

**Medico- ethnozoological study of vertebrate animals used  
by traditional healers and Tharu tribes of Devipatan  
division of Uttar Pradesh, India**

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**Abstract**

India has a rich faunal, floral as well as cultural diversity with many tribal communities that are primarily dependent on the traditional and indigenous medicinal system for their primary health care. The documentation and exploration of this traditional medicinal knowledge may help to establish new drugs for human beings. The Medico-ethnozoological survey was conducted from October 2022 to September 2023, based on field observation, analysis and interviews of more than 200 people of 44 villages of the Devipatan division of Uttar Pradesh, India. During the study, interesting information were obtained regarding the medicinal applications of the different parts, organs, secretions and excretions of vertebrate animals being used among Tharu tribes for the cure of fever, muscular pain, rheumatism, weak bones, weak-sight, night-blindness, dysentery, fits, fistula, piles, ulcer, baldness, dandruff, hair fall, ringworm, eczema, measles, leucoderma, tuberculosis (TB), asthma, bronchitis, jaundice, heart diseases, liver trouble, malaria, obesity, diabetes, anaemia, low platelets count, paralysis, impotency, erectile dysfunction, early ejaculation, menstrual irregularities, gonorrhoea, syphilis, tumor, breast cancer and rickets etc. In the present paper, an attempt has been made to document the traditional therapeutic uses of different vertebrate animals among the Tharu tribes of the Devipatan division. The finding provides a veritable source of information for traditional medicinal practitioners, Medico-ethnozoological researchers and also helps in developing strategies for the future conservation of traditional therapeutic knowledge.

**Key words :** Ethnozoology, Devipatan division, Tharu tribes, Vertebrates.

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**E**thnozoology is a branch of biological sciences and has multidimensional significance. It includes both cultural and biological factors involved in the inter-relationship between primitive humans and animals. Information about animals associated in the past with ancient human societies is very poor and is scattered in travelogue gazetteers, forest journals and archaeological records. Ethnozoology also covers the rural and tribal people and their unique knowledge of animal wealth, animal drugs and conservation & domestication of useful and economically important animals.

The medico-ethnozoological system makes considerable use of a large number of drugs of animal origin. These medicines are beneficial or claimed to be so, in a variety of human diseases. The associated society may benefit much from the tribal experiences in its fight against suffering and diseases. However, this system is likely to suffer from drawbacks, pitfalls and pretentiousness, but it is high time to pay more attention to the animals and their medicinal records before eliminated from the area of their occurrence. Although inadequate, attempts have been made to illuminate the medicinal significance of animals and there are few literatures available in India on Medico-ethnozoology<sup>2,7-11,18-20</sup>.

In India, many tribal communities are distributed all over the country and these people are still absolutely dependent on the local traditional medicinal system for their healthcare. Among numerous tribal communities, Tharu is one of the prominent tribes inhabiting in Devipatan division of eastern Uttar Pradesh consisting of Gonda, Bahraich, Shravasti and Balrampur districts, situated in the north-

eastern Terai region of the Indo-Nepal border and commonly known as Terai districts. These districts were surveyed for medico-ethnozoological information of vertebrate animals and data were collected regarding the relationship between tribal peoples and animals, viz. utility of animals in food and medicine. Among these districts of Devipatan division Bahraich, Shravasti and Balrampur districts are richly inhabited by Tharus. Hence the three above mentioned districts have been chosen as study areas.

Tharu tribes use many animal and plant species for healthcare practices and have enormous knowledge about their medicinal usage. The medicinal knowledge of these people is mostly undocumented and it is transmitted orally from generation to generation. Due to various reasons, both natural resources and the Tharu culture of India are depleting at an alarming rate. Therefore, there is an urgent need to explore and document this unique aboriginal and indigenous knowledge of medicine before it is lost forever.

Keeping this in mind, the present study was undertaken to explore the possibilities of utilizing the medico-ethnozoological wealth of this remote Terai region of eastern Uttar Pradesh, India for the search of new sources of medicines from vertebrate animals utilized by Tharu tribes. The animal specimens along with detailed information on the medico-ethnozoology would form a valuable record for future reference and study.

The study was conducted in the Devipatan division of eastern Uttar Pradesh, India, which lies between 26°48' and 29°24' North latitude and 81°30' and 82°40' East

longitude. The division is bounded by the territory of Nepal in the North, by the Basti division (*i.e.* Distt. Basti and Siddhartha Nagar) in the East, by the Ayodhya division (*i.e.* Distt. Ayodhya and Barabanki) in South and the Lucknow division (*i.e.* Distt. Kheri and Sitapur) in West. The Shivalik range of the Himalayas in the North and river Ghaghra in the West & South makes the natural boundary of the division. The division consists of 4 districts namely, Gonda, Balrampur, Bahraich and Shravasti, covering 14229.10 KM<sup>2</sup> and comprises about 4.83% area of Uttar Pradesh.

Information of the Aborigines was collected from the 'District Tribal Welfare Officers' and 'Block Development Officers' regarding their location, strength and social structure. An extensive data sheet was prepared to ascertain the use of animals in food and medicines, their applications, doses and duration. In every district, the same tribes were interviewed from as many localities as possible to get accurate and elaborate information about the animals and their use. Wherever, the language problem arose, the services of interpreters were utilized.

Extensive and intensive survey during October, 2022 to September, 2023 was made in Thruhat (Tharu areas) of Devipatan division covering 30 villages of Balrampur district, 07 villages of Bahraich district and 07 villages of Shravasti district to collect the medico-ethnozoological information. All the medico-ethnozoological information were collected by contacting the local healers called Vaida, Guruwa, Village Headmen, Elder men and elder women who having thorough knowledge of animals and animal-based remedies. Knowledgeable persons were interviewed and

various medico-ethnozoological aspects of each animal were recorded.

During the course medico-ethnozoological exploration of the study area, usual field and museum methods were made. The gathered information was compared with various published literatures. A brief account of the diagnostic characters, nomenclature, clarification of collected specimens and medicinal value are presented in this paper.

After taking interviews with Vaid (Local doctor), Guruwa, village headman (Pradhan), elder men and elder women of 30 Tharu villages of Balrampur district, 07 Tharu villages of Bahraich district and 07 Tharu villages of Shravasti district, the interesting information regarding the medicinal applications of different parts, organs, fluids, secretions and excretions of vertebrate animals are tabulated in the table-1.

Table-1 shows the medicinal use of 21 vertebrate animals, their body parts and secretions/ excretions are used by the Tharus of Devipatan division of Eastern U. P. to treat various ailments. These people used the animals for the treatment of more than 50 ailments/diseases like General weakness, Fever, Muscular pain, Waist pain, Rheumatism, Weak bones, Teething problems, Weak-sight, Night-blindness, Foot Cracks, Dysentery, Fits, Fistula, Piles, Ulcer, Baldness, Dandruff, Hair fall, Ringworm, Eczema, Measles, Leucoderma, Tuberculosis, Asthma, Bronchitis, Whooping cough, Clogged nose, Tonsils, Jaundice, Low/ High blood pressure, Heart Diseases, Liver trouble, Malaria, Obesity, Diabetes, Anaemia, Low platelets count, Paralysis, Impotency, Loss of erectile power, Early ejaculation,

Menstrual irregularities, Gonorrhoea, Syphilis, Loss of Sexual vigour, Agalactia, Tumor, Breast cancer and Rickets.

After collecting data on animal drugs used by many tribal wings in various general and chronic diseases, it can be said that there has been a scientific approach of these people since long back, which can be extended further after pharmacological and biochemical research on the animal drugs. These would be more useful for the poor people. It makes us aware of the need for a much more detailed investigation in this field.

The information collected during the interview revealed that the Tharu tribes used the whole body, body parts, flesh, liver, bile, fat, secretions and excretions of vertebrate animals to treat various human diseases/ailments. In this study, 21 vertebrate animals were identified that believed to be cure/prevention of more than 50 diseases/ailments. Other studies reported in India showed that approximately 44 different animal species were used for the treatment of 40 different ailments among traditional healers and indigenous inhabitants in the adjoining area of Gibbon Wild Life Sanctuary, Assam<sup>9</sup>. Approximately 36 vertebrate species were used for medicinal purposes by members of Nyishi and Galo tribes in Arunachal Pradesh<sup>10</sup>. Twenty four animal species were used to treat over 35 kinds of ailments/ diseases by the Garasiya people of Rajasthan<sup>15</sup>. Nine animals were used to treat 35 ailments/ diseases by Tharu tribes of the Devipatan division of eastern Uttar Pradesh<sup>2</sup>. Whiting *et. al.*,<sup>21</sup> identified 147 vertebrate

species. Out of these 60 mammals, 33 reptiles, 53 birds and 1 amphibian species were used for the treatment of different human ailments in South Africa. The study conducted by Haileselese showed that 23 animals and/ or their parts were used in traditional medicine by Degu tribes in the Tigray region, North Ethiopia<sup>12</sup>. Yirga *et. al.*,<sup>22</sup> also reported 16 animal species that were used for treating 18 different human ailments in the Kafta- Humera district, Northern Ethiopia. ; Kendie *et. al.*,<sup>16</sup> identified 51 animal species to treat 36 different human ailments/ diseases among the indigenous people of Metema Woreda, North-Western Ethiopia. Abebe *et. al.*,<sup>1</sup> also reported 25 animal species and their products used by traditional medicinal practitioners and indigenous people for the treatment of 38 kinds of human ailments in Motta City and Hulet Eju Enessie District, Northwest Ethiopia.

In this study, Tharu tribes used the flesh/liver/bile/fat/whole body of the 5 fish species to treat the various human ailments viz. General weakness, loss of erectile power, loss of sexual power, anaemia, diabetes, gastric ulcers, night blindness, tuberculosis, whooping cough, fever, bronchitis and malaria. The use of the whole body, body parts and byproducts of fishes were also used as drugs to treat different diseases by different ethnic groups of different geographical regions of the world<sup>4,9,13,14,16</sup>. Tharu tribes were found to use different parts/secretions of Frogs in the treatment of skin diseases, cracked feet, jaundice, fatty liver and piles. The flesh/ blood/ mucus of Amphibians was used in the treatment of asthma, pneumonia, skin diseases and loss of consciousness by different ethnic communities<sup>1,6,9,11</sup>.

Table-1. Medicinal uses of some vertebrate animals by Tharu tribes of the Devipatan division of eastern Uttar Pradesh, India

S. N.	Name of Animal	Local Name	Part(s) Used	Mode of Administration	Name of disease/ Ailments
1	<b>Sal</b> ( <i>Channa marulius</i> ) (F. Hamulton, 1822)	Saur	Flesh	Cooked with light spices and take twice daily for	Tuberculosis, Diabetes and
			Whole Body	3 weeks Soup mixed with powdered chilli and black pepper and drunk once daily, for about 1 week	General weakness Malaria
2.	<b>Perches</b> ( <i>Anabas testudineus</i> ) (Bloch, 1792)	Somha/ Somhada	Whole body/Flesh	Cooked with light spices and consumed twice daily for about 4 weeks	Tuberculosis, General debility, Anaemia
			Fat	Warmed massaged externally twice daily for about 3 weeks	Facial Paralysis
3.	<b>Bhakur</b> ( <i>Catla catla</i> ) (Hamilton, 1822)	Bhakur	Flesh	Cooked with light spices and consumed 2 times daily for about 4 weeks	Bronchitis, Whooping cough, General debility, Loss of sexual vigour
			Bile	A few drops of bile diluted in one glass of water and drunk in an empty stomach daily for about one month	Gastric ulcers, Worms
			Liver	Boiled in water, soup mixed with powdered black pepper, chillies, salt and drunk, the remainder cooked and eaten for about 4 weeks	Night-blindness
4.	<b>Rohu</b> ( <i>Labeo rohita</i> ) F. Hamilton, 1822	Rohu	Fat	Oil extracted from the body and massaged on lumbo-sacral region for about 4 weeks, once at bed time	Loss of erectile power
			Bile	Applied on forehead twice daily, for about one week	High fever
			Flesh	Cooked with light spices, consumed twice daily for about 3 weeks	General weakness, Loss of sexual vigour, Night blindness

5.	<b>Mangur</b> ( <i>Clarias batrachus</i> ) Linnaeus, 1758	Mangur	Flesh	Cooked and consumed twice daily for about 4 weeks	Agalactia (Poor lactation), Tuberculosis
			Fat	Oil was extracted and applied to the eyes twice daily for about one week	Eye- ailments
			Whole body	Dried, powdered and mixed with honey and Applied over the gums of the baby once daily, for about 2 weeks	Teething Problem
6.	<b>Frog</b> ( <i>Rana tigrina</i> ) Daudin, 1802	Megha	Skin	Fresh skin removed and wrapped over the affected site 6-7 times for 2 weeks	Ringworm, Skin diseases
			Bile	8-10 drops of bile diluted in a glass of water and taken orally in an empty stomach, once daily for about 3 weeks	Fatty Liver, Jaundice
				Warmed with bee wax and applied externally twice daily for about 2 weeks	Cracked foot, Piles
			Fat	Warmed and applied on the affected sites for about 4 weeks	Eczema, Abscess, Skin diseases
7.	<b>Sand Lizard</b> ( <i>Uromastyx</i> sp.) Merrem, 1820	Sanda		Oil extracted and rubbed on lumbo-sacral region at bed time for about 8 weeks	Impotency
			Fat	Warmed with mustard oil and applied externally twice daily for about 4 weeks	Paralysis, Sprain, Rickets, Ribs pain
				Warmed and applied externally once daily, for about 6 weeks	Dandruff, Baldness, Eczema
			Faeces	Burn, powdered and mixed with kajal and applied on eyes for about 2 weeks	Eye-ailments
8.	<b>Tortoise</b> (Not Specific)	Kachhuwa	Carapace	Powdered, mixed with mustard oil and applied externally once daily till disease cured	Fistula, Foot crack, Rickets
			Fat	Warmed and applied externally for about 4 weeks	Paralysis, Rheumatism

9.	<b>Cobra</b> ( <i>Naja naja</i> ) Linnaeus, 1758	Naag/ Fetara	Fat	Warmed and applied externally over affected sites till disease cured	Muscular pain, Joint-pain, Paralysis Rheumatism
				Warm and massaged on the phallus at bed time for about 6 weeks	Loss of erectile power
			Bones	Dried, powdered mixed with honey and applied to the eyes at bed time for about 2 weeks	Eye-ailments
10.	<b>Python</b> (Not Specific)	Ajgar	Scales	Dried, powdered, mixed with honey and given once daily for about 6 weeks	Menstrual irregularities, Loss of sexual vigour
			Fat	Warmed and applied externally twice daily till the disease is cured	Wound, Cuts, Vitiligo
			Liver	Dried, powdered, mixed in water and given orally, twice daily for about 4 weeks	Night blindness
11.	<b>Pigeon</b> ( <i>Columba livia</i> ) Gmelin, J.F. 1789	Kabutar	Blood	Fresh blood applied to the affected sites for about 4 weeks	Paralysis
			Flesh	Cooked and consumed once daily for about 3 weeks	General weakness, Asthma, Tuberculosis
				Warmed and massaged on the chest of babies twice daily, till the disease cured	Pneumonia, Breathing trouble
			Fat	Warmed and massaged on lumbo-sacral region once daily at bed time	Loss of sexual vigour
12.	<b>Fowl</b> ( <i>Gallus</i> Sp.) Linnaeus, 1758	Murga	Flesh	Cooked with light spices, consumed once daily for about 2 weeks	General weakness, Loss of sexual vigour, Agalactia (Poor lactation)
			Gizzard	Dried, powdered and given with water orally, once daily for about 3-5 days	Dysentery
			Blood	Fresh blood applied to the affected sites once daily for about 3 weeks	Skin diseases, Measles
			Fat	Warmed and massaged on affected sites, twice daily till the disease is cured	Internal injury, Weak bone, Joint-pain, Paralysis

13.	<b>Duck</b> (Not Specific)	Battakh	Flesh	Cooked with light spices and consumed twice daily for about 4 weeks	General weakness, loss of sexual vigor, Asthma, Bronchitis, Tuberculosis
			Blood	Fresh blood is applied to affected parts twice daily till the disease is cured	Measles
			Fat	Warmed and massaged on the chest of babies 3-4 times daily till the disease cured	Pneumonia, Chest pain
				Warmed and Massaged on the general body surface, twice daily for about 6 weeks	Weak bone, Joint pain, Paralysis
			Egg	Yolk was applied on the chest of infants and covered with Tendu leaf	Pneumonia
14.	<b>Darter</b> ( <i>Anhinga rufa</i> ) Daudin, 1802	Jalkagi	Flesh	Cooked and consumed by lactating women once daily, for about 4-6 weeks	Agalactia (Poor lactation)
				Cooked with light spices, soup is drunk and flesh consumed once daily for about 3- 4 weeks	General weakness, Loss of sexual vigour
			Fat	Warmed and applied on lumbo-sacral region at bed time for about 3-4 weeks	Impotency, Loss of sexual vigour
				Warmed, mixed with bee wax and applied externally twice daily for about 3-4 weeks	Cracked Foot, Piles
Warmed and massaged externally twice daily for about 2 weeks	Muscular pain				
15.	<b>Cow</b> ( <i>Bos indicus</i> ) Linnaeus, 1758	Gai/ Gau	Milk	5 gm Turmeric powder mixed in one glass of lukewarm cow milk, once daily for about 4 weeks	Immunity booster, Heart diseases, Weak bones General weakness
			Ghee	Warmed and applied on affected parts, twice daily till the disease is cured	Dull Skin, Skin diseases, Cuts, Wounds
				Warmed and applied one drop in each nostril, twice daily	Clogged nose, Fever



	<b>Cow</b> ( <i>Bos indicus</i> ) Linnaeus, 1758	Gai	Urine (Gomutra)	Mixed 5-6 drops of urine in one glass of water and taken orally, once morning regularly	Age stabilizer, Asthma, Obesity, Diabetes
				5 ml. urine, 10 gm. Honey, 5 gm turmeric mixed in 500 ml water, boil and gargled, thrice daily till disease is cured	Sore throats, Tonsils
				Turmeric powder mixed with cow urine makes a paste and applied on the affected parts till the disease is cured	Eczema, Skin diseases
			Urine (Gomutra)	8-10 drops cow urine mixed in one glass of water and soaked 5 gm 'Triphala' overnight, filtered and drunk 6-8 weeks	Ulcer, Liver diseases, Obesity, High Blood Pressure, Anaemia
			Dung	Fresh dung was applied to affected parts once daily for about one week	Cuts, Injury, Wounds
			Fresh dung was applied on the scalp once daily	Head-boils	
16.	<b>Dog</b> ( <i>Canis familiaris</i> ) Linnaeus, 1758	Kukkur	Saliva	Take fresh saliva and applied externally over the affected sites, twice daily for about 2 weeks	Gonorrhoea, Syphilis,
	Fat		Warmed and massaged, twice daily for about 2 weeks	Piles, Ribs pain, Waist pain, Paralysis	
17.	<b>Goat</b> ( <i>Capra</i> Sp.) Linnaeus, 1758	Bakari/ Chhagadi	Milk	Taken orally along with Papaya leaf in the morning for about 4 weeks	Low platelets count, Blood diseases
				One glass fresh milk taken orally till the disease is cured	Tuberculosis, General weakness
				Fresh milk dropped in the eyes 2-3 times daily for about one week	Eye trouble
			Liver	Cooked with light spices and taken twice daily for about 4 weeks	Night-blindness, Jaundice, Weak sight
			Brain	Boiled in water with black pepper and salt, soup is drunk and remains cooked in light spices and consumed, once daily for about 4 weeks	Tuberculosis, Whooping cough, Asthma, Weak memory

			Urine	Fresh urine applied externally twice a day till the disease is cured	Skin diseases
18.	<b>Porcupine</b> ( <i>Hyrix indica</i> ) Kerr, 1792	Shahi	Spines	Powdered, mixed with mustard oil and applied externally on the affected parts twice daily till the disease is cured	Cuts, Wounds
			Intestine	Dried powdered, mixed with water and given orally, once at morning morning till the disease is cured	Abdominal pain, Dysentery, Ulcers, Diabetes
			Fat	Applied in the eyes regularly, once daily for about one week	Weak sight, Night blindness
19.	<b>Pig</b> ( <i>Sus scrofa</i> ) Linnaeus, 1758	Suar	Fat	Warmed and massaged once daily, till the disease is cured	Muscular pain, Internal injury, Paralysis, Neurotic fits, Rheumatism
				Warmed and applied externally, once daily, for about 3-4 weeks	Cracked foot, Piles, Skin diseases
			Bile	Applied on forehead, once daily, for about 2 weeks	Hypertension, Fever
			Urine	Filtered and mixed in one glass of water and taken daily in the morning, for about 4 weeks	Neurotic Fits
20.	<b>Antelope</b> ( <i>Antilo</i> Sp.) Pallas, 1766	Hiran/ Mriga	Horn	A piece of horn crushed, powdered and mixed in turmeric powder and applied on affected parts, twice daily till the disease is cured	Fistula, 'Nasoor', Deep wounds
				Warmed with mustard oil and mixed turmeric powder, applied externally, twice daily for about one week	Muscular pain, Waist pain, Internal injury, Cuts, Boils
			Fat	Warmed and massaged on lumbo-sacral region, once daily at bed time for about 6 weeks	Loss of erectile power
			Tusk	Powdered, mixed with mustard oil and applied externally twice daily, till the disease is cured	Leucoderma, Skin diseases,
21.	<b>Elephant</b> ( <i>Elaphus maximus</i> ) Cuvier, 1798	Haathi	Dung	Fresh dung applied externally till the disease is cured	Cuts, Wounds, Skin diseases

The information obtained from the Tharu community revealed that they used the different parts of 4 reptiles in the treatment of impotency, menstrual irregularities, loss of sexual vigour, night blindness, eye troubles, paralysis, rickets, muscular pain, joint pain, rheumatism, fistula, dandruff, baldness and eczema. Kendie *et al.*<sup>16</sup> reported that the shell of Tortoise was used in the treatment of Trypanosomiasis and nose bleeding. Meat, tail and bones of Python were used to treat cancer, rabies and swelling<sup>16</sup>. Flesh, bile and gall bladder of reptiles were used in the treatment of tonsils, snake bite, body pain and skin diseases<sup>9</sup>.

Tharu tribes used the parts/ products of 4 bird species in the treatment of general weakness, asthma, pneumonia, breathing troubles, tuberculosis, impotency, skin diseases, measles, joint pains, paralysis and chest pain. Similarly, the study conducted by Jaroli *et al.*, showed that the blood of pigeons used to treat paralysis<sup>15</sup>. Flesh and Eggs of Hens, Pigeon, Duck and Ostrich were used in the treatment of tuberculosis, muscular pain, mental disorders, heart failure and paralysis<sup>16</sup>. The flesh, eggs and egg shell of Fowl, Partridge were used to treat bone fracture, kidney disease, cough and burns<sup>1</sup>.

The traditional healers and Tharu tribes used the flesh, milk, blood, bile and urine/ dung of 7 mammals to treat heart disease, hypertension, diabetes, skin diseases, ulcers, piles, fistula, general weakness, weak bones, waist pain, paralysis, blood diseases, low platelets count, tuberculosis (TB), night blindness, weak sight, loss of erectile power, gonorrhoea and syphilis. The study conducted

in the semi arid region of Northeastern Brazil also reported mammals as the most commonly used class of medicinal species<sup>5</sup>. Similarly, Kendie *et al.*<sup>16</sup> have documented the milk of Goats used in the treatment of tuberculosis (TB), general weakness & eye diseases and tusk of Elephants used in skin diseases. Alimentary canal of Porcupines used in the treatment of diarrhea, diabetes, cough and cold<sup>16,17</sup>. Borah *et al.*<sup>9</sup>, reported that the horn of Deer used to treat piles, the alimentary canal of Porcupines used in pre-menstrual pain, milk of Cow used to treat chronic dysentery and skin diseases. Haileselese<sup>12</sup> reported that the flesh, milk, blood and antlers of mammals were used to treat cough, asthma, tuberculosis, weakness and muscular pain. Garasiya people used the cooked flesh of the Bat to treat the cough and fever, the urine of the Cow for wound healing and the flesh of the Pig to relieve muscular pain<sup>15</sup>.

This study showed that traditional medicines were administered by eating, drinking, tying, fumigation and massaging. The majority of the remedy preparations did not have additive substance while the remaining had natural additive substances like sugar, salt, spices, honey, oil and water. So, there are no side effects of such traditional animal drugs. A rich wealth of such drugs is available in India which can be used in the treatment and to cure the chronic diseases prevalent among tribe races<sup>8</sup>.

The finding indicates that medico-ethnozoological practices play an important role in the primary health care system among the Tharu tribal people of the Devipatan division of Eastern Uttar Pradesh, India. On the basis

of information collected during the interview it come to know that the tribal people believed in sustainable use of natural resources, but due to deforestation and over exploitation of animals by modern man, the medicinal animals and natural resources depleting at alarming rates. Further, due to the death of local healers (Vaid), elder persons and rapid modernization, traditional medicinal knowledge is getting lost. Thus, the documentation of this traditional zootherapeutic knowledge should be helpful in making strategies for sustainable management and conservation of medicinal animals as well as providing potentialities for proper utilization and discoveries of animal based drugs.

The result shows that vertebrate animals and their parts/ products used as traditional medicine to treat different ailments by Tharu tribes. Although the local healers and tribal people are skilled in the preparation and administration of animal based remedies, less effort has been made to conserve the medicinal animals. Therefore the tribal people of this area should be alerted to the significance of biodiversity and the sustainable use of animals as a source of indigenous medicines. Traditional knowledge is not only significant for its pharmacological value but also related to different cultural beliefs and sentiments of the tribal and indigenous people. However, efforts to document, conserve and manage the indigenous therapeutic knowledge and skill were very scarce and this indigenous therapeutic knowledge getting lost together with the elders and local healers. Hence, it is important to investigate further for the betterment of tribal people on the one hand and to document, conserve, and manage the traditional therapeutic knowledge on the other hand. The above mentioned information suggests that if the

animal kingdom is scientifically explored, may have much to contribute to our therapeutic information. This may also help in a better understanding of ethnozoological medicine, its interrelationship with the socioeconomic and ecological values of the region and the sustainable use of animal resources.

The author is very much grateful to the local healers (Vaid), village headmen (Pradhan) and other elder persons of the Tharu belt of Devipatan division, Uttar Pradesh for sharing their traditional zootherapeutic knowledge.

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