greyish white, smooth; leaves crowded at branch tip; oblong-lanceolate, oblanceolate, acuminate, narrowed at base, glabrous; flowers greenish-yellow; fruits 1-3 seeded, ellipsoid drupes.

Leaves paste applied to small pox and skin diseases; plant used as insect repellent.

Sp. Examin: S.Ch. 318

Smilax aspera Linn.

Family: Smilacaceae

Local Name: Aoksubaza

Locality: Mokokchung, Noklak

Extensive climber with spines; leaves ovate, discoid, alternate, linear-lanceolate, reticulate, basal nerves; flowers umbellate,

sessile, white, fragrant; fruits pendulus, globose, red.

Root decoction is drunk for the treatment of epilepsy, urinary troubles and vaginal diseases. Animal traps are made of this plant. It is said the spines in the plant is very effective to

kill animals by means of hooking the spines in blood streams.

Sp. Examin: S.Ch. 319

Smilax lanceaefolia Roxb.

Family: Smilacaceae

Local Name: Aoksubaza

Locality: Mokokchung, Chare

Extensive climber with sharp spines; leaves petiolate, orbicular, lanceolate or oblong lanceolate; flowers yellowish white in many flowered axillary umbels; fruits pendulus, globose.

Same as *Smilax aspera*.

Sp. Examin: S.Ch. 320

Smilax macrophylla Roxb.

Family: Smilacaceae

Local Name: Aoksubaza

Locality: Chesore

Armed climbing shrub; leaves alternate, glossy, petiole biciferous above the base; flowers small, dioecious, in umbels; fruits a globose, berry.

ovalifolia Roxb.

Young shoots are eaten as vegetable. Other uses same as *Smilax aspera*.

Sp. Examin: S.Ch. 321

Solanum khasianum Clarke/

Family: Solanaceae

Local Name: Akho longkok

Locality: All over Nagaland.

A much branched under shrub with the spines; leaves ovate, prickly; flower white; fruits berry yellow when ripe.

Ripe fruits are sun dried and made into powder is applied in tooth decay and tooth-ache. Ripe berry is introduced inside ~~animals~~ nose when leech and other kind of blood suckers goes inside and it comes out after sometime while sneezing.

Sp. Examin: S.Ch. 322

Solanum kurzii Brace ex Prain

Family: Solanaceae

Local Name: Anlongkok

Locality: Mopongchuket, Sungratsu

Unarmed undershrubs; branches densely woolly; leaves ovate, irregularly lobed, stellate tomentose beneath; flowers in subterminal racemose cymes.

Fruit extract is used in the treatment of blood pressure, malaria and chicken conjunctivitis. Powdered dried leaves used in the preparation of yeast cake for rice beer; berries are eaten cooked or uncooked as vegetable; Leaves are mixed with tobacco while

drying and smooked.

Sp. Examin: S.Ch. 323

Solanum nigrum Linn.

Family: Solanaceae

Local Name: Kumbowa tazakla

Locality: Tuensang, Longkhum.

Herbaceous plant, dark green; leaves ovate-oblong or ovate-lanceolate, narrowed at both ends, glabrous; flowers white, small in extra-axillary, umbellate cymes; fruit a berry, green turning to black when ripe, globose.

Same as *Solanum spirale*. It is sold in market and is a good ^bap~~it~~itizer. Aqueous extract of the plant is used to relieve muscular pain and also used for tanning purposes.

Sp. Examin: S.Ch. 324

Solanum spirale Roxb.

Family: Solanaceae

Local Name: Kumbo-wa

Locality: Changki

Herbs; leaves elliptic; entire, acute, membranous, glabrous; flowers white; in extra axillary racemose, spirally arranged; fruit berry, globose, ripe orange red.

Leaves and young twigs are crushed to a paste and applied on the body to neutralise the toxic substance of bee sting and *Urtica* sp. Leaves and fruits are eaten as vegetable, as well as for the treatment of Malaria, blood pressure and ^dbladder infections.

Sp. Examin: S.Ch. 325

Solanum turvum Swartz

Family: Solanaceae

Local Name: Kachari longkok

Locality: Khensa, Ungma

Shrub ^Asparingly armed upto 3 mt. sparsely pubescent; leaves ovate, serrate or lobed, shortly acuminate, stellate-pubescent; flowers white, dense in lateral often branched; berry globose.

Berry is eaten as vegetable and sold in market.

Sp. Examin: S.Ch. 326

Solanum xanthocarpum Schrd & Wendl.

Family: Solanaceae

Local Name: Akho longkok

Locality: Meinkong, Mokokchung

Low diffused spiny herb; leaves glabrous, oblong, flowers light blue, solitary or in small cymes, few; fruits berry, rounded and whitish blotched in green, yellow when ripe.

Same as *Solanum indicum*.

Sp. Examin: S.Ch. 327

Solena heterophylla Lour.

Family: Cucurbitaceae

Local Name: Khotsu nokjang

Locality: Changki valley

Stems angular; leaves acuminate, sagitate, cordate, nerved at based, distantly serrate; flowers yellowish - white, calyx campanulate, lobes small; fruits oblong, subangular, red in colour.

amplexicaulis (Lam.) Chandh.

Fruits are eaten, leaves are made into paste and applied to bileous infections.

Sp. Examin: S.Ch. 328

Sonchus arvensis Linn.

Family: Asteraceae

Local Name: Napong jeebi

Locality: All over secondary forests.

Root stock creeping, stem glabrous; leaves runcinate-pinnatifid toothed cauline, heads and peduncles glandular-hispid.

Decoction of the plant is drunk to dysentery and cholera. Leaves and young twig is eaten as vegetable, feeds to cattle and goats; paste of the leaves is applied ^{on} to burn and sore; and as haemostatic; it is also applied ^{on} to cure bone fractures and sprains.

Sp. Examin: S.Ch. 329

Sonchus asper Vill.

Family: Asteraceae

Local Name: Yei-tong

Locality: Longmesa, Chujuyembang

Annual, glabrous herb; upper parts glandular, subumbellately branched; leaves lanceolate, half amplexicaul with rounded auricles pinnatifidly toothed; heads crowded.

Leaves paste is applied as haemostatic, to skin diseases. Small pieces of leaves are put in the preparation of yeast cakes for

brew ing rice beer.

Sp. Examin: S.Ch. 330

Sphenoclea zeylanica Gaertn.

Family: Sphenocleaceae

Local Name: Injukaza

Locality: Changki Valley

Annual marshy herbs; flowers greenish yellow, small, sessile, in dense terminal peduncled spikes.

Used as vegetable.

Sp. Examin: S.Ch. 331

Stephania glandulifera Miers

Family: Menispermaceae

Local Name: Ketcha moli

Locality: Changki range, Toubo

Range climber with tuberous roots; tubers globose, deep-yellow inside; leaves orbicular, peltate, lobed margins, membranous, glabrous; flowers yellow peduncles axillary, drupe globose.

Plant paste is applied to bone fracture and sprains, leaves are fed to cattle and goats. Tubers seem to have some medicinal property.

Sp. Examin: S.Ch. 332

Stephania hernandifolia Walp

Family: Menispermaceae

Local Name: Mezurong-moli

Locality: Waromong, Dibuya

japonica (Thumb) Pers

Slender winding clockwise climber; branchlets glabrous striate; leaves long, broad, broadly ovate-deltoid, glabrous, green, thinly felted pubescent; flowers yellow, ultimate umbels, sessile flowers; fruits globose, small, red when ripe.

Paste of the plant is applied to burns and in injuries to heal without leaving marks on the skin.

Sp. Examin: S.Ch. 333

Sterculia alata Roxb.

Family: Sterculiaceae

Local Name: Mezen-batam

Locality: Changki range, Japu range.

A tall tree with a high narrow conical crown and horizontal branches; bark greyish-brown, smooth with horizontal wrinkles; leaves simple, ovate, cordate, glabrous; flowers hermaphrodite, brownish yellow; seeds numerous, tightly packed, elliptic, compressed with white spongy terminal wing.

Same as *Sterculia villosa*.

Sp. Examin: S.Ch. 334

Sterculia *coccinea* Roxb.

Family: Sterculiaceae

Local Name: Achep batam

Locality: Changki and Japu range.

A small tree; bark grey, warty; leaves oblanceolate, acuminate, quite entire glabrous above, adpressed hairs beneath, flowers pale yellow; follicle scarlet, velvety outside, glabrous and red inside, seeds 4-8, ovoid, smooth.

hamiltonii (Kuntze) Adell.

Tender fruit is eaten cooked like beans and mature seeds are eaten fried or roasted.

Sp. Examin: S.Ch. 335

Sterculia villosa Roxb.

Family: Sterculiaceae

Local Name: Ingpang batam

Locality: Changki and Japu ranges.

Moderate sized deciduous tree with a spreading crown; bark smooth and thick; inside light red, fibrous; leaves crowded at the ends of branches, simple, deeply 5-7 lobed, light red when young. Flowers dull yellow, crowded drooping, panicles long; seeds oblong, with a shinning black aril.

Wood is soft and light, used for making bed, benches, etc. Inner bark made into ropes or breast-bands for elephants for dragging timber. Seeds are roasted and eaten. Other Sterculia sp. are also used for making war-drum by Ao-Naga.

Sp. Examin: S.Ch. 336

^e
~~Ster~~^o~~ospermum~~ⁱ ~~chelenodes~~ DC.

Family: Bignoniaceae

Local Name: Mesusung

Locality: Khari, Waromong

Large deciduous tree; leaflets glabrous, elliptic, caudate acuminate; panicle branches, slender, glabrous; flowers fragrant, yellow, tinged and marked pale red; capsule slender, curved pairs; seeds wedge-shaped.

Juice extract of the root and bark is drunk to cure dysentery, cholera, and it is drunk for the treatment of malaria fever. This plant is called the witch among all the plants. The wood is extensively used in construction work for its durability and long lasting.

Sp. Examin: S.Ch. 337

Swertia chirayita (Roxb.) Karst.

Family: Gentianaceae

Local Name: Aluenjangnaro

Locality: Longkhum, Aliba.

Annual or perennial herbs; stem and branches quadrangular; leaves opposite with distinct veins; flowers whitish or blue.

The whole plant is crushed and soaked in water overnight is used as a tonic, stomachic and laxative.

Sp. Examin: S.Ch. 338

Symplocos grandiflora Wall.

Family: Symplocaceae

Local Name: Surumba

Locality: Japu Range

Tree upto 30 m; bark grey with white patches; leaves lanceolate, acuminate, subentire, rigidly coriaceous, glabrous; flowers in racemes; fruits smooth, sub-cylindric.

Bark and leaves are crushed and mixed with the crushed roots of *Rubia sikkimensis* is used for dying cloths into red colour.

Sp. Examin: S.Ch. 339

***Tagetes Indicus* Lindl.**

Family: Asteraceae

Local Name: Kitsung naro

Locality: Various variety occurs in Study area.

Annual aromatic erect shrub; stem cor~~by~~ straited, soft; leaves coarsely serrated, bipinnatifid, glabrous, hispid; flowers in long terminal tubular disc; Achens long, glabrous.

Plant is kept in the kitchen gardens to protect from evil spirits, insects and snakes. Paste of the leaves is applied in the stomach near the naval to cure gastric problems and also applied as poultice. A yellow dye is extracted from this plant.

Sp. Examin: S.Ch. 340

***Tectona grandis* Linn.** *f.*

Family: Verbenaceae

Local Name: Tick-Sung

Locality: Tsurang Valley, Changki Valley

Large deciduous tree, bark pale brown; leaves are broadly elliptic, entire rough above, stellate tomentose beneath; fruits a sub globose drupe.

Wood is used for timber; leaves are used as wrapper and for making plates.

Sp. Examin: S.Ch. 341

***Teinostachyum dullooa* Gamble**

Family: Poaceae

Local Name: Depu/Chuju

Locality: Chungtia, Chuju, Yemlang.

A straggling bamboo similar to *T. griffithii* with smaller size and dark-green brown culms; Culms erect, arching, 4-10m. long, branched from the nodes; Internodes 40-55 cm. long, thin, walled; Culm-sheaths 13 cm. long, 30 mm. broad, slightly veined, convolute; Leaves oblong-lanceolate, 15-20 cm. long, 12-30 mm. broad, petioled.

The culms are thin, light and durable. Mainly used in weaving looms, wall mats, etc.

Sp. Examin: S.Ch. 342

Teinostachyum griffithii Munro

Family: Poaceae

Local Name: Anii/Anna

Locality: Tuli, Tsurang valley, Chungtia.

A straggling or sub-scandent bamboo; Culms erect, arching, 8-16 m. long and 6-10 cm. in diameter, thin walled, verticillately branched from the nodes; Internodes 45-65 cm. long, scattered; Culm-sheaths 15 cm. long and 36 mm. broad, glabrous and shining at the base, covered with appressed white hairs, ciliate on the margins; Leaves oblong-lanceolate, 12-25 cm. long, 17-35 mm. broad, rounded at the base into a strong petiole, scabrid in the margins.

The internode split is used as a knife-blade. The culm is used for making water jugs, wall mats, etc. Other uses are as discussed under Folk Practices "Bamboos".

Sp. Examin: S.Ch. 343

Terminalia bell^eerica Roxb.

Family: Combrat^eaceae

Local Name: Awa-sung

Locality: Tuli, Longleng

Large tree, 18-24m. high; leaves alternate, 7.6-20 cm. long, petioled; upper flower of the spikes male, lower one hermaphrodite, male flower sessile, greenish yellow; fruit 12-18.7 mm. in diameter, globular, suddenly narrowed into a short stalk, smooth, covered by a close fulvous tomentum and when dried obscurely 5-angled.

Fruits-bitter, astringent, tonic, laxative, antipyretic used in piles, dropy, diarrhoea, leprosy, biliousness, dyspepsia and head-ache; when half ripe-purgative and when fully ripe astringent. Kernel-narcotic.

Sp. Examin: S.Ch. 344

Terminalia cheb^eula Ritz.

Family: Combrat^eaceae

Local Name: Awa-sung

Locality: Changki-tulibelt

A large, deciduous tree; 24-30 m. high; leaves 7.6-15.2 cm. long, ovate or elliptic, acute, petioled, flowers all hermaphrodite, sessile, dull-white or yellow; fruit 1.8-3.3 cm. ellipsoidal or obovoid from a broad base and glabrous, 5-ribbed when dry.

Fruit-astringent, laxative, alterative, used externally as a local application to chronic ulcers and wounds and as a gargle in stomatitis; finely powdered used as a dentifrice and considered

useful in carious teeth, bleeding and ulcerations of the gums.
Bark diuritic and cardiogenic.

Sp. Examin: S.Ch. 345

Terminalia myriocarpa Heurck & Muell^o - Arg.

Family: Combrat^eaceae

Local Name: Awasung

Locality: Meinkong, Waromong.

Tree, 24-30 m. high; leaves oblong or elliptic, acute, adult nearly glabrous, petiole very short; spike panicle, dense, bractioles and young ovaries villose; fruit yellow shining with two very broad wings and narrow one.

Bark is crushed and decoction is drunk as tonic for the treatments of cardiac and liver. Wood is good timber for making furnitures and constructional work.

Sp. Examin: S.Ch. 346

Thalictrum foliosum^{lo} Bl. DC.

Family: Ranunculaceae

Local Name:

Locality: Longsa 1

Glabrous stem shrub; leaves pinnately decompose; leaflets sub-orbicular, membranous, glabrous, glaucous beneath sheath uricled; flowers polygamous, on filiform pediceles, dull bluish or greenish white; Achenes few, sharply 8-ribbed.

Leaf paste is applied in sores and boils.

Sp. Examin: S.Ch. 347

Thladiantha calceolata

cordifolia (Bl.) Cogn.

Family: Cucurbitaceae

Local Name: Mei/Tuensang wa.

Locality: Hellipong, Chentang

Large climber with sulcate branches; leaves acute or acuminate, polymorphic, simple and ovate cordate to digitately tripartite, membranous, hispidous on both surfaces; Tendril simple; flowers golden yellow; fruits cylindric oblong.

Leaves and flowers are eaten as vegetable and sold in market.

Sp. Examin: S.Ch. 348

Thunbergia coccinea Wall.

Family: Thunbergiaceae

Local Name: Nulidongmoli

Locality: Meinkong, Chare.

Profusely branched climber; tuberous; leaves lanceolate, elliptic, acuminate, entire, serrate or remotely toothed, membranous, glabrous; flowers fascicled at the nodes; long, red; capsule long.

Tubers are crushed and juice extract is drunk as aphorodisiac and tonic.

Sp. Examin: S.Ch. 349

Thysanolaena maxima Roxb.

Family: Poaceae

Local Name: Atsungtong/Rangtsung

Locality: Occurs all over study area.

Herbs; culms reed-like; leaves long lanceolate; spikelets, greenish

or purplish, 2-flowered.

Roots crushed to a paste and used as an antidote. A kind of colonial termites lives inside a ball structure which occurs in the root stocks of this plant called "Ch^oma", it is used in birds and animal traps as prey. Termites are pounded mixed with rice and made into paste is used as fixative like cement in potteries, fixing various impliment handles etc. Inflorescence is made into sweeping brown. Inside the stem it appears like blood red in colour is believed to be Rangtsung's blood.

Sp. Examin: S.Ch. 350

Tinospora ⁱsenensis (Lour.) Merr.

Family: Menispermaceae

Local Name: Tsula mesukzu

Locality: Toubou, Longleng

Glabrous climbing succulent shrub; thick stem, rough in outer surface, inner part is yellow; leaves petioled, cordate, alternate; flowers axillary, terminal racemes, yellow; male flowers fascicled and female usually solitary.

Juice extract of the stem is drunk to stomachic, aphrodisiac; paste of the plant is applied to burns and bone fracture and sprains.

Sp. Examin: S.Ch. 351

Toddalia asiatica (Linn.) Lamk

Family: Rutaceae

Local Name: Waza Chemben

Locality: Changki

Large prickly climbing shrubs; bark brown; leaves oblanceolate, obovate-ellipsoid, crenate, glabrous; flowers whitish yellow; Berry, globose, obtusely lobed; single seed in each cell.

Fruits are eaten, Roots are crushed and the juice is used as yellow dye.

Sp. Examin: S.Ch. 352

***Trichosanthes multiloba* Mig**

Family: Cucurbitaceae

Local Name: Susang mapu

Locality : Meinkong, Longchang

A climber; tendrils 2-3 fid; leaves 5 lobed, glabrous or scabrous with bristly hairs, subcordate, lobes toothed; flowers dioecious, male flowers peduncled, pairs, bracts deeply toothed; fruits bright red with orange stripes, ovoid or oblong, acute; seeds angular on the margin.

Same as *T. palmata*.

Sp. Examin: S.Ch 353

***Trichosanthes palmata* Roxb.**

Family : cucurbitaceae

Local Name : Susang mapu

Locality : Chungtia, Mekeli

A climber, stem woody below, with pale grey bark, spotted with rows of circular lenticels; Tendrils 3, often 2-fid, upto fork; Leaves palmately 5-7 lobed, 3 nerved outer, forked close to the base; Lobes acuminate or acute, lower surface paler and with cystoliths on the nerves when dry; Flowers dioecious, male flowers

in elongate racemes, solitary, female flowers on short peduncles; Fruits ellipsoid or globose, red-deep red; Seeds numerous in dark greyish green pulp.

Tubers are made into paste and applied to bone fracture and sprains.

Sp. Examin: S.Ch. 354

Urena lobata Linn.

Family:Malvaceae

Local Name:

Locality:All over study area.

Erect under shrub; thick bark, dark brown, leaves variable, lanceolate to ovate or rhomboid, nerves prominent beneath; flowers pink, fruits globose, tetragonous.

Flowers are pasted and applied to burns, pimples, boils and in soars. Bark is used to make rope. Root paste is applied to snake bite.

Sp. Examin: S.Ch. 355

Urtica parviflora Roxb.

Family:Urticaceae

Local Name:Temlongtsu

Locality:All over study area.

Slender perennial herb; branches angled; leaves variable, ovate-cordate, acuminate, doubly crenate or serrate, membranous, covered with copious stiff stinging hairs; flowers monocious, erect terminal panicle; male and fruiting sepals hispid.

Paste of the leaves mixed with the drops (~~excreta~~) of rats and some singed hairs of the dog is applied to cure dog bites. Young tender leaves are eaten as vegetable and it is considered as sex stimulant.

Sp. Examin: S.Ch. 356

Vernonia scandens DC.

Family: Asteraceae

Local Name: Mesakra moli

Locality: Noklak, Longleng

Scandent woody shrubs; leaves elliptic to ovate-lanceolate, acute, base cuneate; Head in leafy panicles; flowers white.

Leave paste is applied to skin diseases.

Sp. Examin: S.Ch. 357

Vinca rosea Linn.

Catharanthus roseus G. Don

Family: Apocyanaceae

Local Name: Tsuinri naro

Locality: Changki

Evergreen under shrub; leaves long, ovate, glossy; flowers white rose.

Milky leave juice is applied to skin diseases. Wasp sting; extract root juice is drunk to stomach-ache.

Sp. Examin: S.Ch. 358

Viscum articulatum Burm.

Family: Loranthaceae

Local Name: Teretzanglubawa

Locality: Longkhum, Chentang

A pale green much branched parasite shrub; branches flattened, striate, readily disarticulating and contracted at the nodes. Leaves reduced to scales; flowers minute, sessile in clusters of 1-6 at the nodes in connate cupular bracts; perianth segments triangular; Berry sub-globose, yellow, smooth.

Leaves and branches made into paste and is applied to set right bone fracture and sprains.

Sp. Examin: S.Ch. 359

***Wallichia densiflora* Mart.**

Family: Arecaceae

Local Name: Chiya

Locality: Changki range

Tree; trunk sheathed; leaflets oblong or linear-oblong, sinuately lobed, acutely toothed, white beneath; spathe purple; male flowers yellow, solitary; fruit 1,5 cm long, dull purple. Seeds are crushed and the paste applied to kill germs present in wounds of animals. Leaves are used for thatching houses, young fruits are eaten.

Sp. Examin: S.Ch. 360

***Wrightia tinctoria* R. Br.**

Family: Apocynaceae

Local Name: Sapanpou

Locality: Noklak, Toubou

Small deciduous tree; smooth pale brown bark; wood is white; leaves elliptic, lanceolate, acuminate, glabrous, whitish beneath; white scented flowers, cyme lax ending; calyx glandular

inside, folicle two, cylendrically hanging, jointed at tip, seeds long, comose.

Wood is excellent for wood carving; bark is pasted and applied to skin deseases, ring worms, leprosy; decoction is drunk to dysentry, cholera; seed is roasted and eaten as carminative and as laxatives.

Sp. Examin: S.Ch. 361

Wrightia tomentosa R.& S.

Family:Apocynaceae

Local Name:Show poubo

Locality:Meinkong, dongsa

Small deciduous tree; bark rough, corky, often warty; leave distichous, elliptic or elliptic-oblong; flowers white with unpleasant smell,terminal corymbose cymes; fruits follicle united.

Bark is crushed and decoction is drunk as liver tonic; apitiser, and as stimulant. Wood is also used in wood-carving.

Sp. Examin: S.Ch. 362

Xanthium strumarium Linn.

Family:Asteraceae

Local Name:

Locality:Longkhim

Herbs; leaves triangular-cordate or orbicular lobed and toothed; flowers in heads, axillary; fruit achenes.

Juice of the plant is mixed with water and drunk in case of chronic malaria.

Sp. Examin: S.Ch. 363

Zanthoxylum acanthopodium DC.

Family: Rutaceae

Local Name: Changpet

Locality: Changki

pungent, aromatic, small, armed tree; leaflets 2-6 pairs, lanceolate, secondary nerves distinct, petiole and rachis, narrowly winged; flowers axillary in terminal, cymes; fruits capsule, seeds brown black, acutely tubercled.

Leaves and fruits crushed to a paste and used as fabrifuge and poultice. Crushed leaves and fruits are washed in stream for fish poisoning. Paste of the fruits is applied to tooth-ache. Fruits are also used as condiment.

Sp. Examin: S.Ch. 364

Zanthoxylum armatum DC.

Family: Rutaceae

Local Name: Ongret

Locality: Changki range

Dense foliaged small tree with pungent aromatic taste and smell; prickles vertically on the trunk and branches; petiole glabrous, narrowly winged with two stipules, lanceolate, obtusely acuminate; flowers white; panicle loose.

Leaves are eaten as vegetable. Fruits as condiment. Leaves and

inflorescence are crushed to paste and used as poultice.

Sp. Examin: S.Ch. 365

Zanthoxylum oxyphyllum Edgew.

Family: Rutaceae

Local Name: Mongmong

Locality: Changki range, Longjang

Pungent aromatic prickled small tree; leaves imparipinnate, leaflets ovate lanceolate, acuminate, sometimes with the spines in lower surface of the vein, gland-dotted beneath; flowers white in terminal panicles.

Leaves are eaten as vegetable. Fruits as condiment. Leaves are boiled and juice is drunk as liver tonic; leaves and inflorescence is crushed to paste is ^{used} as fabrifuge and as poultice. Dried fruits are chewed in toothache (*Zanthoxylum* contains essential oil and chemical called xanthoxinen which is reported as antisickle blood. Sofowara, 1986).

Sp. Examin: S.Ch. 366

Zanthoxylum rhetsa (Roxb.) DC.

Family: Rutaceae

Local Name: Mongret

Locality: Satsukba, Changki

Large upto 30 mt. high tree; Bark corky, yellowish-brown; branches with sharp spines; leaves long, oblong-lanceolate, oblique, caudate-acuminate, glabrous, distantly crenate; flowers greenish-yellow; Ripe carpels reddish, 2-valved; seed solitary black and globose.

Fruits used as condiment, fruits and bark crushed and washed in stream for poisoning the fish. Paste of the leaves and fruits are used as fabrifuge and poultic. Wood is used in construction work.

Sp. Examin: S.Ch. 367

Zingiber officinale Rosc.

Family: Zingiberaceae

Local Name: Sungsung

Locality: Longas, Tzutsung

Perennial herbs; rhizomatous, pinkish to yellow rhizome; leaves long, lanceolate, acuminate; flowers green in pendulose spike.

Ginger is extensively used by the Nagas as medicinal, condiment and in various ceremonial and rite performances. It is used for treatment of bone fracture and sprains; expectorant, stimulant, carminatives, dyspepsia and flatulent, colic, tonic etc. It is offered to spirits during sacrifices and ceremonies. It is also used to protect from the evil spirits. It is used as vegetable, flavouring agents, and condiments.

Sp. Examin: S.Ch. 368

CHAPTER - V

1. MEDICINAL PLANTS
2. WILD EDIBLE VEGETABLES AND FRUITS
3. INDIGENOUS DOMESTIC CULTIVATED CROPS

MEDICINAL PLANTS

Introduction

From the time immemorial our ancestors were using the medicinal plants in some way or the other. Initially man looked for plants not only for food but also for curing his ailments. This was practiced and standardised through trial and error method extending over hundred and thousands of years. The use of plants for the treatment of diseases goes back to at least around 1600 B.C. In India, the earliest mention of medicinal plants is in the "Rigveda", which is one of the oldest repositories of human knowledge, having been written between 4500 and 1600 B.C., (Borthakur, 1987). Ancient work of the Indian system of medicine "Ayurveda" have developed during 2800-600 B.C.

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In the history of mankind's struggle for existence, herbal medicines have made a significant contribution. Medicines based on herbs, easily available near human habitations have been helping in the treatment of human ailments since time immemorial, particularly in our country reputation of medicinal herbs have been legendary. It is only during the last 60 years that many of us have shifted our preference to modern medicines based mainly on synthetic or chemical products. However, several factors have led to gradual loss of interest in this field. Now there is an urgent need and emphasis to undertake studies on traditional systems of herbal medicines.

- (1) There is growing belief all over the world now that herbal medicines are more efficient and without adverse side-effects.
- (2) During past few decades there has been a revival of scientific and consumer interests in herbal medicines.
- (3) To achieve the goal of world health care by 2000 A.D. there is a great need of taking up research programme to study traditional medicine system of tribal societies who rely heavily on herbal medicines.
- (4) Current interest in broad based and inexpensive health care is prompting ethnobotanical studies.

Due to this growing realisation of the fact that medicines based on natural products received by human and animal systems are more efficient and without adverse side-effects, there is now much renewed interest in herbal medicines in the whole world today. The people at large have realised the fact that even a very simple looking formula for household remedy might have a potential of becoming a very important item for curing hitherto uncurable diseases. Modern researches have brought to light astonishing healing properties of plants used by ancient people. Almost all the badly wanted medicinal herbs of today, which are utilized in the modern system of medicine i.e. allopathy, were known to ancient people thousands of years hence. I recall having read a report that the principle of the wonder drug "Penicillin" was known in crude manner to some ancient people. They made a hole in a fresh coconut and kept it open for some days. They then closed the hole and buried the coconut in the ground. After several months they took out the coconut and used

the coconut fluid for washing sores and wounds. It was later found out that it is during the process of making hole in the coconut that some fungal spores from the environment got into the coconut. The coconut fluid served as a good growing medium favouring profuse growth of the fungus and perhaps caused rotting of the endocarp resulting in the production of certain antibacterial or germicidal principles in the fluid, which when applied resulted in the healing of wounds. Similarly, a plant of grape family, commonly called "Hadjori", which was reported by the tribals to cure broken bones has been proved by recent researches to possess bone fracture healing properties.

The WHO (World Health Organisation) is now showing great interest in compiling and improving knowledge about traditional herbal medicines throughout the world. Already, the authorities of the WHO have discussed and chalked out a programme for systematic studies, use and popularization of traditional medicines. In comparatively poorer countries and particularly those areas of the world that are dominated by agricultural and rural populations and are also bestowed with rich natural flora, the use of herbal medicine has great potential.

Nagaland, one of the hill states of North East region, is inhabited by several tribes like Angami, Ao, Chakesang, Chang, Konyak, Khiamungan, Lotha, Rengma, Phom, Sema, Sangtam, Yimchunger, Zeliang, Kuki and Puchory, who have a rich folklore of herbal medicines. Forests surrounding the villages are an integral part of their culture and most of the villages have a person familiar with the herbal medicines. The informations are

passed from generation to generation only through oral folklores. But there has been no systematic attempt to study the traditional herbal medicines practised by these people. Moreover, due to population pressure, developmental activities and weakening in their old traditional culture, the natural vegetation is under great stress. If these informations are not recorded at an early date a lot of herbal plants and informations may be lost for ever.

Therefore, considering the importance of the subject when many informations have already been forgotten, there is an urgent need to record all informations on traditional medicines. The following is an attempt in this direction to record informations about the plants used for medicinal purposes by the indigenous Naga tribes of Mokokchung and Tuensang district of Nagaland. Plants dealt in this Chapter have been described in Chapter IV along with all the taxon dealt with for vegetable, fruits, folk practices and so on. Therefore, in this Chapter list of plants with species, local name and families are given here. These are arranged alphabetically.

PLATE-12



Above : *Panax ginseng* in fruit.

Below : Ginseng tubers.

PLATE-13



Above : *Mallotus phillipensis*.

Below : Medicinal plant - *Hydnocarpus kurzii*.

PLATE-14



Above : *Bauhinia purpurea* .

Below : *Athatoda vasica* .

PLATE-15



Above : A rare medicinal orchid (*Bulbophyllum rothschildianum*).

Below : Medicinal orchid: Blue Vanda (*Vanda coerulea*)

PLATE-17



Above : *Litsea citrata* - medicinal plant.

Below : *Laportea terminalis* - medicinal plant.



Above : Left : *Paederia foetida*
 Right: *Trichosanthes multiloba*

Below : Corm and leaves, of *Trichosanthes palmata*.

How this table is
useful? It is just
the list already
enumerated.

Species Name (Local Name)	Family Name
<i>Acacia p^einnata</i> (Linn.) Willd. (Chakrang-aing)	Fabaceae
<i>Acanthopanax ginseng</i> C.A. Meyer (Tzudirmoli)	Araliaceae
<i>Achyranth^eus aspera</i> Linn. (Masu-rua)	Amaranthaceae
<i>Aconitum f^lalfour^l</i> Stapf. (Meri-mezem)	Ranunculaceae
<i>Aconitum palmatum</i> D. Don (Meri-mezem)	Ranunculaceae
<i>Aconitum spicatum</i> Stapf/ (Meri-mezem)	Ranunculaceae
<i>Acorus calamus</i> Linn. (Burma-ami)	Araceae
<i>Acorus gramin^eus</i> Soland. (Burma-ami)	Araceae
<i>Actephila excelsa</i> (Dalz) Muell [Merphi, (Arunachalis)]	Euphorbiaceae
<i>Adhatoda v^easica</i> Nees <i>name change</i> (Kicharang naro)	Acanthaceae
<i>Aegle marmelos</i> Corr. (Mongmong-mesuk)	Rutaceae
<i>Ageratum conyzoides</i> Linn. (Imchenriza)	Asteraceae.
<i>Albizia lebbek</i> Benth. (Meritsu sung)	Fabaceae
<i>Albizia o^ederatissimma</i> Benth. (Mokoktalula)	Fabaceae
<i>Albizia procera</i> Benth. (Sapanpai)	Fabaceae
<i>Allium ampeloprasum</i> Linn. (Sangtam lasung)	Liliaceae

<i>Allium porrum</i> Linn. (Repjee/Leek)	Liliaceae
<i>Alnus nepalenses</i> D. Don, (Entsung tong) (Alder tree)	Betulaceae
<i>Aloe barbadensis</i> Mill. (Indian Aloe)	Liliaceae
<i>Alstonia scholaris</i> (L.) R. Br. (La zarongpang)	Apocynaceae
<i>Alternanthera sessilis</i> (Linn.) DC.	Amaranthaceae
<i>Amomum subulatum</i> Roxb. (Melangosu)	Zingiberaceae
<i>Amphineuron apulentum</i> (Kaulf) Holtum (Ma-a-chai)	Thelypteridaceae
<i>Ananas comosus</i> Merrill (Jeru)	Bromeliaceae
<i>Andrographis paniculata</i> Nees	Acanthaceae
<i>Anisomeles indica</i> (Linn.) O. Ktze. (Azu-talula)	Lamiaceae
<i>Anona squamosa</i> Linn. (Shingo polong)	Anonaceae
<i>Aquilaria agallocha</i> Roset Roxb. (Sungza/Akurr)	Thymelaeaceae
<i>Areca catechu</i> Linn. (Kozu)	Arecaceae
<i>Areca nagensis</i> Griff. (Aor-kozu)	Arecaceae
<i>Argyreia speciosa</i> Sweet	Convolvulaceae
<i>Artemisia nilagirica</i> (Cl.) camp. (Antsuksuba)	Asteraceae
<i>Artocarpus lakoocha</i> Roxb. (Salitong / Sungkuptong)	Moraceae
<i>Asparagus officinalis</i> Linn. (Asangshi)	Asparagaceae
<i>Asparagus racemosus</i> Willd. (Asparagus)	Asparagaceae
<i>Baliospermum montanum</i> (Willd) Muell-Arg.	Euphorbiaceae

(Tsumar mozu)

Bauhinia purpurea Linn.
(Noksangsubeen)

Bauhinia variegata Linn.
(Noksangtruben)

Begonia flaviflora Hara
(Kokralik)

Begonia palmata D. Don
(Kokralik)

Begonia picta Sm.
(Kokralik)

Begonia rubrovenia Hk.
(Kokralik)

Beilschmeidia roxburgiana Nees
(Arentong)

Benincasa hispida (Tumb.) Cong.
(Maosu/Mapu-temesung)

Berberis aristata DC.
(Ayak-tepa-aing)

Berberis lycium Royle
(Ayak-tepa-aing)

Berberis vulgaris Linn.
(Ayak-tepa-aing)

Berberis wallichiana DC.
(Meri-Ayaktepa-aing)

Bergenia ciliata (How) sternb.
(Longpak-wa)

Betula utilis Don
(Entsung/ongpangselem)

Betula alnoides Buch.-Ham.
(Entsung/Ongpangselum)

Boehmeria macrophylla D. Don
(Aoklachii)

Boerhavia diffusa Linn.

Bombax ceiba Linn.
(Azuben)

^a
~~Ces~~albenaceae

(Ces)albenaceae

Begoniaceae

Begoniaceae

Begoniaceae

Begoniaceae

Lauraceae

Cucurbitaceae

Berberidaceae

Berberidaceae

Berberidaceae

Berberidaceae

Saxifragaceae

Betulaceae

Betulaceae

Urticaceae

Nyctaginaceae

Bombacaceae

<i>Borreria hispida</i> K.Schum. (Sunumra)	Rubiaceae
<i>Brassaiopsis glomerulata</i> Bl. (Regd.) (Manen mozu)	Araliaceae
<i>Brugmansia shaveolens</i> (H.B.K.) Bercht & Prest (Mezemnaro)	Solanaceae
<i>Brunella vulgaris</i> Linn. (Anga-mejep)	Lamiaceae
<i>Bryophyllum spathulata</i> - Salisb. (Nokchamoli)	Crassulaceae
<i>Bryopsis laciniosa</i> (Linn.) Naud (Warojakshi)	Cucurbitaceae
<i>Buddleja asiatica</i> Lour.	Loganiaceae
<i>Bulbophyllum ornatissimum</i> (Rchb.f.) J.J. Sm.	Orchidaceae
<i>Bulbophyllum rothschildianum</i> (O'Brien) J.J. Sm. (Churong naro)	Orchidaceae
<i>Butea minor</i> Ham.	Fabaceae
<i>Butea monosperma</i> (Lam.) Kuntze (Tsupak naro)	Fabaceae
<i>Callicarpa arborea</i> Roxb. (Kachet)	Verbenaceae
<i>Callicarpa vestita</i> wall. (Kachet taluba) =	Verbenaceae
<i>Calotropis gigenatea</i> Br. (Nokarimoli) ^{R.}	Asclepiadaceae
<i>Capsicum annuum</i> Linn. (Mersu)	Solanaceae
<i>Carica papaya</i> Linn. (Mamazu)	Caricaceae
<i>Cassia fistula</i> Linn. (Drum stick)	Fabaceae
<i>Centella asiatica</i> (L.) Urb. (Imsenkorokla)	Apiacea
<i>Cessampelos pareira</i> Linn. (Tsungrenpangmoli)	Minispermaceae

<i>Chaerophyllum reflexum</i> Lindl. (Mezen Pangpanglan)	Umbelliferaea
<i>Chaerophyllum villosum</i> wall. ex DC. (Mezen Pangpanglan terala)	Umbelliferae
<i>Chenopodium ambrosoides</i> Linn. (Antzukmoli)	Chenopodiaceae
<i>Chloranthus brachystachys</i> Bl. (Ongchinaro)	Chloranthaceae
<i>Cinnamomum cecidodaphne</i> Meissn. (Sungshi tulula)	Lauraceae
<i>Cinnamomum obtusifolium</i> Nees (Sungshi talu)	Lauraceae
<i>Cinnamomum tamala</i> Nees and Ebern (Sungshi mashila)	Lauraceae
<i>Cinnamomum zeylamicum</i> Blume (Sungshi)	Lauraceae
<i>Clerodendrum serratum</i> Spring. (Antsuk suba orema)	Verbenaceae
<i>Clerodendrum bracteatum</i> Wall. (Astuksuba)	Verbenaceae
<i>Clerodendrum colebrookianum</i> Walp. (Umrem)	Verbenaceae
<i>Clerodendrum villosum</i> Bl. (Akawa)	Verbenaceae
<i>Coccinia indica</i> W & A (Koktsulijang)	Cucurbitaceae
<i>Coelogyne longipes</i> Lindl.	Orchidaceae
<i>Coelogyne nitida</i> (Wall. ex Don) Lindl.	Orchidaceae
<i>Coelogyne cristata</i> Lindl. (Mezen anakmoli)	Orchidaceae
<i>Coix lachryma-jobi</i> Linn. (Menjang)	Poaceae
<i>Commelina bengalensis</i> Linn.	Commelinaceae
<i>Cordia clarkei</i> Bruce. [Chenu (Angami)]	Boraginaceae
<i>Costus speciosus</i> (Koen. ex Retz.) Smith (Alar naro)	Costaceae

<i>Croton caudatus</i> Geisel. (Chawaza)	Euphorbiaceae
<i>Croton roxburghii</i> Balakr. (Chawatong)	Euphorbiaceae
<i>Cucumis melo</i> Linn. (Apang matsu)	Cucurbitaceae
<i>Cucumis sativa</i> Linn. (Zungi)	Cucurbitaceae
<i>Curculigo capitulata</i> (Lour) O.Ktze. (Koritong)	Hypoxidaceae
<i>Curculigo orchiodes</i> Gaertn. (Koritong)	Hypoxidaceae
<i>Curcuma aromatica</i> Salisb. (Pangsalaphi)	Zingiberaceae
<i>Curcuma longa</i> Linn. (Haldi)	Zingiberaceae
<i>Curcuma zedoaria</i> Roseh (Pangsalaphi)	Zingiberaceae
<i>Cyclea peltata</i> Hk.f. and Th. (Tsongrempang moli)	Menispermaceae
<i>Cymbopogon citratus</i> (DC.) Stapf (Lemon Grass)	Gramineae (Poaceae)
<i>Cyperus rotundus</i> Linn. (Tarangpa aie)	Cyperaceae
<i>Dendrobium heterocarpum</i> Wall.ex Lindl. (Akong tatsuba)	Orchidaceae
<i>Didymosperma nana</i> Wendlet/Drude. (Chiya)	Arecaceae
<i>Diospyros lanceifolia</i> Linn. (Ruja)	Ebenaceae
<i>Diplazium polypodioides</i> Vam (Kongchang)	Thelypteridaceae
<i>Drimycarpus racomposus</i> Hk.f. (Kangri)	Anacardiaceae
<i>Eclipta alba</i> (L.) Hassk. (Ongpang ejokza)	Asteraceae

<i>Elatostema connatum</i> Wedol. (Changpangchempa)	Urticaceae
<i>Elephantopus scaber</i> Linn. (Powa-wa)	Asteraceae
<i>Engelhardtia spicata</i> Blume (Akhu-Taluba)	Juglandaceae
<i>Entada pursaetha</i> DC. (Shizung)	Fabaceae
<i>Erythrina arborescens</i> Roxb. (Tsuben/Mangotsurong)	Fabaceae
<i>Erythrina stricta</i> Roxb. (Tsuben/Mangotsurong)	Fabaceae
<i>Eugenia jambolana</i> Lam. (Longchen)	Myrtaceae
<i>Eupatorium adenophorum</i> Linn. (Yimsenza)	Asteraceae
<i>Eupatorium odoratum</i> Linn. (Tsulaphoba)	Asteraceae
<i>Eurya acuminata</i> DC. (Alumeset)	Theaceae
<i>Ficus bengalensis</i> Linn. (Akutong)	Moraceae
<i>Ficus racemosa</i> Linn. (Merir aku)	Moraceae
<i>Ficus virens</i> Ait. Hort. (Wazanisa)	Moraceae
<i>Flemingia macrophylla</i> (wild) Kuntaze ex. P. (Waza Chami)	Fabaceae
<i>Floscopa scandens</i> Lour. (Misetza)	Commelinaceae
<i>Foeniculum vulgare</i> Mill. (Wazachak)	Umbelliferae (Apiaceae)
<i>Fritillaria cirrhosa</i> D. Don (Mein labonaro)	Liliaceae
<i>Gaultheria fragrantissima</i> Wall. (Anga-jang)	Ericaceae

<i>Girardinia heterophylla</i> , Decne (Merizaklu)	Urticaceae
<i>Gmelina arborea</i> Linn. (An-cha)	Verbenaceae
<i>Gnaphalium luteo-album</i> Linn.	Asteraceae
<i>Gomphostemma lucidum</i> Wall. (Arem napa)	Lamiaceae
<i>Gonatanthus ornatus</i> Schott/ (Kozalongri)	Araceae
<i>Gonathanthus pumilus</i> (D.Don) Engl & Krause (Kozalongri)	Araceae
<i>Hedychium coronarium</i> Koenig. (Kimonger naro)	Zingiberaceae
<i>Hedychium spicatum</i> Buch-Ham. (Kimonger narotemerem)	Zingiberaceae
<i>Hedyotis corymbosa</i> (Linn.) Lam.	Rubiaceae
<i>Hedyotis scandens</i> Roxb.	Rubiaceae
<i>Herpetospermum pedunculatum</i> Baill. (Arem poka/jue)	Cucurbitaceae
<i>Hibiscus pungens</i> Roxb. (Meribend)	Malvaceae
<i>Hibiscus sabdariffa</i> Linn. (Sentrurep)	Malvaceae
<i>Holarrhena antidysentrica</i> Wall. (Ho-Pai)	Apocynaceae
<i>Houttuynia cordata</i> Thumb. (Alimoli/Mokma)	Saururaceae
<i>Hydnocarpus kurzii</i> (king) Warb. (Imsungjang) (Chalmugra-Bengali)	Flacourtiaceae
<i>Hydrocodyle javanica</i> Thumb. (Tsula-polong)	Apiaceae
<i>Hypericum japonicum</i> Thumb. (Ao Chani)	Hypericaceae
<i>Hypericum montanum</i> Hk.f. & Th. (Ao Chani/Chitango)	Hypericaceae
<i>Ichnocarpus frutescens</i> (Linn) R. Br.	Apocynaceae

<i>Imperata cylindrica</i> Beauv. (Azu)	Poaceae
<i>Indigofera tinctoria</i> Linn. (Tzumar-osak)	^a F obaceae
<i>Ipomoea nil</i> (Linn.) Roth. (Angura moli)	Convolvulaceae
<i>Jatropha curcas</i> Linn. (Tzulu mezem jang)	Euphorbiaceae
<i>Juglans regia</i> Linn. (Akhuchang)	Juglandaceae
<i>Lantana aculeata</i> Linn. (Yemra naro)	Verbenaceae
<i>Laportia terminales</i> Wight (Ongpang mezenzaklu)	Urticaceae
<i>Lasia spinosa</i> (Linn) Thw. (Turang/Churang)	Araceae
<i>Leea robusta</i> Roxb.)	Vitaceae
<i>Leucas zeylanica</i> Br. (Kolimi moli)	Lamiaceae
<i>Leucosceptrum canum</i> Sm. (Anuzamechepa)	Lamiaceae
<i>Litsea citrata</i> Bl. (Entzurem)	Lauraceae
<i>Litsea lancifolia</i> Hook.f. (Entsurem)	Hx f. ? Lauraceae
<i>Litsea monopetala</i> Roxb. (Entsurem)	Lauraceae
<i>Lycopodium cernuum</i> Linn. (Mangrang naro)	^u Lycopodiaceae
<i>Mahonia nepalensis</i> DC. (Meri-mezen-aing)	^c Berberidaceae
<i>Mallotus philippensis</i> Muel Arg. (Surumjang)	^{1.-} Euphorbiaceae
<i>Melastoma malabathricum</i> Linn. (Zukyim)	Melastomaceae
<i>Mesua ferrea</i> Linn. (Mangi) (Ironwood)	Clusiaceae

<i>Mikania micrantha</i> H.B.K. (Japanza)	Asteraceae
<i>Milletia auriculata</i> Baker ex Brand. (Alingnengba)	Fabaceae
<i>Mimosa pudica</i> Linn. (Mayakza)	Mimosaceae
<i>Moringa oleifera</i> Linn. (Drum stick)	Moringaceae
<i>Morus alba</i> Linn. (Mulberry)	Moraceae
<i>Mukia noderaspatana</i> (L.) Roemer (Tephamoli)	cucurbitaceae
<i>Mussaenda frondosa</i> Linn. (Sapaklarinaro)	Rubiaceae
<i>Mussaenda macrophylla</i> Wall. (Sapaklarinaro)	Rubiaceae
<i>Mussaenda roxburghii</i> Hk.f. (Noksangtsuben)	rubiceae
<i>Myrica esculanta</i> Buch.-Ham. ex. D. Don (Achensu)	Myricaceae
<i>Nicotiana tabacum</i> Linn. (Moko)	Solanaceae
<i>Panax ginseng</i> C.A. Meyer (Tsudirmozu)	Araliaceae
<i>Panax psuedo-ginseng</i> Wall. (Takumtsu mozu)	Araliaceae
<i>Perilla ocimoides</i> Linn. (Napa)	Lamiaceae
<i>Pinus kesyia</i> Royle ex Gord. (Mitsukbasung)	Pinaceae
<i>Piper betle</i> Linn. (Patio)	Piperaceae
<i>Plantago major</i> Linn. (Jangremriza/Akaba)	Plantaginaceae
<i>Pyris ovalifolia</i> D.Don (Meimtung)	Ericaceae

<i>Rheum Emodi</i> Wall. (Tenemza)	Polygonaceae
<i>Rhododendron arboreum</i> Sm. (Metzuben)	Ericaceae
<i>Rhus javanica</i> Linn. (Tangpu)	Anacardiaceae
<i>Rhus simialata</i> Murr. (Tangpu)	Anacardiaceae
<i>Ricinus communis</i> Linn. (Phakowa)	Euphorbiaceae
<i>Roscoea alpina</i> Royle (Rejeb naro)	Zingiberaceae
<i>Rubia cordifolia</i> Linn. (Ayunumetsubamoli)	Rubiaceae
<i>Rubia sikkimensis</i> Kurz (Awali/Wailuk)	Rubiaceae
<i>Rubus ellipticus</i> Sm. (Chembensu)	Rosaceae
<i>Rubus moluccanus</i> Linn. (Chembensu)	Rosaceae
<i>Rumex nepalensis</i> Spreng	Polygonaceae
<i>Saccharum officinarum</i> Linn. (Mochi)	Poaceae
<i>Saccharum spontaneum</i> Linn. (Pakten)	Poaceae
<i>Sapindus mucorossi</i> Wendl. (Sangsu tong)	Sapindaceae
<i>Sapindus trifoliatus</i> Linn. (Sangsu tong)	Sapindaceae
<i>Schima khasiana</i> Dyer (Meri-Mesang)	Ternstroemiaceae
<i>Schima wallichii</i> , Choisy (Mesang)	Ternstroemiaceae
<i>Scutellaria glandulosa</i> Coleb. (Arem-napa)	Lamiaceae
<i>Scutellaria rivularis</i> Wall. (Angamejep Talula)	Lamiaceae

<i>Semicarpous anacardium</i> Linn.f. (Arentong)	Anacardiaceae
<i>Senecio cappa</i> D. Don (Mesakraza)	Asteraceae
<i>Sesamum orientale</i> Linn. (Pingnak)	Pedaliaceae
<i>Silvianthus bracteatus</i> Hk.f. (Peningwa)	Carlemanniaceae
<i>Skimmia laureola</i> (DC.) Hk.f.	Rutaceae
<i>Smilax aspera</i> Linn. (Aoksubaza)	Smilacaceae
<i>Smilax lanceaefolia</i> Roxb. (Aoksubaza)	Smilacaceae
<i>Smilax macrophylla</i> Roxb. (Aoksubaza)	Smilacaceae
<i>Solanum khasianum</i> Clarke. (Akho longkok)	Solanaceae
<i>Solanum kurzii</i> Brace (Anlongkok)	Solanaceae
<i>Solanum nigrum</i> Linn. (Kumbowa tazakla)	Solanaceae
<i>Solena heterophylla</i> Lour. (Khotsu nokjang)	Cucurbitaceae
<i>Solanum spirale</i> Roxb. (Kumbo-wa)	Solanaceae
<i>Sonchus arvensis</i> Linn. (Napong jeebi)	Asteraceae
<i>Sonchus asper</i> Vill (Yei-tong)	Asteraceae
<i>Stephania glandulifera</i> Miers (Ketcha moli)	Minispermaceae
<i>Stephania hernandifolia</i> Walp (Mezurong-moli)	Minispermaceae
<i>Steriospermum chelonoedes</i> DC. (Mesusung)	Bignoniaceae
<i>Swertia chirayita</i> (Roxb.) Karst. (Aluenjangnaro)	Gentianaceae

<i>Symplocos grandiflora</i> Wall. (Surumba)	Symplocaceae
<i>Tagetes Indicus</i> Lindl. (Kitsung naro)	Asteraceae
<i>Terminalia bellerica</i> Roxb. (Awa-sung)	Combrataceae
<i>Terminalia chebula</i> Ritz. (Awa-sung)	Combrataceae
<i>Terminalia myricocarpa</i> Heurck & Muell. Arg. (Awasung)	Combrataceae
<i>Thalictrum foliosum</i> , Bl.	Ranunculaceae
<i>Thunbergia coccinea</i> Wall. (Nulidongmoli)	<u>Thunbergiaceae</u>
<i>Thysanolaena maxima</i> Roxb. (Atsungtong/Rangtsung)	Poaceae
<i>Tinospora senensis</i> (Lour.) Merr. (Tsula mesukzu)	Menispermaceae
<i>Toddalia asiatica</i> (Linn.) Lamk (Waza Chemben)	Rutaceae
<i>Urena lobata</i> Linn.	Malvaceae
<i>Urtica parviflora</i> Roxb. (Temlongtsu)	Urticaceae
<i>Vinca rosia</i> Linn. (Tsuinri naro)	Apocyanaceae
<i>Viscum articulatum</i> Burm. (TeretzangIubawa)	Loranthaceae
<i>Wallichia densiflora</i> Mart. (Chiya)	Arecaceae
<i>Wrightia tinctoria</i> R. Br. (Sapanpou)	Apocynaceae
<i>Wrightia tomentosa</i> R. & S. (Show poubo)	Apocynaceae
<i>Xanthium strumarium</i> Linn.	Asteraceae
<i>Zanthoxylum acanthopodium</i> DC. (Changpet)	Rutaceae

<i>Zanthoxylum armatum</i> DC. (Ongret)	Rutaceae
<i>Zanthoxylum oxyphyllum</i> Edgew. (Mongmong)	Rutaceae
<i>Zanthoxylum rhetsa</i> (Roxb.) DC. (Mongret)	Rutaceae
<i>Zingiber officinale</i> Rosc. (Sungsung)	Zingiberaceae

Wild Edible Vegetable and Fruits

It is known that our ancestors were mainly dependent upon the plants for shelter, food, medicines etc. Their knowledge is recorded in the literature and till upto date human and society is still dependent upon the plants. In general the tribals mostly depends upon their surrounding forests and vegetation and so also the Nagas. This can be mentioned here that "The Nagas give very little attention to the cultivation of fruits but nature, as if to show the people luscious possibilities in this line, has bestowed a liberal variety of the wild fruits in the jungle such as mangoes, oranges, limes, bananas, fig, crab apple, cherries, raspberries, strawberries and others" (M.M. Clark 1907 Corner in India).

The list of wild edible vegetables and fruits are given below:

Vegetable

Species Name (Local Name)	Family Name
<i>Acanthopanax ginseng</i> C.A. Meyer (Tzudirmoli)	Araliaceae

<i>Acorus calamus</i> Linn. (Burma-ami)	Araceae
<i>Acorus graminus</i> Soland. (Burma-ami)	Araceae
<i>Actephila excelsa</i> (Dalz.) Muell [Merphi (Arunachalis)]	Euphorbiaceae
<i>Allium ampeloprasum</i> Linn. (Sangtam lasung)	Liliaceae
<i>Allium porrum</i> Linn. (Repjee/Leek)	Liliaceae
<i>Amaranthus caudata</i> Linn. (Arujang/Ruwa)	Amaranthaceae
<i>Amomum subulatum</i> Roxb. (Melangosu)	Zingiberaceae
<i>Asparagus officinalis</i> Linn. (Asangshi)	Asparagaceae
<i>Asparagus racemosus</i> Willd. (Asparagus)	Asparagaceae
<i>Bambusa nutans</i> Wall. & Munro (Longmi)	Poaceae
<i>Bambusa tulda</i> Roxb. (Longmi)	Poaceae
<i>Begonia flaviflora</i> Hara (Kokralik)	Begoniaceae
<i>Begonia palmata</i> D. Don (Kokralik)	Begoniaceae
<i>Begonia picta</i> Sm. (Kokralik)	Begoniaceae
<i>Calamus floribundus</i> Griff. (Arr/Changtong)	Arecaceae
<i>Callicarpa rubella</i> Lindl. (Kachet tasula)	Verbenaceae

<i>Capsicum annuum</i> Linn. (Mersu)	Solanaceae
<i>Centella asiatica</i> (L.) Urb. (Imsenkorokla)	Apiaceae
<i>Cephalostachyum capitatum</i> Munro (Awaza)	Poaceae
<i>Chaerophyllum reflexum</i> Lindl. (Mezen Pangpanglan)	Umbelliferaea
<i>Cirsium falconeri</i> (Hook.F.) Petrak (Ai-anu naro)	Asteraceae
<i>Clerodendrum colebrookianum</i> Walp. (Umrem)	Verbenaceae
<i>Cucumis melo</i> Linn. (Apang matsu)	Cucurbitaceae
<i>Cucumis sativa</i> Linn. (Zungi)	Cucurbitaceae
<i>Curcuma angustifolia</i> Roxb. (Alar sungmok)	Zingiberaceae
<i>Curcuma aromatica</i> Salisb. (Pangsalaphi)	Zingiberaceae
<i>Curcuma longa</i> Linn. (Haldi)	Zingiberaceae
<i>Curcuma zedoaria</i> Rose (Pangsalaphi)	Zingiberaceae
<i>Dendrocalamus giganteus</i> Munro (Meri-anung)	Poaceae
<i>Dendrocalamus hamiltonii</i> Nees (et) Arn. (Azung-Ashi/Awa)	Poaceae
<i>Dendrocalamus hookeri</i> Munro (Ongpang anung)	Poaceae
<i>Dendrocalamus patellaris</i> Gamble (Awa-taluba)	Poaceae

<i>Dendrocalamus sikkimensis</i> Gamble (Anung)	Poaceae
<i>Didymosperma nana</i> Wendlet Drude. (Chiya)	Arecaceae
<i>Elatostema connutum</i> Wedol. (Changpangchempa)	Urticaceae
<i>Fagopyrum esculentum</i> Moench (Lipakwa)	Polygonaceae
<i>Ficus racemosa</i> Linn. (Merir aku)	Moraceae
<i>Gmelina arborea</i> Linn. (An-cha)	Verbenaceae
<i>Gnetum gnemon</i> Linn. (Milem-O-)	Gnetaceae
<i>Herpetospermum pedunculatum</i> Baill. (Arem poka/jue)	Cucurbitaceae
<i>Hibiscus sabdariffa</i> Linn. (Sentrurep)	Malvaceae
<i>Hibiscus suratensis</i> (Sentsurep)	Malvaceae
<i>Houttuynia cordata</i> Thunb. (Alimoli/Mokma)	Saururaceae
<i>Imperata cylindrica</i> Beauv. (Azu)	Poaceae
<i>Ipomoea batatas</i> (Linn.) Lamk. (Chamiang)	Convolvulaceae
<i>Lasia spinosa</i> (Linn) Thw. (Turang/Churang)	Araceae
<i>Manihot esculanta</i> Crantz (Alishi)	Euphorbiaceae
<i>Maranta arundinacea</i> Linn. (Aammshi/Arrow root)	Marantaceae
<i>Melocanna bambusoides</i> Trin.	Poaceae

(Zeliang-aoo)	
<i>Morus alba</i> Linn. (Mulberry)	Moraceae
<i>Musa sanguinea</i> Hk.f. (Arum mongo)	Musaceae
<i>Musa sapientum</i> , Linn. (Septsu mongo)	Musaceae
<i>Panax ginseng</i> C.A. Meyer (Tsudirmozu)	Araliaceae
<i>Passiflora edulis</i> Sims. (Entsulashi)	Passifloraceae
<i>Perilla ocimoides</i> Linn. (Napa)	Lamiaceae
<i>Plantago major</i> Linn. (Jangremriza/Akaba)	Plantaginaceae
<i>Rhaphidophora hookeri</i> Schott (Sangami)	Araceae
<i>Rhododendron arboreum</i> Sm. (Metzuben)	Ericaceae
<i>Schima Wallichii</i> Choisy (Mesang)	Ternstroemiaceae
<i>Sinobambusa elegans</i> Nakai (Meri Awaza-Tasula)	Poaceae
<i>Smilax macrophylla</i> Roxb. (Aoksubaza)	Smilacaceae
<i>Solanum kurzii</i> Brace (Anlongkok)	Solanaceae
<i>Solanum nigrum</i> Linn. (Kumbowa tazakla)	Solanaceae
<i>Solanum t/irvum</i> Swartz (Kachari /longkok)	Solanaceae

<i>Solanum spirale</i> Roxb. (Kumbo-wa)	Solanaceae
<i>Sphenoclea zeylanica</i> Gaertn. (Injukaza)	Sphenocleaceae
<i>Sterculia alata</i> Roxb. (Mezen-batam)	Sterculiaceae
<i>Sterculia coccinea</i> Roxb. (Achep batam)	Sterculiaceae
<i>Teinostachyum griffithii</i> Munro (Anii/Anna)	Poaceae
<i>Thladiantha calcerata</i> (Mei/Tuensang wa.)	Cucurbitaceae
<i>Urtica parviflora</i> Roxb. (Temlongtsu)	Urticaceae
<i>Zanthoxylum armatum</i> DC. (Ongret)	Rutaceae
<i>Zanthoxylum oxyphyllum</i> Edgew. (Mongmong)	Rutaceae
<i>Zingiber officinale</i> Rosc. (Sungsung)	Zingiberaceae

Fruits

<i>Albizia procera</i> Benth. (Sapanpai)	Fabaceae
<i>Amaranthus caudata</i> Linn. (Arujang) (Ruwa) —	Amaranthaceae
<i>Amomum subulatum</i> Roxb. (Melangosu)	Zingiberaceae
<i>Ananas Comosus</i> Merril (Jeru) 	Bromeliaceae
<i>Anona squamosa</i> Linn. (Shingo polong)	Anonaceae

<i>Areca catechu</i> Linn. (Kozu)	Arecaceae
<i>Areca nagensis</i> Griff. (Aor kozu)	Arecaceae
<i>Artocarpus lakoocha</i> Roxb. (Salitong /Sungkuptong)	Moraceae
<i>Benincasa hispida</i> (Tumb.) Cong. (Maosu/Mapu-temesung)	Cucurbitaceae
<i>Calamus floribundus</i> Griff. (Arr/Changtong)	Arecaceae
<i>Carica papaya</i> Linn. (Mamazu)	Caricaceae
<i>Caryota obtusa</i> Griff. (Mere-Asang)	Arecaceae
<i>Coccinia indica</i> W & A (Koktsulijang)	Cucurbitaceae
<i>Coix lachryma-jobi</i> Linn. (Menjang)	Poaceae
<i>Cucumis melo</i> Linn. (Apang matsu)	Cucurbitaceae
<i>Cucumis sativa</i> Linn. (Zungi)	Cucurbitaceae
<i>Cymbopogon clandestines</i> Stapf/ (Azu)	Poaceae
<i>Diospyros lanceofolia</i> Linn. (Ruja)	Ebenaceae
<i>Entada pursaetha</i> DC. (Shizung)	Fabaceae
<i>Eugenia jambolana</i> Lam. (Longchen)	Myrtaceae
<i>Fagopyrum esculentum</i> Moench (Lipakwa)	Polygonaceae
<i>Ficus cryptophylla</i> wall. ex. Mig.	Moraceae

(Poksok)

Ficus elastic^a/Roxb. Moraceae
[Nissa (Indian Rubber)]

Ficus glomerata Roxb. Moraceae
(Zero)

Ficus silhetensis Mig. Moraceae
(Kuru)

Ficus subulata Bl. Moraceae
(Kuru)

Foeniculum vulgare Mill. Umbelliferae (Apiaceae)
(Wazachak)

Garcinia cowa Roxb. Clusiaceae
(Pelamesong)

Garcinia pedunculata Roxb. Clusiaceae
(Senthola)

Garcinia xanthochymus Hk.f.ex Th. Clusiaceae
(Pelamesong)

Gnetum gnemon Linn. Gnetaceae
(Milem)

Gnetum montanum Brongn Gnetaceae
(Milem taluba)

Juglans regia Linn. Juglandaceae
(Akhuchang)

Litsea citrata Bl. Lauraceae
(Entzurem)

Litsea lancifolia Hook.f. Lauraceae
(Antsurem)

Livestonia jenkinsiana Griff. Arecaceae
(Sera)

Mangifera andamanica King Anacardiaceae
(Chechetsu)

<i>Mangifera indica</i> Linn. (Deti)	Anacardiaceae
<i>Mangifera sylvatica</i> Roxb. (Pongensu)	Anacardiaceae
<i>Melastoma malabathricum</i> Linn. (Zukyim)	Melastomaceae
<i>Melia dubia</i> Cav. (Aiek-Talo)	Meliaceae
<i>Melocanna bambusoides</i> Trin. (Zeliang-aoo)	Poaceae
<i>Musa sanguinea</i> Hk.f. (Arum mongo)	Musaceae
<i>Musa sapientum</i> Linn. (Septsu mongo)	Musaceae
<i>Myrica esculanta</i> Buch.-Ham. ex. D. Don (Achensu)	Myricaceae
<i>Passiflora edulis</i> Sims. (Entsulashi)	Passifloraceae
<i>Pinanga gracilis</i> Bl. (Changpangmetzulasu)	Arecaceae
<i>Rhus javanica</i> Linn. (Tangpu)	Anacardiaceae
<i>Rhus simialata</i> Murr. (Tangpu)	Anacardiaceae
<i>Rubus ellipticus</i> Sm. (Chembensu)	Rosaceae
<i>Rubus moluccanus</i> Linn. (Chembensu)	Rosaceae
<i>Sesamum orientale</i> Linn. (Pingnak)	Pedaliaceae
<i>Solena heterophylla</i> Lour. (Khotsu nokjang)	Cucurbitaceae

<i>Sterculia alata</i> Roxb. (Mezen-batam)	Sterculiaceae
<i>Sterculia coccinea</i> Roxb. (Acheb batam)	Sterculiaceae
<i>Sterculia versicolor</i> Wall. (Mezen batam)	Sterculiaceae
<i>Sterculia villosa</i> Roxb. (Ing pang batam)	Sterculiaceae
<i>Terminalia bellerica</i> Roxb. (Awa-sung)	Combrataceae
<i>Toddalia asiatica</i> (Linn.) Lamk (Waza Chemben)	Rutaceae
<i>Wallichia densiflora</i> Mart. (Chiya)	Arecaceae
<i>Zanthoxylum acanthopodium</i> DC. (Cangpet)	Rutaceae
<i>Zanthoxylum armatum</i> DC. Ongret	Rutaceae
<i>Zanthoxylum oxyphyllum</i> Edgew. (Mongmong)	Rutaceae
<i>Zanthoxylum rhetsa</i> (Roxb.) DC. (Ongret)	Rutaceae

Above : Wild vegetable - *Asparagus shoot*

Below : Vegetable market - *Basilicum ocimoides*
chilli bags, fermented bamboo shoot bags,



PLATE-21



Above : *Prunus nepalensis* - wild edible fruits.

Below : *Sterculia* ^{*hamiltonii*} seeds are eaten.

Above : *Ficus* sp. bearing wild edible fruits.

Below : *Ficus macrophylla* bearing wild edible fruits.



PLATE-2

PLATE-23



Above : Rubus sp. bearing wild edible fruits.

Below : Wild mango (Chechetsu) - Mangifera
andamensis.

Indigenous domestic crops cultivation

A survey of 8 (eight) tribes of Mokokchung and Tuensang Districts of Nagaland reveal the primitive agriculture practiced by these communities. The principal activity of the Naga tribes is agriculture, most of which is carried out in accordance with the Jhuming system, a form of shifting cultivation, having a simple economy, almost entirely agrarian, using very traditional techniques. Forests have been a major economic resource for the tribals in these two Districts and an important determinant of their life system. Tribals used forests and forest land in many ways, including cutting trees for a variety of purposes. But while they use forests and thereby depletes the stock of this resource, they have developed no means of their own to replenish the stock. Over the years, therefore, the rate of natural regeneration of forests has fallen behind the rate of their depletion and the stock of forests resources has steadily desminished; in some areas more rapidly than the others. This can be observed specially in Mokokchung district. Consequential degradation of the environment with detrimental effects on the quality of land. This trend must be halted.

The principal crop of these two districts are varieties of rice, millet, yams, taru, tobacco, ginger, chillies, petel, varieties of beans, tapioca, and ^Towroots, maize, betel leaves, varieties of pepoes, cucumbers, amaranthus, mustard leaves, and many other green vegetables. The following are some of the crops listed below:

The Secondary Stable Crops

Species Name	Family Name	Local Name
Coix lachryma-jobi Linn.	Poaceae	Menjang
Setaria italica Linn.	"	Chenjang
Pennisetum typhoidum (Burm.f) STAN & C.E. HUBB.	"	Chenjang tamla
Zea maize Linn.	"	Menti
Marantha arundinacea Linn.	Maranthaceae	Amshi
Manihot esculenta Grantz.	Euphorbiaceae	Alishi
Dioscorea alata Linn.	Dioscoreaceae	Alushi-talang
Dioscorea esculenta (Lower) Burkiell	Dioscoreaceae	Tsumar shi
Dioscorea rotundata Poir.	"	Moulocha
Dioscorea cayenensis Lamk.	"	Asurycha
Dioscorea opposita 1.	"	Shi/Acha
Dioscorea deltoides wall	"	Shi/Acha
Dioscorea bulbifera Linn.	"	Moyaricha
Dioscorea villosa Linn.	"	Acha tenenla
Ipomoea batatas (L) Poir	Convolvulaceae	Chamiang
Colocasia antiquorum Linn	Araceae	Manu
Colocasia esculenta Linn	"	Moyar manu
Alocasia macrorrhiza Linn.	"	Tsumar manu
Xanthosoma atrovergens Koch & Boece	"	"
Xanthosoma caracu Koch & Bouche	"	Manu tulo talang
Xanthosoma nigrum (Vell) Mans	"	Manu tulo

Other Vegetables, Condiments and Medicinal

Helianthus <u>anneus</u> Linn	Asteraceae	Anunaro
Allium <u>Sativa</u> Linn.	<u>Libaceae</u>	Sangtam lasung
Allium cepa Linn.	"	Piazu
Allium fistulosum Linn.	"	Alu lasung
Allium porrum Linn.	"	Repjee
Allium ampeloprasum Linn.	"	Sangtam lasung
Allium tuberosum Linn.	"	Repjee
Allium schoenoprasum Linn.	"	Alu lasung
Saccharum officinarum Linn.	Poaceae	Mochi
Hibiscus ^a surathensis Linn.	Malvaceae	Sentsurup
Hibiscus ^t subdariffa Linn.	"	"
Abelmoschus esculantus (Linn) Moench.	"	Bendi
Amaranthus gangeticus Linn.	Amarenthaceae	Rua
Amaranthus tricolor Linn.	"	"
Curcuma longa Linn.	Zingeberaceae	Haldi
Curcuma anthorhiza Roxb.	"	Arem haldi
Zingeber officinales <u>Rosc.</u>	"	Sungsung
Ocimum gratissimum Linn.	<u>Labeateae</u>	Merinangpera
Ocimum carrum Sims	"	Nangpera
Ocimum basilicum Linn.	"	"
Mentha arvensis Linn.	"	Puthina
Brassica <u>cheninsis</u> Linn.	Brassicaceae	Chebi
Brassica arvensis Linn.	"	"
<u>Peskinensis junceae</u>	"	"

Rice is the most important crops of the tribals of these two districts. Earlier rice was cultivated by the Ao ,Sangtam, Phom only and the other tribes Chang, Yimchunger, Khiamungan, Konyaks and Semas, their main crops were jobs-tears, Sorgham, Millet, Maize and Amaranthus. Secondary staple crops of the people are Manihot, Marantha, Colocacia, Dioscoria, Ipomia, Xanthosma, Alocasia etc. The various indegenous vegetables, fruits, medicinal plants and flowers etc. are cultivated in the jhum fields and kitchen gardens. Following rice varieties are cultivated in the both districts.

Botlong, Lyngsi, Pownbhuh,
Merikrat, Asienkel, Bangnapdai.

Higher yield in rainfall
and upland

Ngoba, Chao, Phoonlen, Tura-13,
Ngoba, Chanmocer, Kangpui.

Higher yield in low land
earliness

Ngoba, Kanchalmang,
Pownbhuh, Addy.

Dwarf and drought tolerance

Pownbhuh, Ngoba, Pangnakla,
Manen, Khonorerllo

Cold tolerance at flowering
phase/diffused light

Pangnakla, Ngoba,
Khonorullo, Reyllored, Aborred-B.

Tolerance to Iron Toxicity
Non-lodging tall plant

Changhoesam, Malang, Chonju, Ngoba.

Glutinous

Moyatsuk, Horipuri, Malang.

Scented

Nutritional value analysis of legumes

Some of the common legumes used as food by the tribals has been analyzed through the Atomic Absorption Spectroscopy (AAS) and Jeldahl's method as given below.

Sample Preparation for estimation of Calcium, Iron and lead with Atomic Absorption Spectroscopy (AAS)

Known weight of the air dried powder sample were taken and digested with Con.HNO_3 and perchloric acid (6:1). Then the solutions were evaporated to dryness. The residue was dissolved in dil. HNO_3 and filtered. Finally, the total value was made to 20 ml with triple distilled water. These samples were analysed by AAS w.r.t. standards.

Sample preparation for total nitrogen content was analysed by the JELDAHLS methods for total nitrogen estimation of plant materials

TABLE-IV

Species Name (Local Name)	Nitrogen (%)	Calcium (ppm)	Iron (ppm)	Lead (ppm)
1. <i>Atylosia scarabaeoides</i> (Linn) Benth (Waza Chami)	1.4	1.077	12	56
2. <i>Atylosia scarabaeoides</i> (Var) Benth (Waza chami taluba)	1.34	0.446	4	45
3. <i>Butea minor</i> Ham (Koro Chami)	1.3	6.16	13	
4. <i>Cajanus cajan</i> (Linn) Mislsp (Aok) Chami	1.6	0.618	48	19
5. <i>Canavalia ensiformis</i> (Jacq) DC (Matzukulashi tulula)	1.8	0.570	36	6

6. <i>Canavalia gladiata</i> (Jag) DC (Matzuklashi tulutalang)	1.7	0.500	32	10
7. <i>Glycin max</i> (Linn) Merr. (Azungken tulu)	1.8	0.327	18	5
8. <i>Glycin max</i> (Linn.) (Var) (Azungken tanakla)	1.6	1.371	60	12
9. <i>Glycin max</i> (Linn.) (Var) (Azungken tila)	1.6	1741	0.03	12
10 <i>Lablab niger</i> Medik. (Matsuklashi tapak)	2.2	608	35	12
11 <i>Lablab purpuries</i> (Linn) Sweet (Matsuklashi temerum)	1.6	672	32	20
12 <i>Mucuna bracteata</i> (Mesemer)	1.9	302	25	20
13 <i>Mucuna monesperma</i> DC, (Aremmesemer)	2.1	272	30	25
14 <i>Mucuna nivia</i> (Mesemer)	2.0	345	10	22
15 <i>Mucuna prureta</i> Hk. (Mesemer)	1.8	0.288	16	18
16 <i>Mucuna utilis</i> (Mesemer tanakla)	1.8	0.78	50	1
17 <i>Phaseolus aurens</i> Roxb. (Chami)	1.4	722	48	4
18 <i>Phaseolus calcaratus</i> Roxb. (Anakchami/Azungken)	1.5	525	32	32
19 <i>Phaseolus coccineus</i> Linn. (Kollari)	1.4	173	38	8
20 <i>Phaseolus lunatus</i> Linn. (Kollari tilaba)	1.2	173	46	-
21 <i>Phaseolus vulgaris</i> Linn. (Kollari tanak)	1.6	182	27	20

22	<i>Psophocarpus tetragolobus</i> ? (stick.n) DC (Sanga lule)	2	0.522	0.21	226
23	<i>Psophocarpus tetragolobus</i> (var) (Sanga lule)	1.6	466	0.34	7
24	<i>Pueraria phasealoides</i> ? (Waza anakchami)	1.05	0.639	15	10
25	<i>Vigna senensis</i> (L) Savi ex Hassk. (Tsumar chami)	1.8	415	40	30
26	<i>Vigna umbellata</i> Roxb. (Malang chami)	1.4	1821	71	21
27	<i>Vigna umbellata</i> Roxb. (Small variety) (Malang chami tasula)	1.4	949	14	65
28	<i>Vigna umbellata</i> Roxb. Black variety (Malang chami tenakla)	1.3	1421	88	68
29	<i>Vigna umbellata</i> Roxb. Red variety (Malang chemi temeremla)	1.5	976	30	22
30	<i>Parkia roxburghii</i> G. Don (Yongjak)	2.3	788	50	67

Cucurbits

Benincasa cerifera Savi	- Mousu
" hispida	- "
Citrullus vulgaris	- Nokari matsu
Cucumis melo Linn.	- Tzumar zungi
" moschata Duchme	- Apang matsu
" pepo DC.	- Aorzungi
" sativa 2	- Zungi
Cucurbita maxima buchesne ex Lamark.	- Mapu

<i>Lagenerea sciceraria</i> (molina) Standl	-	Koda
<i>Luffa acutangula</i> (Linn.) Roxb.	-	Aam
" <i>cylindrica</i> (Linn.) M.J. Roem	-	Pokah
" <i>echinata</i> Roxb	-	Aam
" <i>graveolens</i> Roxb	-	Aam
" <i>vulgaris</i> Ser.	-	Aam
<i>Momordica charantia</i> Linn	-	Kerala
" <i>cochinchinsis</i> Spring	-	Phat Kerala
<i>Secheum edule</i> (Jacq) Stwartz	-	Phesjang
<i>Trichosanthes anguina</i> (Linn.) Haines	-	(Snake gourd)
" <i>diocia</i>	-	
" <i>depinuim</i>	-	
" <i>palmata</i>	-	
Solanum		
<i>Capsicum annum</i> Linn.	-	Mersu
<i>Cyphomandra betaceae</i> (cav) Send	-	Entzu pengena
<i>Lycopersicon esculentum</i> Mill	-	Pengina
" <i>cerasiforme</i> var	-	Pengina tajula
" <i>pyriforme</i> var	-	Pengina tasula
<i>Nicotiana tabacum</i> Linn	-	Moko
<i>Solanum bakeri</i>	-	Meri an longkok
" <i>barbesetum</i> Nees	-	Longkok/Likok
" <i>gelo</i>	-	Sungurlikok
" <i>melongena</i> Linn	-	Pendu
" <i>kurzii</i> Br.	-	An longkok
" <i>torvum</i> Swartz	-	Kachari longkok
" <i>tubersum</i> Linn	-	Alu

Fruits

<i>Alphonfia lutia</i> Hk. f. & Th.	-
<i>Ananas comosus</i> (Linn.) Merr	- Jeru
<i>Artocarpus integrifolia</i>	- Polong
<i>Averohoea carambola</i> Linn.	- Tazungjang mozu
<i>Carica papaya</i> Linn.	- Mamazu
<i>Citrus assaensis</i> Dutta and Bhatta.	- Naring
" <i>aurantifolia</i> Suingle.	- Chemben tesenla
" <i>aurantium</i> Linn.	- Chuba chemben
" <i>indica</i> Tanaka.	- Naring
" <i>grandis</i> Asback.	- Narongsu
" <i>Jambheri</i> Lush.	- Nasu tasula
<i>Citrus Kama Rab</i>	-
" <i>latipes</i> Tanaka.	- Merichemben
" <i>limetta</i> Lisseso. ?	- chuba chemben
" <i>linion</i> Burn.	- Chemben tesenla
" <i>macropetra</i> Montr.	- Khasi chemben
" <i>maxima</i> Merr.	- Chemben
<i>Citrus medica</i> Linn.	- nasu
" <i>meghalozycarpa</i> Lush	- Chembentesen tasula
" <i>nobelis</i> Lour	- Chuba chemben tasula
" <i>paradisi</i> Macb	- Naring
" <i>reticulata</i> Blanco	- Naring
" <i>senensis</i> Osbeck	- Masanbi
<i>Litchi chinensis</i> (Gaertn.) Sonner.	- letchu
<i>Mangifera indica</i> Linn.	- Teti
" <i>khasiana</i>	- Teti
" <i>andamanica</i> King.	- Chechetsu
" <i>sylvatica</i> Roxb.	- pongensu

Musa paradesiaca Linn

Musa sapienteum var ?

Psidium quajava Linn.

Prunus communis ?

" domestica

" jenkinsii 1

" nepalensis

Prunus saliciana Lindl.

Pyrus baccata Linn /

" cummunis Linn

" pashia Buch.-Ham. ex D. Don.

" persica ?

" polycarpa Hook.f.

" pyrifolia (Burn) Nakai

" seninsis }

- Somomo

- Rongmongo

- modiram

- plum

- Plum

- Mesujang

- Mesujang

- Plum temesungla

- Solulo

- Solulo tajula

- Solulo tasula

- Mokorey

- Solulo tasula

- Solulo tasula

- Solulo tasula



Above : *Caryota* [†]*odora* - indigenous economic plant.

Below : *Livistonia jenkinsiana* - indigenous economic plant.



Above : *Hodgsonia macrocarba* - fruit and seeds.

Below : A tribal woman washing her hairs and cloths with the seeds of *Entada pursaetha*

CHAPTER - VI

1. FOLK PRACTICE AND BELIEF
2. ETHNOBOTANICAL FOLKLORE AND BELIEF

I. FOLK PRACTICES AND BELIEF

Magic, belief and superstition

Like most of the common people of the world, the indigenous people of those two districts of Nagaland believe in magical cure of sickness. There are many ways of propitiating the evil spirit who is believed to have caused the sickness. One most common form is to offer some food items to the evil spirit. It may be eggs, meat, rice or rice beer, etc. There are great variations in the details of rituals from tribe to tribes or even from village to village. There are specific persons who perform these rites and they are sometimes like village priests called "putir*" (Ao) or Medicine man "Arasentsur" (Ao).

Another form of Magic cure is extracting bits of stone or piece of bone, or piece of thorn, or some small insects from the body of the person without any pain or leaving any mark ^h where it came from. Then followed by applying some chewed leaves or the part/juice of the plant substances. It is a matter of faith and so often it cures the diseases. These are performed generally by Medicine man, "witch" or by "quack" doctors or by impersonate of Tiger/Leopard called "Arasentsur" (Ao), and they are found in almost every Naga villages, who can do this magic operations and they are something like the Onjhas of Bengal and Orisa villages.

**The eldest and most experienced man in the village. He is the best acquainted with social religious customs, become the spiritual leader.*

Another category of persons is found in some villages or in group of villages who can foresee a thing and tell the future. Often such persons fall in a trance as found all over the world, sometimes these people actually do not get possessed but simulate it to keep up the prestige, and often they take recourse to magic. Such people may be a man or women.

The people also believe in impersonification in the form of animals like, tiger, leopard, wild dog etc. They can roam here and there and in forests incognito. If such a tiger or other animal is killed or wounded the actual person also dies or get sickness. It is said impersonification of animals can be changed six (6) times in case of man and five (5) times in case of women in their life times. Then in the last stage the person also dies. This personification is transferred to next generation and it continues generation to generations in the family.

Omen: Naga people believe in the practice of Omen and it has been strictly practiced. The omen is taken for assessing the future or to know what will be the result of a particular project, often omen are taken before embarking on a big work, examples; Head hunting, fishing and game hunting, making new roads, jhuming, selection of building site, rain making etc. However, omen is taken from various things such as by killing a chicken, culking ginger, breaking eggs and tearing some particular species of leaves etc. The article from which Omen has to be taken and details of taking the omen vary from tribe to tribe, usually it

is performed by the priest "putér"(Ao) or by magic-man or Medicine man "Arasentsur"(Ao).

Dream: Nagas attach much importance to dreams, but not so much as done to dominate the important events of life. It is nature the common people of the world attach importance to dreams, and the Nagas are no exception. Dreams has to be interpreted and there are some wise-men who are believed to have the capability of interpreting the dreams. Generally the village priest does this.

Second sight: The occurrence of second or advance sight is noted among Nagas. Sometimes the people see a person of another village coming into theirs. But in fact he has not come, but would come a few days later. In such case the person seen is the wraith of the real person and such sights are known to have occurred. It is mostly found in connection with dead man. Suppose a man of another village is dead on a particular day, but he is seen roaming in another village a day or two after his death.

Methods of cutting (Extraction) of plant

The main cultivation system practiced by the Naga is Jhuming and maintenance of Kitchen garden, Bamboo cultivation, palm cultivation and community reserved forest.

In the Jhuming cultivation system the forest is slashed and burnt, but in the process, the big trees are merely lopped and it is a tradition. In the villages the rich men leave a few branches uncut at the top of the tree. There is apparently an

idea of leaving a place of refuge for jungle spirits. The practice is regarded as merely an indication of wealth and it is believed that should a poor show such a ~~an~~ impertinent spirit as to imitate his rich neighbours and leave a few branches uncut, he will not have a good crop. The top branches of trees such as *Schima Wallichii*, *Ficus elastica*, *ficu* *Bengalensis*, *Stereospermum chelloenoedes*, *Alnus nepalensis*, *Betula alnoides* and species of *Castanopsis*, *Terminalia*, *Caryota*, *Quercus*, *Euriya* and of big trees, are left uncut. The idea as it exist may be the belief of an association between the trees as the abode of jungle spirit and prosperity. Ao have an attitude that the "Aren" associated with the spirit would certainly be attracted to the fields and to the lopped trees of the rich man as "Ar~~fen~~ always attract aren". Beside Jhum slashing Nagas do not cut the trees or the wood for domestic uses throughout the seasons. It is obtained normally from the cut trees in Autumn and winter seasons only. But for the fire wood it is cut during early spring only coinciding with the timing of Jhum slashing. Beside for the domestic utility, cutting is done in proper seasons following the phases of the moon. Certain plants are cut during the full moon and others during the Quarter or "C" moon only. It is true that certain plants if cut during improper time the wood is attacked by insects or flies and the longevity of the wood become short. Therefore extraction of the wood for domestic use is strictly followed to various seasons and the phases of the moon for an example: Bamboo and palm leaves for thatching are cut

during "C" moon while the wood for the building materials is cut during full moon.

Rain Making

Nagas, being predominately agriculturists, give great importance to rainfall. Too much rain or drought is disastrous to the crops. It is natural therefore to find in vogue among the Nagas many ceremonies designed to bring down the welcome showers. Some of those ceremonies are:

- (a) Poisoning of the stream by using certain plants and fishing with due rites.
- (b) Rain making through sacrifice and by observing plants.

Poisoning of stream: The custom of poisoning a stream for rain is practiced throughout the Nagaland. For poisoning of a stream, a specific day is selected and the village youngsters collect fish poisoning plants "*Ruja*" *Diospyrus lanceofolia* of Ebenaceae (Fabeaceae members, *Diospyrus*, *Juglan regia*, *Zanthoxylum* etc., are used). After reaching the river bank, they all put on rain shields made of palm leaves (*Caryota urens*, *caryota wallichii*, *Jenkensia* sp. *Pandanus* sp. etc.) over their heads as if rain were falling. Then the oldest man of the village called "putir" is selected by the medicine man "arasentsur". He enters into the water and pounds his bundle of plant parts (poison) saying "Is there no rain in the sky? Of course, there is, Let it rain and never stops till the river is big enough to carry away an old man". After this rite is over, all the men starts pounding their

bundle of poison and allow its juices to flow into the river. When the river gets sufficiently poisoned, the dead and dying fishes are caught in the ordinary way, with hands and daos.

Rain making through sacrifices and examination of Plants:

For this ceremony first of all, all the "Morungs" of the village repaired and mended. Its surrounding jungle and undergrowths are cleared of. Then five cocks are sacrificed with a prayer for rain. The "Arasentsur" (medicine man) examines its entrails and predicts whether the ceremony will be successful or not.

Methods: The medicine man "Arasentsur" will pull out the apical shoot of a freshly cut plant (*Curcuma angustifolia*) and it is observed whether there is shrinkage with the brownish colour or not. If so, it is predicted that the year will have scarcity of rain and if the shoot plucked is healthy, juicy and fleshy it is predicted that there will be normal rainfall for coming year. It is performed during the month of February and March.

Mangkotsurong (*Erythrina arborescens*)

The *Erythrina arborescens* and *Erythrina stricta* are called 'Tsubentong'. This tree is planted outside the morung in all the villages, and is surrounded by round stones called "arenlong" (fertility stone) at the foot. The place where this tree is planted is called "mangkotsurong" (The tree where heads trophy are kept) The kuki and Kachari call it "Ntavung". During the head hunting days, the enemy heads, hands and feet, which are brought in as "war trophies" were kept hanging from this tree

after performing the various rites and ceremonies connected with head taking. These trophies were kept for two to three months in display, hanging from the tree, after which they are kept in the respective intrances of the family house of the individual warrior.

This plant is also used as an oath taking plant. Oath is taken under the Erythrina tree which are grown in land belonging to a hereditary representative of former chiefs. Oaths are taken by pulling the leaves, which, it is believed, do not come away in the hand of a false swearer. As the leaves are pulled the swearer swears that if he is wrong he/she will fall and would rot like the Erythrina tree (it is seen that this tree when fallen decomposes fast) and that he will also rot like the enemy heads on the tree which are kept in display, seen by all the villagers.

The wood of this tree is not used as fuel during marriage feasts. The Garos of Meghalaya also used to bury the hands and feet of their enemies on the spot where an Erythrina plant was there.

At the time of peace making between enemy villages, each party would bring away one of the "arenlong" (fertility stone) from the other's "Mangko-Tsurong" (Place where Erythrina plants are planted and head trophies are kept) and place it under their respective head trophy trees, knowing that till the stone rots there will be no more war and head-taking between them.

Preparation of rice beer

Rice-beer was the main drink of the Nagas. "No Ao drinks water if he can get rice beer" - (J.P. Mills, 1926. 'The Ao Nagas')

p.146) Rice beer which is known as 'Yi' or 'Azu' is made of boiled rice by means of fermentation process. At festivals large quantities are brewed and drank. Wherever a man goes, whether to the fields or river for fishing, he takes the home-brewed rice beer. To brew the rice beer, first yeast (Piyazu' or peza) is prepared. To make the yeast, first husked rice *oryza sativa* is soaked in water in an earthen-pot. After some time the water is drained off and the rice is pounded up with *solanum bakeri* leaves. (Sometimes the leaves of *Capsicum* sp. are also mixed). And spread on winnowing fan made of *Calamus-Rotrong*. This dough is then divided into a number of elleptical cakes and a similar number of square cakes. The elleptical cakes are called male cakes and the square one are called female cakes. A layer of rice husks is then spread on a bamboo tray and over the husks sugar cane leaves (*Saccharium officinalis*) are spread to make the yeast sweet. The damp cakes are then put on top of it and some old yeast from the previous preparation is crushed and its crumps are spread over the cakes. It is then covered with the leaves of *Phrynium* species. Then they are left to dry till the morning of the sixth day when they are considered ready for use.

To prepare the beer, rice is boiled and spread on a mat and allowed to cool at about 28°C. Then pounded yeast and a small quantity of rice husks are mixed with it. The woman chants "enter the plantain tree, (*Musa paradisica*)^a climb the cane and be sweet", as she prepares the beer. Immediately after mixing it is put into a basket lining with the *Phrynium* leaves. On the evening of the next day it is put into tall baskets lined with

plantain leaves and the juice is allowed to drain off at the bottom which is collected in meso or Amm (bottle-gourds) *Lagenaria siceraria* or in Bomboo jug, which becomes the favourite drink of common Naga.

Erection of the main post during House Construction

After the site selection for the construction of House for a family, the first main post is erected after performing a ritual sacrifice. The main post is called "Tongshi" and the two sub-main posts are called "Tongnu" which are erected first during the construction of house. To erect the post about 1-2 mt. deep and a circumference of slightly larger than the circumference of the post is dug, then a cock is sacrificed. Small piece of the cock's intestines, empty egg shell, few pieces of slice ginger (*Zingiber Officinalis*) and small piece of fermented rice is wrapped in a plate of "Am" (*Phryneum parviflorum* or *P. capitatum*.) and it is tied in the main post after erection from the hole dug on ground. This performance is done by the priest saying - "Let there be no illness or sickness here and if the fire catches the house may it become water".

Uses of Bamboo

Bamboo is the fastest growing plant among the terrestrial plants and is grown everywhere in Nagaland. Almost a life sustaining plant and as such the best friend of the Nagas. Among the Ao-Nagas there is a traditional belief that the bamboos came from heaven. All Naga tribes use bamboos both extensively and intensively. It provides the raw material for food, shelter,

medicine, fodder, paper, etc. The uses of bamboos occupy so much significance that a traditional Naga tribal life, without bamboo is unimaginable. The minute a Naga baby is born in the rural soil it becomes associated with the bamboo, in that a bamboo splinter is used as a blade to cut the umbilical cord. This association or relationship continues till death, in that the dead body is wrapped with a bamboo mat especially made for observing the last rites.

In a poor Naga house all domestic utensils, furnitures and various implements for jhum field, weapons, armours, ornaments, internal and external decoration pieces are made of bamboos. Besides, each house must keep 10-15 bamboo cylinders filled with water near the entrance door to fight fire incidence.

The young bamboo shoots locally called "zukolak", after peeling off the leaf-sheaths are cut into thin pieces, cooked and eaten. The cut pieces mixed with bark-ashes of *Eugenia* species or *Stereospermum chelenoedes* or the ashes and charcoal of *Teinostachyum* species are kept for 3-5 days for fermentation. Here the ashes and charcoal act as a tenderizer. The fermented young bamboo shoot pieces locally called "zusum" or "zurem" is a delicacy among the Nagas.

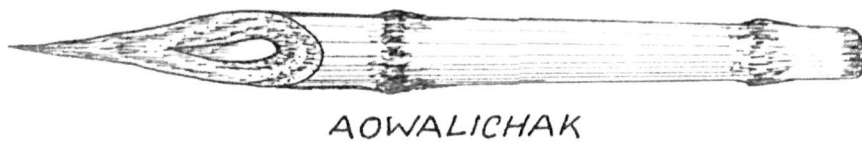
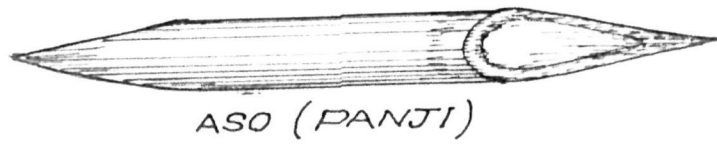
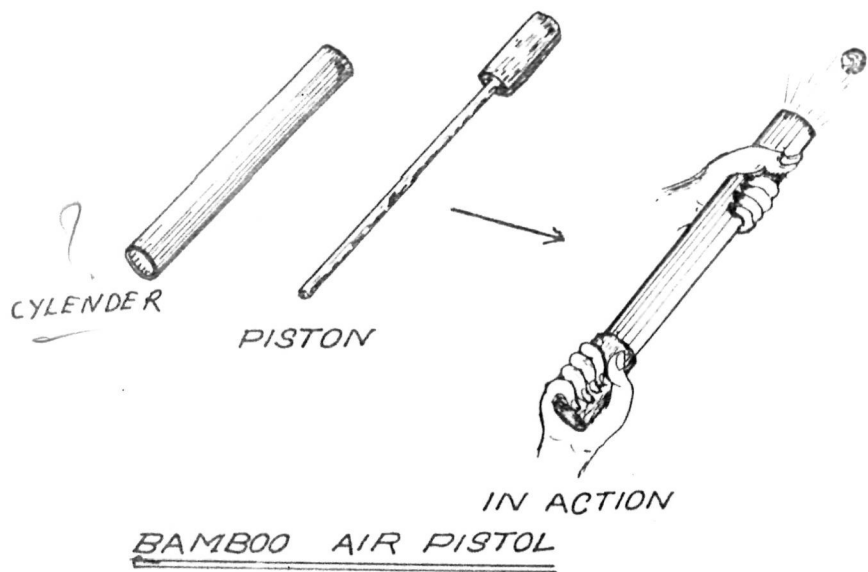
Peeled bamboo shoots are crushed and baked in a V-shaped basket lined inside with palm (*Phrynium parviflorum* or *P. capitatum*) leaves. The juice locally called "itzu" is drained out through a small hole at the bottom of the V-shaped basket, collected and used as vinegar, which can be stored for 1-3 years. The bamboo shoot pulp left behind in the V-shaped basket after the juice has

been extracted is locally called "itzuk", which is now baked in jugs of *Luffa cylindrica* or in bamboo cylinders till it gives a pungent odour. "Itzuk" is a favourite food for the Nagas and can be stored for 1-2 years. Sun dried bamboo shoot pulp, locally called "isu" gives a pleasant aroma and taste. It can be stored for 1-3 years. Another bamboo delicacy locally called "zumasu" is prepared by decomposing the bamboo shoot pulp in a special manner - the bamboo shoot pulp tightly packed in a bamboo cylinder and the cylinder is made air-tight with a cork of palm leaves. It is then put into a hole in the soil and the whole thing is kept covered with soil for 2-10 months during which the pulp undergoes decomposition and the "zumasu" is obtained.

Except *Chimonobambusa* species, all other bamboo species are used in culnery. Bamboo seeds are eaten as secondary staple food. A small semi-social bug, *Dolycoris* sp., locally called "polo" which is associated with *Dendrocalamus hamiltonu* seedlings is a delicacy among Nagas. The bug is mixed with a little yeast and then fermented to prepare a dish locally called "Poloonatsu". The gelatinous fluid accumulated inside the bamboo culms is potable; it is drunk for treating urinary ailments and also applied to cure ear-ache. The soft, white papery lining representing the inner most wall-layer of the culm is used as haemostatic and antiseptic.

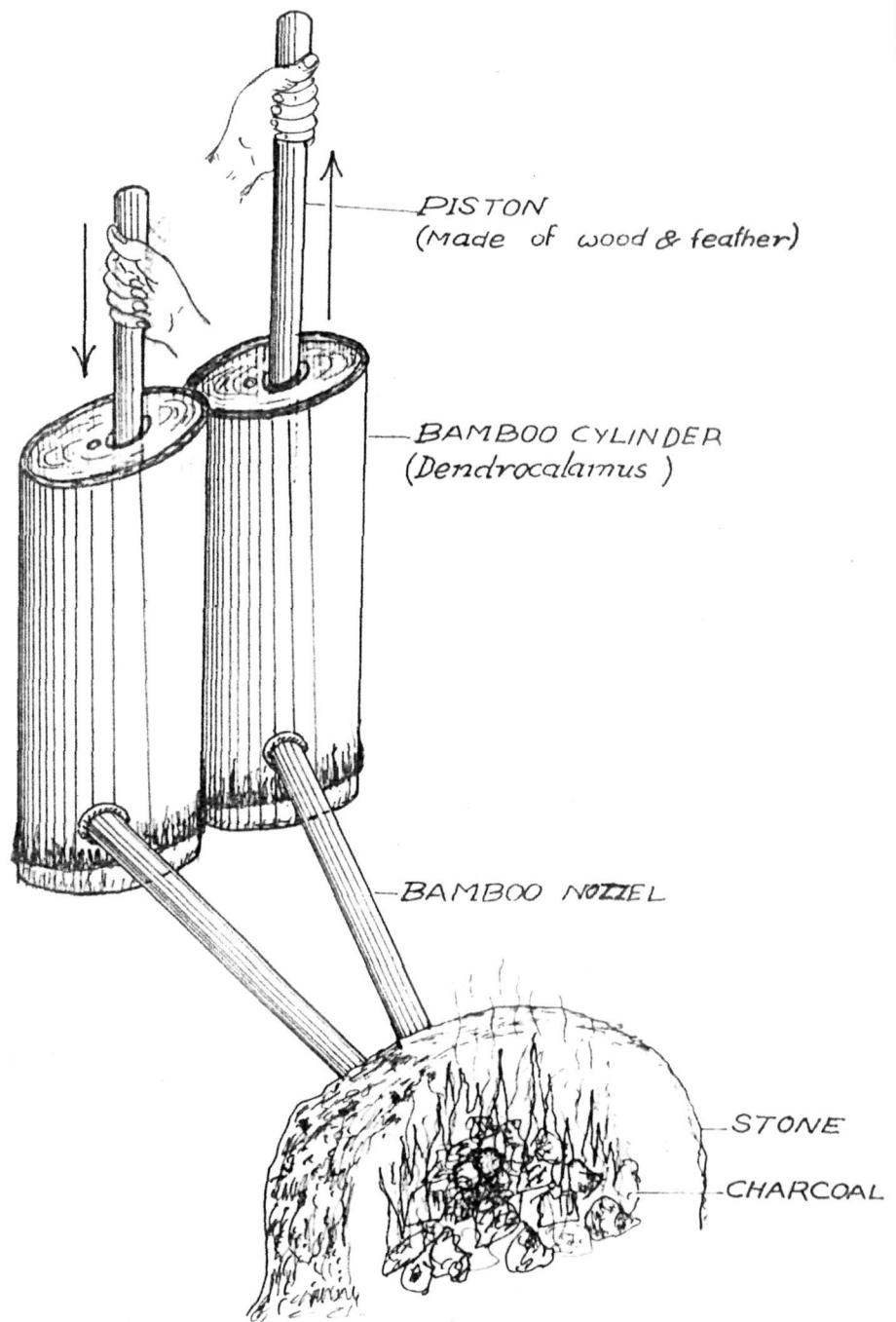
Dendrocalamus leaves are burnt to ashes and used as shampoo. Young, tender leaves are eaten by the cattle but is avoided during lactation as it is believed to reduce milk yield. Culm-sheaths are used in making temporary shades and walls in

construction works. Pieces of bamboo culms, 1-2 m. long with the partition walls perforated, except at the base, are used as water-jugs. A bundle of bamboo water-jugs are placed in a bamboo basket and carried by the local people on their back for carrying water. A bamboo head-strap is used for carrying the basket containing water-jugs filled with water (Plate No. 3:a.). An internode containing both the partition walls at the nodes is cut out and a small hole is made in one of the partition walls and is then used as an effective container. A single green bamboo internode with one of the partition walls removed is used as a cooking pot. Bamboo ladders are also made out of bamboos by cutting an internode down to the node so that the final shape resembles the milk-measuring cylinder commonly used by the Indian milk-men. The hard outer wall-layer of matured green bamboos are peeled off and used as kitchen knives; it is also used as a surgery blade in various traditional surgery works including cutting of umbilical cord during child birth and animal castration. Bamboo splints, locally called "Aling/Yong" made out of *Dendrocalamus*, *Sinobambusa*, *Bambusa* and *Cephalostachyum* species are used for binding purpose in construction works, basketry, matting, etc. Many of the household items such as jugs, cups, plates, tobacco pipes, hair pins, needles, comb, earrings, musical instruments, animal and bird traps, fishing equipments, cylindrical blower for blacksmithy, various tools and implements like rakes, dao-handles, axe-handles, etc. are made out of bamboos. Various bamboo missiles locally termed "Longminokchen", "Aowanokchen" and "Aowalichak" are made of lower and thicker parts of bamboos. Bows and arrows locally termed

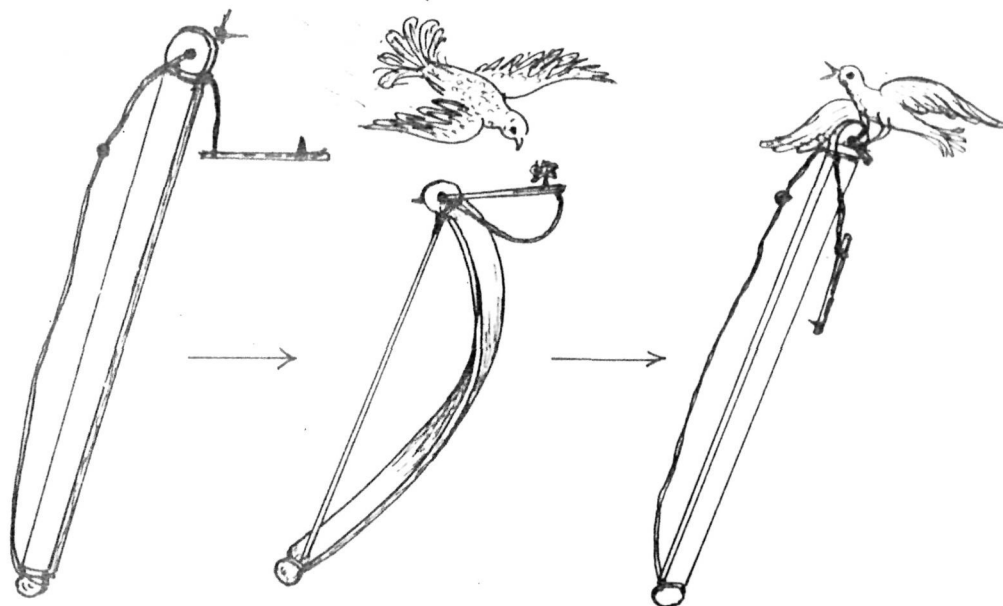


MISSILES: MADE OF BAMBOO

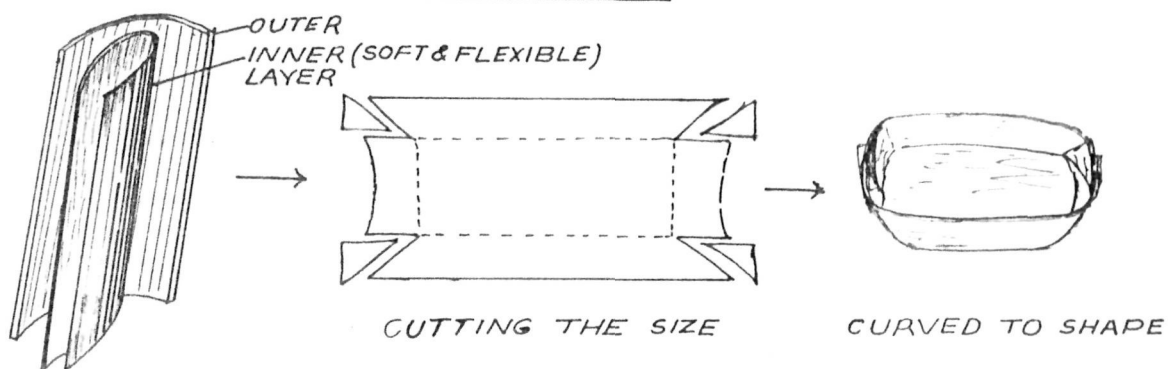
FIG-VII



BAMBOO BLOWER FOR BLACKSMITH

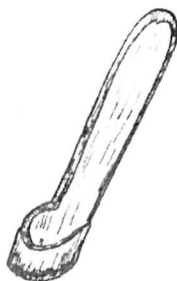


(a) KUPHARO (BIRD TRAP)



OUTER WALL PEELED OUT

(b) CONSTRUCTION OF BAMBOO PLATE



(c) LADLE



(d) SPATULA

PLATE 26



Above : Various kinds of spears made out of *Caryota*, *Calamus*, *Bambusa*, *Dendrocalamus* and *Mesua ferea*, some are decorated with dyed hairs.

Below : A pair of daos and shield made out of *Mesua ferea* wood - used for animal hunting.



Above : Set of smoking pipes : (1) tobacco container, flint lighter and boxes (2) various kinds of smoking pipes made out of bamboos.

Below : Cross-bows, arrows and poison-box.



Above : Bamboo boxes and baskets, dao-handle decorated with red dyed goat-hairs, dao-box decorated with human hairs, bamboo beer container, bamboo waist bands, neck band decorated with tiger - and boar - teeth.

Below : Wooden bowls, spoons and a bamboo beer container.



Above : Fire making set.

Below : Kitchen shelf: (1) bamboo basket (2) bamboo fish-trap (3) a bunch of millet (4) bamboo box (5) Wooden stool-plate (6) bamboo fish basket containing garlic (7) fish bag (8) ginger in a stool-plate (9) a container of *Lagenaria* fruit jacketed with bamboo rattans (10) bamboo basket (11) earthen pots.



Above : An Ao-Woman wearing 'Tongpang' hanging from the ear.

Below : Sets of earrings, hair pins and bamboo - combs.

"Lichak" and 'Lichakjang' respectively are made out of bamboos. Green bamboo is put into fire when it bursts with a loud sound and the air enclosed in the internode gets released. This is done in order to drive away birds and animals in agricultural fields and during festivals. Long bamboo culms are split open into two halves and used as an alternative to water pipes for channeling water. When a Naga boy marries a girl, his friend, locally called 'Atombu' (a distinguished friend) from a different phratry makes the following articles: bamboo mat door, hanging bamboo shelf above the fire place, bamboo cups, jugs, plates and cooking bamboo cylinders, which must be used by the newly married couple for 6 days and nights after the marriage ceremony. Fire should be made using dried bamboos by friction bamboo splinters during their stay for 6 days and nights in the new house (Traditional Fire Making).

Folklore: There was a war between the fire and the water. The fire on losing the war had to hide itself in the bamboo culms. The grass-hopper having no eyelids happened to see the fire hiding in the bamboo culms. This was reported to man by the grass-hopper and thereafter man took the fire out of the bamboo culms by rubbing the rattans resulting in the production of fire by friction.

List of the important bamboo species used by the tribes of Mokokchung and Tuensang District of Nagaland

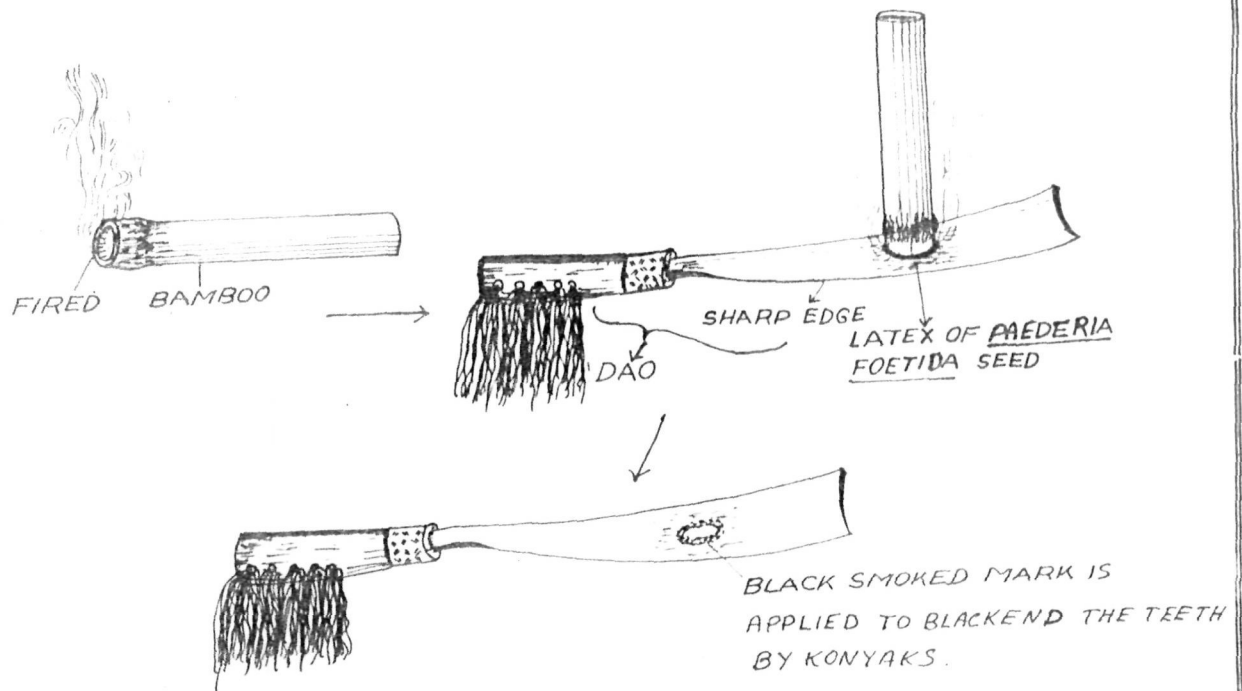
1. Arundinaria hirsuta Munro
2. A. rolloana Gamble Bamb

3. *Bambusa balcooa* Roxb
4. *Bambusa nutans wallich* apud Munro
5. *B. pallida* Munro
6. *B. tulda* Roxb
7. *Chimono bambusa fuchsianum* Gamble
8. *C. griffithiana* Nakai
9. *C. callosa* Nakai
10. *Cephalostachium capitatum* Munro
11. *Dendrocalamus giganteus* Murno
12. *D. hamiltonii* Nees-et Arn
13. *D. hookeri* Munro
14. *D. patellaris* Gamble
15. *D. Sikkimensis* Gamble
16. *Melocanna bambusoides* Trin
17. *Psuedostachium polymorphum* Murno
18. *Sino bambusa elegans* Nakai
19. *Teinostachyum dullooa* Gamble
20. *T. Griffithi* Murno

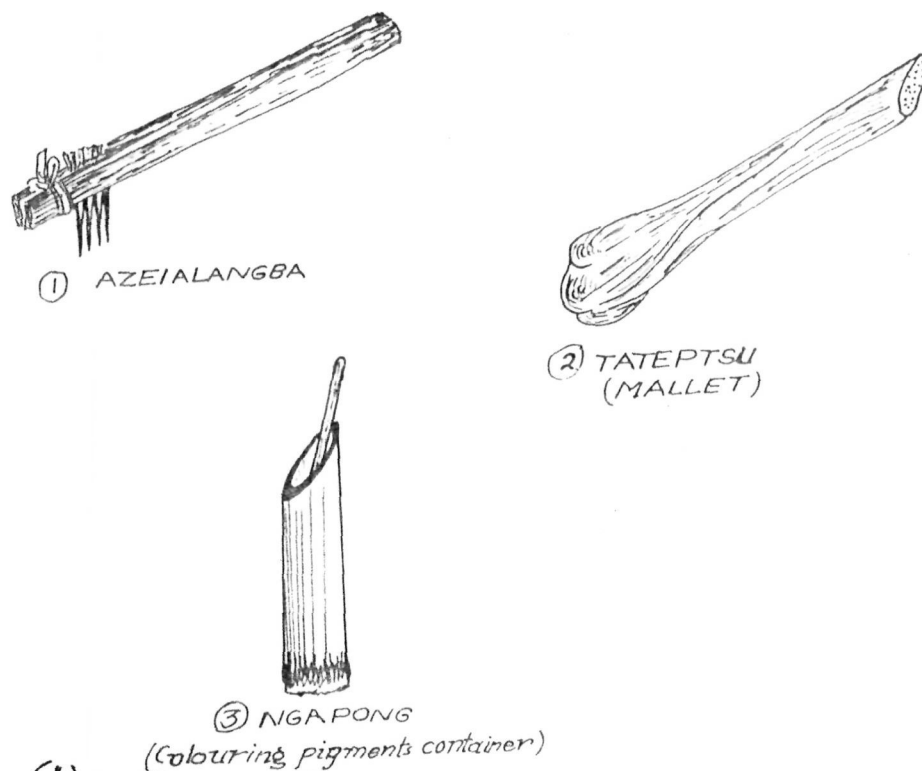
4. Pricking of Tattoo

Traditionally Ao, Chang, Sangtam, Konyak, Khiamungan and Phom of the Naga tribes inscribes their bodies with tattoo marks. Warrior who had taken head had circles tattooed on their face and all of these tribeswomen are tattooed on their chin, throat, breast, wrists and legs. The pattern varies from tribe to tribe and clan to clan.

The operation of tatting is carried out by old women in the jungle near the village and it is strictly forbidden in many



(a) TECHNIQUE OF ~~BLACK~~ TEETH BLACKENING.



(b) TATTOO INSTRUMENTS

FIG-X

villages for any male to be present. The pattern to be tattooed is marked out by the old women on the girl's/boy's skin with a bamboo stick dipped in the colouring matter called "naptsu". Naptsu is the pigment used to colour the tattoo marks. It is a juice extracted from the Napiti plant *Terminalia* sp. The container of the colouring pigment is called "Nap bong" which is made of bamboo a cylindrical hollow box. The Girl/boy is held firmly on the ground while the marked out pattern is punctured all over with a adze-like instrument called "Azialangba" till the blood ooze. Azialangba is a particular instrument, tightly bounded bunch of spines of *Berberis* or *Citrus* or *Calamus* species which is hafted to a wooden handle like an adze-head and which is used for puncturing the skin. The puncturing is done by hammering the Azialangba on the skin with a root stalk of *Curcuma* sp. (kamri) or *Zingiber* sp. (Chenre/pangchala) called "Tatepba" (Mallet). The black colored pigment "naptsu" is again applied over the punctured skin after the blood has been washed off.

Tattooing is done in the month of December and January. After the tattoo has been done strict food taboos are observed. The girl who has been tattooed is given only cold rice, fermented bamboo shoots and flesh of the birds only, till the wounds are healed. They are not allowed to eat cane berries, *curcuma* sp. and *zingiber* sp. (both plant and fruits) till the spring showers of April washes the world clean.

The process is exceedingly painful and the wailing and gnashing of teeth that goes upto heaven after tattooing of a big batch has been completed is a sound which, once heard is not easily

foregotten. If a girl screams and shout too much, a fowl is hastily sacrificed to appease any evil spirit which may be increasing the pain.

Alar-Naro [Costus speciosus (Koen. ex Retz.) Smith.] belonging to the family Costaceae has played an important role in the tradional life of the Nagas. The local name given to the plant is 'Alar naro' which means slave's flower (Alar = slaves, naro = flower). In the distant past this flower was set aside to be used as an ear-ring by the slaves only and was a taboo for others. The flower was also hung on the ear-lobes of a freshly killed tiger before the dead tiger was placed on a bamboo-platform. The following uses of the plant are utilised even to-day and are reported to be very effective. The crushed plant is introduced through the mouth of a dead person to prevent coming out the intestinal parasites through the mouth. The plant is crushed and the extract juice is drunk as antihelmenthic, astringent, for urination and also as opth~~al~~mic. In the event of a domestic animal being wounded and subsequent development of maggots in the wound, the stem of *Costus speciosus* is cut out taking care that the length of the stem-cut equals the length of the domestic animal. The wound is then touched with the cut end of the stem and the stem is cut longitudinally into 5 pieces in case of female and into 6 pieces in case male animals. The pieces are then kept over the fire - place and smoked to dryness. It is believed that by the time the pieces have dried up completely, the maggots will have already come out of the wound and the wound healed up.

Botanical ascription on naming of Ao Villages

1. Akhoia - (Place of Walnuts) This village was founded on a hill tops where there was a luxuriant growth of walnuts *Juglan regia*, and thus the village is named as place of Juglan nuts.
2. Asangma - (Place above the palm groove) This village was founded above a dense growth of "Asang" *Wallichia denseflora*.
3. Changtongya - (Place of cane) Village where there was a dense and luxuriant growth of *Calamus* sp (cane)
4. Chuchuyimbang - (Upper Village of *Psuedostachium* sp.) This village was founded in a upper part of a hill range in a place where there was a dense growth of the bamboo species
5. Chuchuyimlang - (Lower village of *Psuedostachium* sp.) Similar village was founded in a lower part within the same range and with the same bamboo *Psuedostachium* sp. called as lower village of *Psuedostachium* sp.
6. Dibuaia - (Place of a thin bamboo " *Psuedostachium* sp. village founded in a dense growth of bamboo
7. Japu - (Ja = cooked rice, Pu = sun dry) The village was named after, the drying of cooked rice *Oryzja sativa* in the sun. i.e. from the higher altitude distance village called Longsem dang, a few families were ^{seen} drying the cooked rice in the sun light then the village was called JAPU.

8. Kilengmen - (Kileng = Endata perseatha, Men = settled or based) Village settled on or around the base of a gigantic growth of Endata persiatha plant.

9. Khari - (Khari = Ashes of Stereospermum chelonoids) Village founded on top the ashes of the Stereospermum chelonoides)Note - Khari is used in a process of fermentation of bamboo shoot and also used as tenderizer for meat, and in curries.

10. Lakhuni - (Place of plantain yard) The Village founded near luxuriant growth of Musa sp.

11. Lirmen - (LIR = Emblica ^oofficinalis, men - settled) Village was founded near a plant of Emblica officinalis

12. Longmisa - (Longmi = Bambosa ⁺Tulda, sa = short form of "sapang" = platform) Village was named thus as its founders constructed a platforms made of Bambosa Tulda

13. Mongoya - (Monggo = Banana "Musae sp.", ya = group) Village was founded with abundance of banana "Musa parasedica".

14. Mopongchoket - (Mopong = wind, choket = uplift of palm leaf Jenkensia Scholaris") The village was named as the palm leaves of Jenkensia scholaris was being lifted up by the wind in the thatch house.

15. Sabangya : (Sapang = bamboo platform, ya = group) village was name after a group of Bamboo plantform of Bamboosa tulda.

16. Salolamong - (Salola =Name of a girlt named after the Orchid Dendrobium densiflorum mong = not seen) Salola was a beautiful

girl named after *Dendrobium densiflorum*, and as she disappeared from the newly founded village, it was named after her. (Ref. to folklore "Rangtsung and Salonaro)

17. Sungratsu - (presence of root) During the clearance of the forest for the village settlement, the roots of *Erythrina arborescense/stricta* were found and the village was named as "Sungratsu".

18. Wameken - (Surrounded by bamboo "*Dendrocalamus hamiltonic*") The village was founded in the heart of *Dendrocalamus hamiltonic* strand and the village was surrounded by the bamboo.

II. ETHNOBOTANICAL FOLKLORES & BELIEFS

Introduction

As the famous anthropologist Bronislaw Malinowski once stated, "there are no people, however primitive, without a system of belief and magic, nor are there any savage race lacking in the scientific attitude towards life".

Generally due to lack of written language, the tribals record their experiences and history in oral traditions handed over from one generation to the next. Such oral traditions in the form of folklores, beliefs, legends and folk practices etc. throw tremendous light for the anthropologists on the origin, migration and socio-cultural life of the people. An analysis of such beliefs and folk practices remains a scientific understanding about man and nature and the maintenance of ecological

equilibrium through various religious and cultural sanctions and taboos, amazing even the scientific investigators by the tribals knowledge about the cycle of life in nature. Besides, it has proved to be a treasure of information for the ethnobotanist of recent times, as many of such beliefs and practices are associated with plants and animals.

The traditional Naga society^{is} full of beliefs, superstitions and magical as well as non-magical ritual practices; so much so, that the people normally led a highly ritualistic, prescriptive and ceremonious life. The following are some of the plants related to folklore recorded during the present study which are mentioned below.

Invention of Eagle Wood (*Aquilaria agallocha*)

An oil is obtained from the infected wood of this tree. It is very valuable to manufacture perfumes. Konyaks use its white inner bark for making belt.

There once lived at Nokpo-yimchen village a man named Champichanglangba, who knew much magic, and married the younger daughter of "Lichaba" God. Lichaba the father in-law of Champichanglangba, lived in a village cultivating as men do. Once he wanted to test his son in-law and told him to catch and tie up a big boar (wild pig) with an unsplit cane (*Calamus acanthospathus*). Somehow Champichanglangba managed to catch the wild boar, but he could not split the cane while holding it. Luckily his wife was pounding rice at that time. She knew that her father was making trial of her husband and dared not to help

him openly. But she managed to split one end of the cane, so that her husband was able to hold the boar with one hand and with his teeth and the other hand tear off the strips of cane and tie the animal's legs together. That way Lichaba tested him many times and after those further proofs of his son in-law's wonderful power and knowledge, decided that such a great wizard was best killed. So he sat about plotting of his death. Lichaba gave him an unsharpened dao with no handle and asked him to lop the top branches of a certain tree covered with prickly climbers (*Mezoneuron cuculatum*) during the slashing of field. Champichanglangba climbed the tree but without touching the branches by the dao, they fell off by themselves. But then Lichaba fired the jungle hoping to burn his son in-law alive and run away. But Champichanglangba unseen by his father in-law, took a prodigious leap right into the middle of a grove of wild plantains (*Musa paradisica*), where flames could not touch him, and from there went back to village by another path. Once again Lichaba tried to kill him, by offering the pork pieces putting the thorns of *Calamus acantrospathus* inside. Champichanglangba ate the meat heartily, but he was wily and collected the thorns inside his cheek (Mouth). He spat them all out on a leaf of Kapu-am (*Macranga indica*) before Lichaba, and mocked him saying: "Look Lichaba you cannot kill me, however hard you try". It is believed that the leaves of Kapu-am (Leaves of *Macranga indica*) never found without holes on it. After this Champichanglangba left Lichaba's house and went back to his village Nokpo-yimchen.

One day Champichanglangba with his dao cut a length of creeper of sword-bean (*Endada perseatha*) with two strokes, which was as

thick as man's body and kept in his house till it shrivelled up to the thickness of a man's leg. Then he drew it into the Tsurang stream (Desai river near the Assam border) where it swelled up again to its original thickness and was carried down to Assam. An Assamese found and brought it to the Raja (Ahom king) who saw that it had been severed with one stroke by a hillman and marvelled that any man could have such strength. The king there upon desired much to see this wonderful man. Champichanglangba said he will come if the Raja would have a 'chabile' stuck in the ground at every step from Nokpo-Yimchen to the palace. So greatly the Raja desire to see him that he granted even this request, and Champichanglangba came down the whole way stepping from point to point of the 'Chabile'* like a bird. The Raja then asked to show the "dao" with which such thick creeper of Endeda perseatha had been cut. Champichanglangba not only showed him the dao, but again cut through the creeper at one stroke. Then the Raja arranged a series of wagers between the Assamese and Champichanglangba that by watching, whose mouth will water (salivate) first. The Assamese ate all sorts of delicacies before Champichanglangba, but his mouth did not water nor did he salivate. Next came his turn and all he ate was a single bunch of "tangmu" *Rhus semialata* berry. But when Assamese saw him, their mouths watered, because the tangmu fruits are sour. So Champichanglangba won that wager.

* Piece of iron of harpoon shaped which was used as curenry by Ao-Naga.

After Raja tested this young man in bridge building, eating of Assamese poisoned-cooked food, and dancing on the edge of knives and needles, lastly, Raja made him to dance on axes. Somehow in doing so Champichanglangba got a slight scratch, which bleed much, and all the Assamese rushed up and smeared themselves with his blood. This caused their magic power to increase and Champichanglangba's magic to decrease. In the strength of their new found courage, they chased him to kill but he turned into a lizard and run upto a Aku tong (*Ficus bengalensis*), and hid himself in a folded leaf. The Assamese shot off every leaf with their bows and arrow but the one in which he was hiding turned again into a cricket and flew to an Agar tree (*Aquilaria agallocha*), and hid in a crevice. Assamese chopped down the Agar tree and split it up, but they could not find him yet he was hiding all the time in one of the hewed Agar piece. Later an old Assamese women picked up this piece and took it home for fire wood. When she put it on the fire it burst with a loud roar and Champichanglangba flew up the sky and became the bright star near the moon which is called "Longcha Peti" (Pole star) by Aos. Yet he left some of his magic in the Agar tree and it is believe by the Aos that the Assamese are always so eager to collect this wood from the Tzurang Valley (Desai River Valley) till today.

(2) Introduction of rice by the Rat. *Oryza sativa*

It is said that man and rats were great friends once upon a time. One day a rat asked a man to promise to give him a decent funeral when he die for presenting the rice *Oryza sativa* which is to be the essential food for man. The man agreed and the rat presented

the rice and showed him how good it was to eat. Later the rat decided to test the man's good faith, so he lay down on the bank of a stream and feigned dead. The man came along with his son, who saw the rat and pointed to his father. The father, instead of fulfilling his promise, poked a stick and put it into the stream. The rat ^{at} once jumped up in anger and said "In returned for your faithlessnes, I shall always eat your rice first and leave my droppings in it", then rat ran away. Therefore it is believed by the Aos that the rats always leaves the dropps after eating the rice and hide away from faithless man.

(3) Tsudir Moli (*Panax ginseng*)

check identity

One day, when the Aos were at Chungliyimti village, two brothers went to Tzula River for fishing. They put the fish which they had caught in a hollow bamboo *Dentrocalamus hamiltonii* with water and spices, corked it up with a kind of leaves (*Panax* sp.) and put it on the fire to stew. When they looked inside, to their astonishment the fish were still alive. They put it in a cork of different kind of leaves "Am" (*Marantha* sp.) and the fish were soon cooked. But because of curiosity they put in the first cork and replaced the bamboo on the fire, instead of being cooked to a curry, the fish came to life again. So the brothers realised that there was some wonderful virtue in these leaves and carefully marked the plant from which they had picked them. Whenever any of their clan (Tsudir Clan) fell ill they used to put some of these leaves on the head of sick person, and he immediately recovered. Later the Tsudir clan grew so big and

powerful that the other clans determined to massacre all the men leaving only women and girls.

(4) The story of sungwar (Ao folklore)

There once lived a rich man whose beautiful daughter was in love with a handsome young man. The youth visits her only at night time in the girls dormitory but was never to be seen in the day time. The girl, being curious to know looked for him every day but in vain. So she narrated the mysterious disappearance of her lover during the day time to her parents. Her father, determined to find out his daughter's lover, kept watch at night outside the girls dormitory and followed him down at down. As he followed him, he saw the young man going straight through the village gate, down to the village spring side without going to the "morung", then a strange transformation took place. His arms turned into branches, hair into leaves, and his ear ornaments into berries and behold ! Instead of a man there was as huge tree of *Ficus glomerata*.

The girl's father decided to cut down this magical tree in broad daylight and sought the help of friends, relatives and clansmen. On the day the tree was to be cut, he gave strict order to his daughter to remain indoors. They chopped and hacked but the tree would not fall. The girl too wanted to see if the tree had fallen, so, she peeped through the hole of the bamboo matted wall. As she was peeping, a small chip of wood came from the tree, though it was quite a good distant away, and hit her through her eyes to her brain, after which only, the tree also

fell down with a crash. So the two lovers died together.

Till this day, it is a taboo for any member of the pongen phratry of the Ao tribe, to sleep on a bed made from the wood of this tree *Ficus glomerata*.

(5) Rangtsung and Salunaro (Ao folklore)

Once upon a time there were two great lovers by the name of Salunaro, a girl (mean beautiful orchid, *Dendrobium densiflorum* locally known as Salunaro) and boy's name is Rangtsung (means *Thysalonia maxima* locally known as Rangtsung). As often happens, they had a quarrel, but once Rangtsung not forgiving her, in his heart plotted to kill her. So, one day he took her to a stream to collect bamboo shoots for pickling and on the way back they had to climb a steep cliff. While negotiating the steep climb, Rangtsung asked her to hold on to the loose ends of his dao belt so that he could pull her up. She did as her faithless lover asked her, and just as they were climbing the steepest part he suddenly cut the ends of the dao belt, so that Salunaro went rolling down the cliff and was killed. Her parents searched and found only her bones all covered with fungus (*Ascaris .sp*) as Rangstung said nothing that had happened, they had no proof, but they knew that Rangstung was responsible for the death of their daughter. So they gathered the fungi and after cooking, served it to Rangstung. After eating this, his stomach swelled up enormously so he went and lay down in the morung veranda. As he was laying down on his back a stick of reed fell from the roof and pierced his stomach and he died.

After this incident, the village was renamed as salula mung (salula = name of the girls, Mung = stay) after the name of the girl. And the reed which pierced Rangstung's stomach is called Rangtsung and it is believed that the redish dent caused by being infected by some disease in the core of the plant is said to be Rangtsung's blood stain.

(6) How the Oak (*Quercus serrata*) got its name (Khiamnungan folklore)

Once, some youth going for hunting, came to a very thick forest. Each and every one of them spread to different directions in search of game except one who followed behind a friend. As they were going, a hard fruit fell on his head giving him much pain and a feeling of warmth. As they did not know the name of the tree as well as the fruit, they named the tree as LAMPAI meaning "warm and hard tree".

(7) Two deaf women (Khiamnungen folklore)

There once lived two deaf women of Thang village who were the best friends. One day they went to the forest for collection of bark fibre of *Urtica palmata*. In order not to encroach upon the other, they looked in different spots for the bark fibre. After collecting some, one of the friend advised the other to put the collected bark fibre on her arms as she might forget. Her deaf friend, thinking that her friend was telling her to put the fibre on the tree, did so and went on in search of more. In this way they spent the whole day - one putting the collected on the tree, the other putting it on her arms.

In the evening when it was time to return home, they meet and found that the friend who collected on her arms had much of the fibre (hemp) while the one who put on trees had very little because she missed her way while coming and could not collect those which she kept on the tree. Thinking that her friend deliberately told her to put her fibre on the tree, she broke their friendship from that day.

(8) Agreement on time for dying (Khiamnungan folklore)

The Khiamnungan believe that their ancestors originated from the bowls of the earth, and after coming out of the bowls of the earth, they had a great conference to decide about the time for dying. There were different opinions and at last they came to a point where they decided and agreed to one of the two suggestions. The first suggestion was that dying time should follow like the falling of leaves of the alder tree (*Alnus nepalensis*). The second suggestion was that it should be like falling of Oak leaves (*Quercus serrata*.)

The people could not come to an agreement. At last an old man said, "if we follow like the leaves of the oak tree there will be no people in the land as leaves of the oak tree sheds their leaves completely in winter and it is only in spring time that new leaves comes up. So if we follow like the oak leave we all will die at the same time and it will be impossible for humans to reproduce like the oak tree". So most of the people accepted and agreed upon the first suggestion. Because the leaves of the alder tree do not fall at the same time but it falls day by day and new leaves comes out before all the old leaves fall down. It

is because of this that, in the land of the Khiamnungan people do not die all at once but some people one day and some on another day like the falling leaves of the alder tree.

(9) Head-hunting (Ao and Sangtam folkore)

It is believed by the Ao tribe of Mokokchung district that man learned the game of head hunting through the ants. According to the folk lore, one day a man saw a bird dropping the berry of an epiphytic plant *Agebetes Satigera*, then a lizard (Sangken) and the red ants (Meriitsu) fought for the berry. The lizard was over come by the ants who cut off its head and carried it off in glory. That is why the ants always have enough food. So also men started taking heads of their enemy which gains a man glory in life and slaves in the next world after death. Bringing enemies' head is believed to bring prosperity to the village in the form of bumper crops, many children and good hunting. Thus head hunting, the practice of which was quite wide spread among the tribes of Nagaland was regarded as a symbol of fertility by all the tribes, although the legends of it's origin may vary from tribe to tribe.

(10) Invention of yeast (Sangtem folklore)

Yeast is extensively used by the Naga tribes for the fermentation of rice beer. The folklore regarding the invention of yeast is almost same among all the tribes with only slight variation. The sangtam version of the folk lore is presented here, and it goes on to relate that, there once were an orphan girl and her brother. One day while they were working the field, the girl

forgot all about her lunch and went for her works, meanwhile her brother waited without food till evening and being starved turned into a Cecada (Lo yang) and his cries turned into the buzzing sound of the insect. The sister realising her mistake returned and beg him to eat the food and changed back into his former form but to no avail. So she left the bundle of rice tied to a Trunk of *Solanum Melongena* and went back to the village. The next day and the day after she saw the bundle still hanging where she left. After few days she got the aroma of the fermented rice. Suspecting that the aroma was coming from the bundle she took it down and opened and truly it was fermented and from that day onwards people learned to make rice bear which is followed till date.

(11) Discovery of *Capsicum* sp. (Chillies)

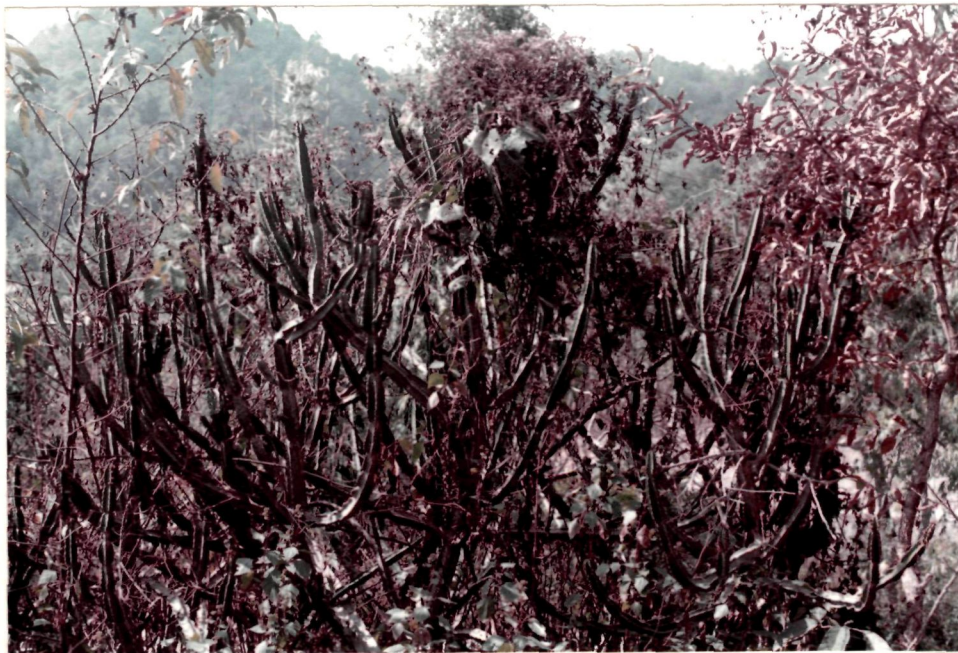
(Sangtam & Yimchunger folklore)

According to the legendary belief of the Yimchunger tribe of Tuensang district, Capsicum was first discovered by two friends in the forest. The two friends, while hunting for game got very hungry that they were tempted to taste and eat the beautiful red chillies. Not knowing the quality of the fruits, they prayed and promised the plant that if they do not come to any harm, they will introduced its cultivation as a food item. One friend, being more cautious only pretended to eat, while the other chewed and ate the chilly. No sooner had he felt the burning sensation then he started chasing his friend thinking that the other was trying to kill him. But later when the burning sensation subsided, he told his friend that the fruits were edible and not

harmful. That's how the *capsicum* was introduced as vegetable in the garden and in the jhum cultivation fields.

The sangtam tribe too have a similar story about the discovery of chillies:- According to their version the chilli~~x~~ was discovered by two brothers of Mongzaro clan while the tribe was staying at a place called Babo. One day Muphi, the elder brother went to collect fire wood when he saw these beautiful red chillies and he chewed it to see what it was like. Immediately he felt hot, naked and thought he was dying. Later, back home, he narrated his experience to his brother.

Next day the other brother went to the forest to taste the same. Like his brother, he too felt that he was dying but he thought that his brother was trying to poison him. So he went after his brother and chopped his head off. Later, he realised his mistake only after the effect of chille had subsided. Therefore to this day, the sangtam believe that same chilli should not be divided to be eaten between brothers as it is believed to bring bad luck and they die in hands of enemies.



Above : *Dracaena elliptica* - locally believed to bring prosperity.

Below : *Euphorbia nirvula* - fertility plant - after head - hunting, heads are hung on these plants.



Above : *Dendrobium* sp. (unidentified) - used as a symbol of unity in marriage ceremony by the Chang tribe.

Below : *Galeola lindleyana* or the devil's flower - plucking its flower is a taboo.



Above : *Maesa indica* in flower - used in ritual rites.

Below : Local medicine man holding a basket of medicinal herbs brought from the jungle.

CHAPTER - VII

DISCUSSION AND PROGNOSIS

DISCUSSION AND PROGNOSIS

'Ethnobotany' deals with the study of the relationship between the aboriginals and the surrounding vegetation. The significance of such studies has been realised mainly in respect of the varied uses of the plants amongst the primitive human societies in interior villages. Such studies can bring to light, informations on numerous uses of different plants which were passed on from generation to generation only through oral folklores and many a time kept secret.

The present work is a modest attempt to bring to the attention:- the significant uses and values of plant wealth of Mokokchung and Tuensang districts of Nagaland; the increasing loss of these plant resources due to urbanization, developmental activities, modernization and habitat destruction; the continuing disruption, religious weakening and loss of indigenous culture, the key to find out such plant resources.

In study area varied topography - high ridges of steep hills, separated from one another by deep valleys, the altitude range from about 100 m to the highest peak in Nagaland i.e. Saramati attaining a height of 3841 m and climatic conditions have resulted in diverse ecological niches. These factors are influencing the growth of various types of vegetation and forests. Due to these diversity of physical features and climate, etc, the vegetation right from the foot hills upto timber line (snow line) comprises of tropical, subtropical broad leaved and pine, temperate broad leaved as well as conifer, and

of alpine nature. Added to these there are secondary forests including bamboo forests, grasslands and degraded forests. These diverse type of forests harbour numerous herbal and food plants.

The study area is inhabited mainly by tribal people. These people have an integrated life with surrounding vegetation and forest plants. They have immense knowledge about various uses of plants in their day to-day life. These plants come into their life as medicinal and poisonous plants, food plants, fodder and fuel plants, different forest produce, and plants used for rituals and ceremonial function.

In present study 368 plants have been enumerated. It has been noted that over 253 plants are used in various ailments as herbal medicines, 77 species as vegetable and about 64 species as edible fruits plants. Plants plant parts eaten by these tribes can be grouped into : (i) whole plant, (ii) underground parts (Rhizomes/Tubers), (iii) Shoots, (iv) young leaves (v) Flower/Flower buds, (vi) Fruits and (vii) seeds or grains. The availability of these plants vary from season to season. But with the knowledge of various uses of the plants one can survive amidst the forests. The demand of human body of carbohydrates, proteins, vitamins and minerals can be met from these plant sources. The carbohydrates from cereals, tubers and rhizomes; proteins from pods, legumes and nuts; vitamins and minerals from green leafy vegetables, flowers and fruits can be met. These plant or plant parts could be preserved, pickled or eaten fresh, cooked or raw.

Apart from edible plants or plant parts these serve as herbal medicines to cure various ailments. Most of the traditional uses are recorded for the first time, while some of the plants listed have established medicinal and other properties. However, in some cases the uses are also found to cure ailments different than the earlier reported ones. The chemical constituents wherever available have been provided for important plants. However, in some important plants chemical screening, efficacy as well as nutritional food value have been suggested to be carried out.

The Naga people recognise the need to preserve the natural plant resources in order to maintain their survival vis a vis forest system in which they live. These forests are some of the remnants of climax vegetation survived possibly because of folk taboos. A large number of medicinal, wild edible fruits and vegetables and horticulturally important rare plants are confined to these traditionally preserved forest through their folk practices and taboos. However, due to the intrusion of modern culture and with the weakening of the religious structure and thereby beliefs, the folk practices are being forgotten. The very idea, and the existence of these forests are under threat.

In present study some of the uses of different plants dealt are helpful in providing clues to various aspects like ethnic migration and sociocultural diffusion. For example wide spread practice of fermentation process for preparing special delicacies and love for bamboo shoots as a very popular food item of these Nagas. This indicates close cultural affinities with the tribes

of South East Asia, Oceania, particularly the Dyaks, Kayans and Battaks of Sumatra and some tribes of Phillipines and Formosa. This is just only one example many such examples can be mentioned which are parallel with the practices and customs of one or the other tribes of South East Asia and Oceania. Another instance of cultural affinity with them is residence on hill top with a crude form of agriculture.

The traditional cultural and nature conservation practices like sacred and community reserve forests, taboos and folk practices observed by these people need to be appreciated scientifically and should be re-employed. Keeping in view of the diverse requirement as these people depend on forests for their various daily requirements of life, the monoculture of forest plantation should be discouraged.

There has been considerable concern about the effect of modernization and developmental activities on tribal life. While implementing any developmental projects in such areas, the age old traditional culture which is fast disappearing must be given due importance. In order to uplift the tribal economy and at the same time. to conserve natural and cultural heritage it is suggested that forest based industries but chiefly on minor forest produce should be encouraged. The cultivation of bamboos, aromatic herbs like members of *Zigiberaceae*, medicinal plants viz. *Clerodendrum* spp., *Costus speciosus*, *Dioscorea* spp., *Mussaenda roxburghii*, *Panax ginseng* and different varieties of *Panax pseudo-ginseng*; wild fruit plants like *Garcinia* spp., *Mangifera sylvatica*, *Mucuna* spp., *Parkia roxburghii*, *Prunus*

nepalensis, *Sterculia* spp., etc. should be taken up as agricultural crops.

Phytochemical screening of more than twenty important species, namely: *Bryopsis glomerulata*, *Chaerophyllum villosum*, *Chloranthus* spp., three species of *Clerodendrum*, *Curculego orchiodes*, *Cyclea peltata*, *Elephantopus scaber*, *Eurya acuminata*, *Gonatanthus pumilus*, *G. ornatus*, *Hedychium* spp., *Herpetospermum pedunculatum*, *Milletia auriculata*, *Mussaenda frondosa*, *M. roxburghii*, *Rubia sikkimensis*, *Stephania glandulifera*, *Thlandiantha calerata*, *Thunbergia coccinea*, *Viscum articulatum*, *Zanthoxylum acanthopodium*, and *Z. oxyphyllum*, is suggested here. After confirming the efficacy, studies on reproductive biology of these plants is also suggested.

Instead should have been attempted

The improvement and breeding programme of bamboos, orchids and other rare, horticulturally and medicinally important plants should be taken-up in Nagaland. Detailed investigation on their domestication and cultivation will prove rewarding. It is suggested to start herbal gardens to study on cultivation, growth and yield, raising of nurseries and large scale plantation of reputed herbal and folk lore plants, like species of *Alpina*, *Clerodendrum*, *Cinnamomum*, *Hedychium*, *Mussaenda*, *Rhododendron*, *Solanum*, *Terminalia*, *Zanthoxylum*, and *Panax*, *Costus speciosus*, *Holarhaena antidysentrica*. These herbal gardens can be set up in different agro-climatic region depending on plant groups whether tropical, temperate and/ or alpine.

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APPENDICES

Appendix I

Definitions of some of the Local Words

Genna It generally means anything which is forbidden by laws of custom. It also refers to a period of confinement following certain events in which an individual, a household or even the whole village is restricted in their activities, food habits and contacts with others.

Chabili These are small, thin strips of iron, about six or seven inches in length. It was used as a medium of exchange in the early days by the Ao Nagas, before the monetary system was introduced in the Naga hills.

Lichaba The word mean "Earth maker" or "Earth walker". *Lichaba* is the chief deity in the heathen worship of the Ao people and is recognised as the supreme ruler of the world, who is believed to appear in human form once or twice a year.

Morung (Dormitory) It is a village guard house which serves as a dormitory in which young men of the village sleeps and who are required to be in readiness to repel any night attack on the village. The building which is larger than the normal dwellings is usually situated in a conspicuous location.

Putir They are the religious priests and spiritual leaders of the village. The putir preside over any religious ceremonies but have no power over civil and military administration. Only the most elderly persons are elected as putir as they are considered the best acquainted and experienced in the social and religious customs.

Sung-kong It is a big hollow tree trunk drum measuring about 30-40 feet in length in a shaped of a long connoc, such long drums when vigorously beaten can be heard a number of Kms. It is beaten to sound an alarm in an emergency or to announce a victory etc.

Appendix II

Basic Data of the Study area (Mokokchung & Tuensang District)

Category	Mokokchung District	Tuensang District	Total
Area	1,615 sq.km.	4,228 sq.km.	5,843 sq.km.
Population (1981 Census)	1,04,193 "	1,52,332 "	2,56,535 "
Population Density	65/km	36/km	
Literacy (1981 Census)	55,40%	23.88%	
Tribes	1 (one)	7 (seven)	8 tribes
Total forest cover area (1984-85)	76,475 ha	1,40,107 ha	2,16,582 ha
Private ownership forests	69,708 ha	1,38,630 ha	2,08,338 ha
Govt. forest	6,767 ha	835 ha	7,602 ha
Wild life sanctuary.	Nill	642 ha	642 ha
Degraded forest	34,035	75,050	1,09,085
Jhum cultivated area (1981)	16,502 ha	38,036 ha	54,538 ha
Wet cultivation area	7,443 ha	3,695 ha	11,138 ha
Irrigated cultivation	1,003 ha	1,885 ha	2,888 ha
Maximum Temperature	36°C (Tuli 1985)	39°C (Sang sangkyu)	
Minimum temperature	10°C (Longkhum)	-5°C (Saramati)	
Average annual rainfall	230 cm.	200 cm.	
Max. Humidity	70% - 90%	80% - 95%	

Some of the plant sp. dealt in study, which are having important chemical properties, recorded from the literature

Acanthopanax gensing C.A. Meyer	-	Polysaccharide
Aconitum episcopale*	-	Delavaconitine (Anesthesia twice as strong as cocaine)
Acorus gramineus Soland.	-	Trans-4-propenyl veratrole (Central nervous system depressant)
Adhatoda vasica Ness	-	Oxytocic
Aristolochia debilis	-	Magnoflorine (hypotensive activity)
Asparagus officinalis Linn.	-	Amino acids, succinamic acid, or aspragine, vitamin B & C and carotene.
Aquilaria agallocha Roxb	-	Essential oil
Areca catechu Linn.	-	Choline, isoquavocine, arecaine, arecaine, arecaine, quavacine, d-catechin, arecaine.
Bauhinia variegata Linn.	-	Gum, tannin and fatty oil.
Berberis aristata DC.	-	Berberine, oxyacanthine umbellatine.
Bergenia ligulata (Wall) Eryl	-	Wax, gallic acid, Tannic acid, glucoside, mucilage, albumen, starch, calcium oxalate, mineral salts, Berganine and leuco- anthocyanoidic galate.

<i>Borreria verticillata</i>	-	Roots contain 0.1% of Alkoloid. Maynart 1980) - two new indole alkoloids - forrerine and foreuerine.
<i>Capsicum annum</i> Linn.	-	Capsicin, capsaicin, solamine.
<i>Cassia alata</i> Linn.	-	Anthraquinones, rhein, chrysophanol, isochrysophanol, physcion, and cassia xanthone.
<i>Centela asiatica</i> (Linn.)urban	-	Glucoside-asiaticoside, essential and fatty oil sitosterol, Tannin and resinous substance. Also hydrocotylin, vallarine, pectic acid, resin and ascorbic acid.
<i>Cephalotaxus furtunei</i> Hook f.*	-	Harringtonine, honoharing-tonine.
<i>Chatharanthus rosues</i>	-	Vincristine, Vinflastine, Vindesine.
<i>Chenopoduim</i> sp.	-	Antiparasitic
<i>Cinnamomum zeylanicum</i> flume.	-	Volatile oil, tannin.
<i>Clerodendron serratum</i> (Linn.)Moon	-	Saponin, D. manitol.
<i>Costus spicous</i> (Koen.ex Retz.) Smith	-	Steriods, saponin and Sapogenins (Diosgenon)
<i>Crotolaria sessiliflora</i>	-	Monocrotaline alkoloid II(30) (Treatment of skin Cancer)
<i>Cucumis melo</i> Linn.	-	Cucurbitacin B & E.
<i>Cucurbita moschata</i>	-	Cucurbitin (LXI)

<i>Curcuma aromaticum</i> Salisb.	-	Volatile oil. Curcumol (XXIX) Curdione (XXX) for cervic cancer.
<i>Cymbiduum giganteum</i> *.	-	Gigantol (bibenzyl compound)
<i>Daphne</i> sp.	-	Daphnetin (Analgesic)
<i>Datura</i> sp.	-	Atropine, hyoscyne hyoscyamine.
<i>Digitalis purpurea</i>	-	Steroidal glycosides/ active constituents of digoxin and digitoxin.
<i>Dioscorea</i> sp.	-	Diosgenin.
<i>Dryopteris filix-mas</i> egg. (fern)	-	Oleoresin, filicinphloroglucinol derivatives.
<i>Entada perseata</i> DC.	-	Leaves contain oleanolic acid and saponins; seeds contain antitumorous saponin prosapogenin and O-(B-D-glucopyranosyl)-L-tyrosine.
<i>Erigeron berviscapus</i>	-	Series of -pyranone compound pyromeconic acid and its glucoside.
<i>Erythrina arborescens</i> Roxb.	-	Alkaloids, hypaphorine, saponin, betaine and choline.
<i>Euphorbia hirta</i> , & <i>pilulifera</i>		Gum, resin, calcium oxylate sugars, mucilage, volatile substances, melissyl, palmetic, oleic, trace of ceryl alcohol. (Alkaloid, taraxerol, bamyren, friedelin and B sitosterol).
<i>Euphorbia nerifolia</i> Linn.	-	Latex contain euphorbon, resin, caoutchouc calcium malate etc.

<i>Fagopyrum cymosum</i>	-	5,7,3',4'-Tetrahydroxyflavane 3 nol C ₄ -C ₈ dimer.
<i>Ficus bengalensis</i> Linn.	-	Triterpene, Fridalin and B-istosterol.
<i>Ficus religiosa</i> Linn.	-	Bark contain caoutchouc & wax.
<i>Gentian lutea</i> Linn.	-	Glycosides - gentio-percrin, gentiamarin, gentun.
<i>Gonanthanthus pumilis</i> (D.Don)	-	Aquaous extract contain IGE anti-body activity.
<i>Holerena Antidysentrica</i> Linn.	-	Alkoloids - Conessine, non- conessine. Conesimine, isoconesimine, kurchine, conimine, conamine, conarrhi- mine, conessidine, conkurchin, holarrhinine, etc. (IPC 135).
<i>Hydychium spicatum</i> (Hanutt)	-	Medium type of antiinflammatory
<i>Hypericum japonicum</i>	-	Total flavonoid (for a acute/ chronic hepatitis).
<i>Houttuynia cordata</i> Thumb.	-	Volatile oil, decanoyl acetal- dehyde (Antimicrofial)
<i>Ilex pubescens</i> *	-	Flavonoids, scopoletin, esculetin etc.
<i>Jatropha curcus</i> Linn.	-	Jatrophone.
<i>Bryophyllum sphenoloba</i> Sallib.	-	Malic acid, quinone and α -tocopherol, alkoloids and saponin.
<i>Loranthus parasiticus</i>	-	Coriamytin, tutin, coriatin (For the treatment of schizophrenia)

<i>Mallotus phillephensis</i> Muell Arg	-	Resins 80% tanic acid, gum, volatile oil, albuminous 7%, colouring matter, cellulose 7% and Ash 4%, Isorottlerin and wax, acetyl aleuritolic acid α -amylin, β -sitosterol. Alcoholic extract gave fergenin.
<i>Mesua ferrea</i> Linn.	-	Flowers contains essential two bitter substances of 10%.
<i>Mikania micrantha</i> H.B and K	-	Sesquiterpine lactone mikanolide
<i>Mimosa pudica</i> Linn.	-	Aminoacid, mimosine.
<i>Moringa olifera</i> Lam	-	Moringine and Moringinene, benil, moringinic acid, athonin and spirochin.
<i>Momordica charantia</i> Linn.	-	Momordicine, Vitamin C, Saponins, 5-hydroxytryptamine, steroidal glucosides, (Sucrow 1965) B-D-glucoside of β -Sistosterol and -5,25-stigmastadien-3- β -ol.
<i>Mucuna purita</i> Hook	-	Muccinene, Mucunadine.
<i>Musa paradisiaca</i> Linn.	-	Fruits contain, sugar starch, albuminoids and vitamin A,B and C, Ash is rich in potash salts.
<i>Nicotiana tobacum</i> Linn.	-	Nicotine.
<i>Ocimum</i> sp.	-	Antimicrobial and anthelmentic, volatile oil.
<i>Panax ginseng</i> C.A. Meyer	-	About 30 - damarane type triterpenoidal glycosides, two types of sapogenin.
<i>Paederia foeteta</i> Lour	-	α -paederine and β -paederine.

Papaver somniferum Linn.*	-	25 Alkaloid/morphine, codeine, thebaine, noscapine, papaverine.
Piper betle Linn.	-	Chavicol, enzymes, terpine, betel phenol & sesquiterpene.
Polygonum sp.	-	Polydatin.
Ricinus communis Linn.	-	Alkaloid resin. Toxin ricin and fixed oil (USD, 238)
Rheum palmatum Linn.	-	Anthraquinone derivatives - Chrysophenol, aloemodin, rhein etc.
Rubia cordifolia Linn.	-	Roots contain munjistin.
Sapindus mukorossi	-	Seeds contain spermicidal.
Semicarpus anacardium Linn.	-	Anacardiac acid cardol, catechol, Anacardol and fixed oil, semecarpol, bhila wariol
Solanum khasianum	-	Solasodine.
Solanum xanthocarpum	-	Hecogenine.
Stephania decembrifera	-	Decentrine (Analgesic & sedative)
Swertia chirata Buch-ham	-	Chiratin, ophelic acid.
Terminalia arjuna W & A	-	<u>Crytalline</u> compd. arjunine
Terminalia chebula Retz.	-	Tanin upto 30%, Chebuliric acid, gallic acid, resin etc.
Thea sinensis Linn*.	-	Caffeine, Tannin thiobromine.

- | | | |
|----------------------------|---|---|
| Zanthoxylum sp. | - | Zanthoxy loides. (<i>p</i> -hydroxybenzoic acid, 2-hydroxymethyl benzoic acid, vanillic acid, & similar benzoic acid derivatives. |
| Zingiber officinale Roscoe | - | Volatile oil, gingerol - terpenoids, (-) zingiferene, (-)- β -sesquiphellandrine, sesquithujene, cis-sesquisabinene hydrate and zingiferenol. |

* Spps. not incorporated in thesis being known and widely used everywhere.

Appendix IV

Glossary of Medical Terms

Arnenarhoea	- Delayed menstruation
Analgesic (anodyne or analgetic)	- Relieving pain
Anthelmintic	- Expelling intestinal worms; vermifuge
Antibiotic	- Naturally occurring substance in very low concentrations, having strong inhibiting or lethal action on pathogenic micro-organisms.
Anticepileptic	- A drug that tends to prevent an epileptic seizure.
Antiparasite	- Destroying parasites like lice, mites, etc.
Antipyretic	- Reducing fever
Antiseptic	- A substance that destroys the pathogenic microbes of fermentation, decomposition or disease.
Antispasmodic	- Relieving sudden pain spasm, especially of smooth muscles (Intestines, uterus etc) or relieving convulsions
A perient	- Laxative
Aphrodisiac	- Sexual Stimulant
Astringent	- Precipitating proteins, Also causes contraction of tissues and stop bleeding.

Bactericide	- An agent which kills or destroys bacteria
Bechic	- Controlling Cough
Cardiae Stimulant	- Stimulating the heart action
Cardiotonic	- Exerting a favourable "tonic" effect on the actions of the heart
Carminative	- Relieving flatulence and aiding digestion, by preventing formation or causing expulsion of gas.
Demulcents	- Soothing substances acting by their covering and protective properties, especially on mucous membranes
Depuration	- Removal of waste products or foul excretions
Diaphoretic	- Causing sweating
Diarrhoea	- Abnormal and frequent discharge of liquid stools from the intestines
Disinfectant	- Substance killing micro-organisms by direct action
Diuretic	- Increasing the volume of urine produced.
Emmenagogue	- Regulating menstruation or stimulating menstrual flow
Emollient	- Topically soothing
Expectorant	- Provoking exphision of sputum; usually administered to treat dry coughs by increasing the production of sputum.
Febrifuge	- Reducing fever, antipyretic

Flatulence	- The presence of an excessive amount of gas in the stomach and intestines
Fungicide	- Destroying Fungi
Haemostatic	- An agent that checks or stops bleeding
Insecticide	- Destroying insects
Laxative	- Mildly purgative
Ophthalmica	- Eye diseases
Peetoral	- Cough remedy, bichie
Purgative	- Causing bowel movement
Spasm	- An uncontrolled and unnatural muscular contraction
Stomachie	- Stimulating appetite
Tonic	- Improving general condition of patient
Vermifuge	- A drug that kills or expels intestinal worms
Vulnerary	- Healing wounds or promoting the healing of wounds.
