

Ethno-medicinal Uses of Animals and Plants among the Migratory Tangbetons of Pokhara, Nepal

Ranju Paudyal¹ and N. B. Singh²

Central Department of Zoology
Tribhuvan University, Kirtipur, Kathmandu

¹Email: paudyalranju@gmail.com

²Email: nanda_nepal@yahoo.com

ABSTRACT

This paper attempts to study various uses of medicinal animals and plants among the migratory Tangbetons of Nepal who were migrated to Pokhara Sub-Metro Politian City from Tangbe Village in Mustang district. Direct observation, questionnaire survey and key informant interview were conducted during the study period. Information about the medicinal plants and animals were given mainly by the Amchi and their information was taken from the elder persons. Finally, this paper recorded 17 medicinal animal species and 60 widely used medicinal plant species for the treatment of various diseases.

Key words: Indigenous knowledge, ethnic group, diseases, species.

INTRODUCTION

Nepal, having 1,47,181 sq.km area is naturally beautiful, varied with biodiversity having Sagaramatha as the highest peak in the world. Plants and animals and their products are the primary source of medicine and highly valued resource of Nepal, especially of the rural area which is dependent on the locally available medicinal animals and plants to cure the disease. These people have specific knowledge for using plants and animals. Ayurveda, Amchi, Naturopathy etc. are important traditional health care systems existing in Nepal. Complementary and Alternative Medicine (CAM) is being increasingly used by consumers to prevent disease and promote health in general. Perception of patients visiting the traditional medicine based centres and the hunger towards more effective service provision by the providers seems to be taking these systems of medicine towards the path of further development. Well recognition and further motivation by the state will help capacitate and strengthen these systems of medicine and garner their proper development in the Nepalese context (Gewali, 2008; Koirala *et al.* 2013).

Nepal is a multi-ethnic, multi-lingual and multi-religious nation with about 126 ethnic groups speaking about 123 dialects (Bista, 1987; Bista, 2004; CBS, 2012). The knowledge system may be different in same ethnic group due to geographical variation. The contribution of biodiversity to the health of the people in the region is extremely important because 80 percent of the people

rely on traditional herbal medicine for their health care. Biodiversity and bio-resources have high affinity in the case of ethnic groups in Nepal (Singh, 1995; Singh, 1997). Lama *et al.* (2001) has published a book on 100 medicinal plants of Dolpa that gave emphasis on Amchis' knowledge and conservation. Tangbetons are the ethnic group having small number of population. Populations of Tangbetons have not been described in any Census of Nepal. So it was difficult to get the exact number of population of Tangbetons in Nepal. There are about 32 households in Tangbe Village, about 100 families in Pokhara, around 25 families in Jomsom, around 20 families in Kathmandu. The estimated studied population of Tangbetons in Pokhara seems to be around 500 by using the average family size of 4.88 per family of Nepal in 2011 (CBS, 2012). However, the total estimated population may be around 1000 in Nepal. Majority of them are mainly found in Pokhara. Indeed, these are the original inhabitants of Tangbe Village that lies in Mustang District. These groups are influenced by the Tibetan Medicine System. So the healers of these groups are known as Amchi, who prepare medicine by the use of available plants and animals. In this context, this paper attempts to explore and then document the various uses of medicinal animals and medicinal plants for the treatment of different diseases found among Tangbetons.

MATERIALS AND METHODS

Pokhara Sub-Metro Politian City is situated in the Kaski district, western development region of Nepal. Prithvi

chowk, Srijana chowk, New road, Mahendrapool and Chipledunga in Pokhara are some of the study areas in which about 100 families of migratory Tangbetons are distributed.



Shorea robusta (Sal), *Bideus pilosa* (Kuro), *Artemisia vulgaris* are the important flora and *Corvus splendens* (Crow), *Panthera pardus* (Common Leopard) are important fauna found in Pokhara. Tangbetons are inhabitants of Mustang district, the important flora found here are *Rhododendron arboreum*, *Arnebia benthamii*, fauna found here are *Capra hircus* (Wild goat), *Bos grunniens* (Yak) *Canis aureus* (Jackal) etc.

This study was conducted from Sept 2010 to April 2011. The interview was mainly taken with a group of Amchis in order to get the knowledge of medicinal animals and plants being used in Tangbetons for decades. Other elderly people were also interviewed with a view to explore and document the indigenous knowledge system found in the Tangbetons. The plants and animals used by the Amchi for the medicinal value were identified mainly by themselves. In our research work, we included two different ways of data collection. Under primary data collection we included the questionnaire survey, key informants interview and field works. Between above

mention time period, we visited the study area many times. We directly observed some of the animals and plants used by Tangbetons, and we also took the photos of those observed animals and plants. These pictures were also used to identify the animals and plants that they are used for medicinal uses. Primary information were compared to that of the available secondary information in order to make the results more reliable and valid. The secondary information were taken from published and unpublished sources such as books, journals, research notes and reports, academic papers, dissertations and theses, etc.

RESULTS

Animal, plant, nature and human beings have intimate association with one another along with the advancement of human civilization which finally led the indigenous people like Tangbetons to know the use of natural resources in a more needy way. Tangbetons had some different type of indigenous knowledge and they even had the knowledge about different medicinal plants and animals and the utilization of those species. Those people do not have their own group traditional healer, so they depend upon the Tibetan Amchi to cure different diseases.

The study showed that they make use of the 60 species of medicinal plants belonging to 40 families and 17 species of animals belonging to 8 orders and 12 families for medicinal purpose. Animal species were used to cure arthritis, thyroidism, diarrhea, over bleeding, etc. Plant species were used for purification of blood, backache, joint pain, B.P, diabetes, common cold etc. This study was based on the migratory Tangbetons found in the some areas of Pokhara, so the people living there use both Traditional and Modern health facilities. The elderly people who come to visit their relatives in Pokhara from Mustang use the medicine from Amchi. Following table shows some medicinal practices among the Tangbeton people.

Table 1. Categorization of animal species used in folk medicine by the migratory Tangbetons of Pokhara Valley

S.N.	Animals	Nepali/Local Name	Organ Used	Medicinal Uses
1	<i>Bos grunniens</i> (Yak)	Chauri/Hya	Horn, Meat, Blood	Heat Body, Digestion, Provides Energy, Heat the Body, Diarrhoea, Fever
2	<i>Capra hircus</i> (Chyangra)	Chyangra/Ramo	Meat	Strength
3	<i>Capra hircus</i> (Goat)	Bakhra/Khasi	Meat	Pain on the Limbs, Heats the body
4	<i>Bos indicus</i> (Cow)	Gai/Memo	Urine	Joint pain, Swelling, Water Deposition inside the joints
5	<i>Ovis ammon hodgsoni</i> (Sheep)	Bhenda/Ghyu	Meat	Rheumatism
6	<i>Moschus Chrisogaster</i> (Deer)	Mirga/Fo	Meat, Fat	Over Bleeding, Menstrual Imbalance, Sinusitis
7	<i>Canis aureus</i> (Jackal)	Syal/Syala	Meat	Rheumatism, Arthritis
8	<i>Panthera tigris</i> (Tiger)	Bagh/Taa	Bone	Body Pain, Energy

9	<i>Columba livia</i> (Pigeon)	Parewa/Dokhen	Stool	Abscess
10	<i>Gyps himalayaensis</i> (Vulture)	Giddha/jyake	Meat	Thyroidism, Heats the Body
11	<i>Apis cerana</i> (Bee)	Mauri	Honey	Cough, Common Cold
12	<i>Periplaneta Americana</i> (Cockroach)	Sangle kira	Whole Body	Severe pain as like Appendicitis
13	<i>Equus hemoionus kiang</i> (Horse)	Ghoda/Ta	Nail	Stiffening of the stomach
14	<i>Equus kiang</i> (Donkey)	Gadha/Bumbu	Blood, Meat, Nail	Joint pain, Diarrhoea, Water Deposition in the Body
15	<i>Rhinoceros unicornis</i> (Rhino)	Gainda	Skin	Makhya
16	<i>Homo sapiens</i> (Human)	Manche/Mhi	Urine	Eye Pain, Conjunctivitis
17	<i>Apodemus gurkha</i> (Mouse)	Musa/Nami	Skin	Abscess

Table 2. Categorizatio of plant species used in folk medicine by the migratory Tangbetons of Pokhara Valley

S.N	Plants	Nepali/Local Name	Parts Used	Medicinal, Uses
1	<i>Justicia adhatoda</i>	Asuro	Seed	Purification of Blood
2	<i>Allium sativum</i>	Lasun/Nho	Bulb	Gastritis, Disorder Sleep, Cancer Disease
3	<i>Acorus calamus</i>	Bojho	Root	Throat Pain, Common Cold
4	<i>Saussurea graminifolia</i>		Whole Part	Kidney Fever, Bile Disorder, Sores
5	<i>Arnebia benthamii</i>	Unknown/ Dimok	Root, Bark	Chronic fever, Swelling, Poisoning
6	<i>Cannabis sativa</i>	Bhang	Seed	Purify Blood
7	<i>Terminalia bellirica</i>	Barro	Fruit	Throat pain, Cough
8	<i>Terminalia chebula</i>	Harro	Fruit	Gastritis, Purification of Blood
9	<i>Brassica campestris</i>	Tori/Nanam	Seed,Leaves	Back ache , Joint Pain, Massage Cream,Thorn
10	<i>Brassica juncea</i>	Rayo/Daf	Leaves	Digestion, Good for Eye
11	<i>Brassica rapa</i>	Salgam/Muli	Root	Digestion
12	<i>Lepidium sativum</i>	Chamsur	Whole Plant	Body Pain, Heat the body
13	<i>Raphanus sativus</i>	Mula/Lhau	Leaves, Root	Gastritis, Digestion
14	<i>Leucartha</i>	Lauka	Fruit	High Blood Pressure
15	<i>Memordica charantia</i>	Karela	Fruit	High Blood Pressure
16	<i>Juniperus squamata</i>	Shuk	Seed,Leaves	Nasal Bleeding, Digestion, Blood disorder
17	<i>Elaeocarpus nerefolia</i>	Rudraskhya	Seed	Water Deposition inside the joints
18	<i>Ephedra gerardiana</i>		Seed, Leaves	Kidney Fever, Cough, Heart Disease, Blood Pressure, Excessive Bleeding
19	<i>Rhododendron arboretum</i>	Gurans/ pathamhendo	Flowr	Remove stuck thorn of Fish
20	<i>Emblia officinalis</i>	Amala	Fruit	Gastritis, Purification of blood, Good for eye
21	<i>Swertia chirayita</i>	Ciraito	Whole plant or Leaves	Fever, Pneumonia, Jaundice
22	<i>Hordeum vulgare</i>	Uva/Karu	Seed	Stone on Gall Bladder
23	<i>Oryza sativa</i>	Dhan/Mrhasin	Seed, Grain	Diabetes, Diarrhoea
24	<i>Saccharum officinarum</i>	Ukhu	Stem	Diarrhoea
25	<i>Cordyceps sinensis</i>	Yarsagumba	Whole Plant	Jaundice
26	<i>Ocimum sanctum</i>	Tulasipatra	Leaves	Good to Kidney, Vitamin, Strength to the body.
27	<i>Dracocephalum tanguticum</i>	Not known/Ti yang ku	Root	Common Cold,Cough
28	<i>Cinnamomum tamala</i>	Tejpat	Leaves	Digestive Disorder, Wind disorder, Kidney Disease
29	<i>Dodecadonia grandiflora</i>	Nepali Dalchini	Stem	Good for Kidney
30	<i>Oxytropis sp.</i>	Tak Sha	Leaves,Flower,Fruits	Gastritis
31	<i>Trigonella foenum</i>	Methi	Seed,Grain	Dysentery,Vomiting, Fever, Cut, Poison, Wound, Sore,
32	<i>Allium wallichii</i>	Jimbu	All part	Sinusistis
33	<i>Aloe barbadensis</i>	Gheukumari	All part except Root	Common Cold, Gasrict, Digestion, Good for eye, Cough
34	<i>Asparagus racemosus</i>	Kurilo	Stem	Burnt Area, High Blood Presssure, Spots on the skin
35	<i>Azadirachta indica</i>	Nim	Leaves	Energetic
36	<i>Ficus bengalensis</i>	Bar	Seed	Fever, Cough
37	<i>Betula utilis</i>	Bhote Pipal	Bark	Dandruff

38	<i>Myristica fragrans</i>	Jaiphal	Seed	Leg Fracture
39	<i>Dactylorhiza hatagirea</i>	Panca angule	Root	Piles
40	<i>Areca catechu</i>	Supari	Fruit	Strength, Vitamin
41	<i>Dolichus biflorus</i>	Gahat	Seed	Good for Kidney
42	<i>Parnassia nubicola</i>	Nirmashi	Seed, Grain	Kidney Stone
43	<i>Seasumum orientale</i>	Til	Seed, Grain	Fever
44	<i>Plantago depressa</i>		Whole Part	Gastritis, Teeth and Eye Problem
45	<i>Pisum sativum</i>	Kerau	Flower	Vomiting, Good for Lymph Fluid
46	<i>Fagopyrum esculentum</i>	Phapar	Seed, Grain	Cure Stomach Pain during Menstruation
47	<i>Punica granatum</i>	Anar	Fruit	Jaundice
48	<i>Prunus persica</i>	Aru	Seed	Gastric, Balances Haemoglobin, Pressure
49	<i>Rosa sericea</i>		flowers, Fruit, Bark	Ear Pain
50	<i>Citrus aurantifolia</i>	Kagati	Fruit	Diarrhoea, Liver disease, Swelling of Stomach
51	<i>Zanthoxylum armatum</i>	Timur	Fruit	Common Cold, Cough
52	<i>Picrorhiza crophulariflora</i>	Kutki	Whole Plant, Root	Gastric, Makes Vocal Cord Good
53	<i>Solanum surattense</i>	Kantakari	Fruit	Fever, Cough, Diarrhoea, Typhoid, Headache, Purification of Blood
54	<i>Carum carvi</i>	Jira/Jiri	Seed	Mental Disorder, Fever, Eyes Problem
55	<i>Coriandrum sativum</i>	Dhaniya	Seed	Common Cold Cough
56	<i>Vitis vinifera</i>	Angur	Fruit	Vomiting
57	<i>Ammomum subulataum</i>	Alainchi	Seed	Cough, Good for Lungs
58	<i>Curcuma longa</i>	Besar	Rhizome	Indigestion, Vomiting
59	<i>Elettaria cardamomum</i>	Sukmel	Fruit	Cut, Wound Parts, Common Cold, Cough
60	<i>Zingiber officinale</i>	Aduwa	Rhizome	Kidney Problem, Throat Pain, Cough, Gastritis, Diabetes

DISCUSSION AND CONCLUSIONS

Although Tangbetons are one of the indigenous ethnic groups of Nepal originally from the Bahra Gaunle, Chhusang village in Mustang district, but their population is not recorded yet in the National Population and Housing Census in Nepal 2011 (CBS, 2012). Those people utilized the natural resources in their area many years before and even today they are practicing their indigenous system in Jomsom, Pokhara, and Kathmandu where they have been migrated. Tangbetons have indigenous knowledge to utilize the plant and animal species for medicinal purposes at local level. This study revealed the utilization of 17 species of medicinal animals and different 60 species of medicinal plants both wild and domesticated by Tangbetons to cure various diseases. The different parts of animals used were horn, bone, meat, blood, gall bladder, fat, brain, skin, nail, urine, stool, hair and whole body for the treatment of different diseases as diarrhea, fever, joint pain, rheumatism, thyroidism, eye pain, swelling etc. Whereas the different parts of plants used were stem, root, fruit, bark or whole part of the plants were used to cure Jaundice, diarrhea, dysentery, typhoid, piles, blood pressure, mental disorder, diabetes, kidney fever, sinusitis etc. The way they used medicine was orally as internal medication and external medication.

The different species of plants and animals reported with their traditional medical therapy in the present research work are also supported by the findings of other

researches for different purposes, like *Aloe barbadensis* is used for the burn, high blood pressure and spots on the skin in the present study. Ghimire (1999), Tamang (2003), and Dhami (2010) reported the same species for digestive disorder, curing cough and the treatment of boil. Present study documented the use of *Terminalia chebula* is for gastritis and purification of blood whereas Pageni (2005) and Dhami (2010) reported the same species for chronic ulcer wound and the treatment of rheumatism. The present study also explored the use of *Cannabis sativa* for the purification of blood whereas Dhami (2010) clearly reported that *Cannabis sativa* was also used for the treatment of rheumatism, arthritis and pain.

Similarly *Zingiber officinale*, *Zanthoxylum armatum*, *Prunus persica*, *Dolichus biflorus*, *Ocimum sativum*, *Acorus calamus* were also supported by the findings of other researchers for similar use (GON 1984 & 1994; Ghimire & Thomas, 2002; Pandey, 2006; Joshi & Joshi 2007). Finally, the utilization of different 60 species of medicinal plants and 17 species of medicinal animals both wild and domesticated was found in Tangbetons to cure various diseases.

Tangbetons depend on Lama for their cultural rites whereas on Amchi for their treatment to various disease. The migratory Tangbetons do not have their own Amchi they depend on the Tibetan Amchi as they are greatly influenced by the Tibetan culture. Most of

them are Buddhist, and avoid sacrificing the animals but Tangbetons feasts and festivals are incomplete without meat.

There are different types of Indigenous Knowledge System found in the Tangbetons. To name few are storage of seeds and food grains, preparation of indigenous drink 'Pa gheun' and 'Pa jhi', preparation and use of materials from locally available resources. These sorts of indigenous knowledge system are transmitted to the young generation of Amchis by verbal communication as well as some documentation in Tibetan language. The Amchi system of treatment of various diseases by the use of medicinal animals and plants is a unique system in the trans-Himalayan range across Northern border of Nepal.

ACKNOWLEDGEMENT

We are highly indebted to Central Department of Zoology, T.U, and Kirtipur for all sorts of cooperation extended during our study period. We are also grateful to the people of the study area who shared their knowledge on medicinal plants and animals, they were Amchi Tenzin Bista, Mahendra Gurung (Tangbe), and Sanyam Tangbe.

REFERENCES

- Bista, D.B. 1987. *People of Nepal*. 5th Edition. Ratna Pustak Bhandar, Kathmandu, Nepal.
- Bista, D.B. 2004. *People of Nepal*. Ratna Pustak Bhandar, Kathmandu, Nepal
- CBS (2012). *National Population and Housing Census 2011*, Volume 01, November, National Planning Commission Secretariat, Kathmandu, Nepal.
- Dhami, G.S. 2010. *Ethnobiology of Pahari: A case study of Badikhel VDC of Lalitpur District*. M.Sc. Thesis, Central Department of Zoology, T.U, Kirtipur Kathmandu, Nepal.
- Gewali, M. B. 2008. *Aspects of Traditional Medicine in Nepal*, Institute of Natural Medicine, University of Toyama, Japan.
- Ghimire, K. 1999. *Ethno-medico-botany of Tharu tribe of Nawalparasi District*. Study report submitted to DNPWC. Ghimire, S.K. and Thomas, Y.A. 2002. *Approaches to In situ Conservation of Threatened Himalayan Medicinal Plants: A Case Study from Shey Phoksundo National Park, Dolpo*. Himalayan Medicinal and Aromatic Plants, Balancing Use and Conservation. Proceedings of the Regional Workshop on wise Practices and Experiential Learning in Conservation and Management of Himalayan Medicinal Plants, Kathmandu, Nepal.
- Government of Nepal (GON) 1984. *Medicinal Plants of Nepal (supplement Volume)*. Bulletin of Department Medicinal Plants No.10 His Majesty's Government of Nepal, Ministry of Forest and Soil Conservation, Kathmandu.
- Government of Nepal (GON) 1994. *Medicinal Plants of Nepal*. Bulletin of Department Medicinal Plants No.3, His Majesty's Government of Nepal, Ministry of Forest and Soil Conservation, Kathmandu.
- Joshi, A.R. and Joshi, K. 2007. *Indigenous Knowledge and Uses of Medicinal Plants by Local Communities of the Kaligandaki Watershed Area, Nepal*. *Journal of Ethnopharmacology*. **73**:175-183.
- Koirala, R.R.; Khaniya, B.N.; Singh, S.P.; Aryal, K.K. and Bhusal, C.L. 2013. *Quality and Effectiveness of Service Provision of Traditional Medicine Based Health Service Centres in Kathmandu, Nepal*. *J Nepal Health Res Counc*. **11(24)**:177-8.
- Lama, Y.C.; Ghimire, S.K. and Thomas, Y.A. 2001. *Medicinal Plants of Dolpo: Amchis' Knowledge and Conservation*. Published by *WWF Nepal Program*, Kathmandu, Nepal.
- Pandey, M.R. 2006. *Use of Medicinal Plants in Traditional Tibetan Therapy System in Upper Mustang, Nepal*. *Our Nature* **4**:69-82.
- Pangeni, N. P. 2005. *Ethnobiology of the Gurungs: A case study of Waling Municipality of Syangja district*. A dissertation submitted to the Central Department of Zoology, Kirtipur, Kathmandu, Nepal.
- Singh, N.B. 1995. *Study on Ethnobiology of Endangered Tribe, the Raute*. A dissertation Submitted to the Central Department of Zoology, Kirtipur, Kathmandu, Nepal.
- Singh, N.B. 1997. *The Endangered Raute Tribe: Ethnobiology and Biodiversity*. GLORECA "ETHNOBIOLOGY" Kathmandu, Nepal.
- Tamang, P. 2009. *Medical Ethnobiology and Indigenous Knowledge System of the Lapcha in Nepal. A case study of Fikkal VDC, Illam District*. M.Sc. Thesis, Central Department of Zoology, T.U, Kirtipur Kathmandu, Nepal.