

## **Medicinal uses of animals as an important element of the traditional knowledge of the Wancho tribe of Arunachal Pradesh, India**

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### **Abstract**

In almost every human community, animals have been used as medicinal resources for the prevention and relief of several diseases. While considered by many to be superstition, the importance of conventional animal-based medicine can't be ignored, because pharmaceutical companies have been methodically tested it as a source of drugs for modern medical science. The present study aims to explain the traditional knowledge of the Wancho people of Arunachal Pradesh towards the medicinal uses of animals and their parts. The ethnozoological data has been collected from 21 traditional healers and some local people who have experiences with the medicinal uses of animals. A total of 18 species of medical animals were collected and identified for treating numbers of human ailments, of which 37% are birds and their products, 26% are mammals and the remaining 21 % are insects features. They use these traditional medicines as a remedies of stomach aches, joint pain, headaches, cough, etc. The Wancho tribe of Longding district of Arunachal Pradesh, who still live in remote villages with limited modern medical facilities used various animal species located in their immediate surroundings and some remote areas to treat their diseases and improve their health. However, overexploitation of the animals they use threatens the survival of certain species and create habitat imbalances that influence the region's humans and animals.

**T**raditional knowledge has been used by indigenous and local communities under local laws, traditions, and customs and has been transmitted and developed from generation to generation<sup>4</sup>. On other hand, it is a cumulative body of awareness and understanding of

practices and beliefs held by local communities<sup>12</sup>. Traditional knowledge is a chief component of the daily life of millions of indigenous people in developing countries. It is essential to the identity of most of the local tribes and key constituents of a community's social as well as physical environment, and as such, it is very important to preserve it<sup>7</sup>. Using animals for different purposes such as medicine, food, craft, hunting, trade, and other socio-cultural practices is an important element of the traditional knowledge of several tribes around the world<sup>2</sup>. In developing countries, the traditional medicines assist the health requirements of a vast majority of people of the remote area, where modern health care services, as well as medicines, is limited due to economic and other reasons.

A widespread practice in traditional medicine is the use of a complete range of natural resources such as animals, plants, and inorganic components of minerals. Animals and items extracted from their organs have been part of the inventory of medicinal substances used since ancient times in various cultures<sup>1</sup>. The healing of human ailments by using therapeutic based medicines obtained from animals or ultimately are derived from them is popularly known as zootherapy<sup>5</sup>. In modern societies, it is an important alternative, among many other well-known therapies practices worldwide. The WHO stresses that a large number of the world population rely primarily on animal and plant-based medicine and it is widely recognized that in many low-income countries, traditional medicine remains the most available and affordable form of treatment. The Wancho people of Arunachal Pradesh use various animals as well as their parts for

medicinal purposes. Both the domestic and wild animals and their by-products such as skin, bones, meat, blood, etc. are used in protective, preventive, and curative contexts as part of decorations and portions to treat patients suffering from a variety of health conditions<sup>3,7</sup>.

The Wancho is an indigenous tribe inhabiting the Patkai hills of Longding district of Arunachal Pradesh. They have rich ethnic and cultural entities related to the Nocte of Arunachal Pradesh and Konyak of Nagaland. Owing to the large and diverse geographical features of the state, the tribe has inherited rich and complex social norms, culture, beliefs, and practices. They make use of animals and their products for the treatment of several common diseases and ailments<sup>7</sup>. In the present study, we assess the uses of the major animals and their parts to making some traditional medicines by Wancho people of the state. Furthermore, provide a wider and critical discussion on conservation biology as well as the sustainable use of the species.

#### *Study site :*

Arunachal Pradesh is the largest state of North-East India which is considered a global biodiversity hotspot<sup>10</sup> with enormous ecological and geographical diversity. The Longding district is one of the major administrative districts of the state which carved out of the south-western portion of the Tirap district in 2012. The latitudinal extension of the district is 27°01' N and 27°13' N and the longitudinal extension is 95°16' E and 95°20' E. The district is bordered by Nagaland in the west, Assam in the north, Myanmar in the

south, and Tirap district of Arunachal Pradesh in the east. Located at the Himalayan range of Arunachal Pradesh, the district has vegetation ranges from tropical mixed and broadleaf evergreen forest to the alpine meadow and scrubs types, across elevation gradient<sup>11</sup>. As per census 2011, the total population of the district is about 56,953 with a literacy rate of 68.50%. Longding district is mostly inhabited by Wancho people which is the third-largest tribe of Arunachal Pradesh<sup>9</sup>. They lived in 41 villages of the six revenue circle of the district viz. Longding, Kanubari, Wakka, Pongchou, Pumao, and Lawnu. This tribal community is known for its vibrant indigenous cultural heritage and social norms, customs, beliefs as well as practices. The society, being adherents of animism, was mostly engrossed by the myths, superstitions, tattoo customs, and rituals. They still practice traditional gun making, bead making, and woodcarving and depend on forest and forest base resources for their livelihood. The people also practice slash and burn cultivation in a mountain terrain which is popularly known as 'Jhum cultivation'.

An extensive field survey was conducted in February 2020, to acquiring information about the medicinal animal and their product used in traditional medicines. The data regarding the local name of the animals, method of preparation, etc. were collected through the semi-structural interview with 21 randomly selected traditional healers who belong from Wancho tribes of Loading district of Arunachal Pradesh and has the experience, recognized as experts and knowledge concerning traditional medicines<sup>14</sup>. Moreover, to gathering information regarding the study, we

interact with the head of 20 to 40 households of 7 villages of the district and discussed for about 1-2 hours. The head of the family was chosen as a respondent because of their status, knowledge, and experience with the medicational use of their surrounding environment. Generally, we asked them whether they use animals in the healing practices and which animal remedies have been prescribed for which particular ailment. Moreover, also discussed the mode of preparation of these remedies and how the medicines are administrated since this kind of information indicates how a given medicine can be therapeutically efficient in terms of the right ingredients, the proper dose, and the right length of preparation<sup>8</sup>. All data acquiring from interviews were recorded and documented properly and the animal species were identified by using relevant and standard literature.

The result of the traditional knowledge of Wancho people with their uses of various animals and their parts in the various treatments of diseases affecting humans and livestock are summerize in Table-1. Total of 18 species of medicinal animals were identified from the study site (see Table-1) which are used to treating various human ailments among them. The whole body or more often portions of the body of an animal have been used to treat various ailments. Wnacho uses bone marrow of *Buceros bicornis*, *Aceros nepalensis*, *A. undulatus* *Anthracoceros albirostris*, to treating muscular strain, sprain, and bruises; fractures of body. The wings and feathers of *Gallus* sp. are burned and the ash is applied as a remedy for allergy. The flesh of *Columba livia* is used as an energy booster for humans. They used three different types

of mammals for different purposes. For example, *Ursusthibetanus* for stomach ache, and heartburn, *Melusrus ursinus* for delivery pain, *Hystrix sp.* for stomach ache and malaria, the flesh of *Cynopterus sphinx* for Asthma, coughs and colds, and *Canis lupus familiaris* for Dysentery, and diarrhea. *Mastacembelus armatus* is used as medicine for Cuts, burns, boils, and many skin related problems and its blood is used as an energy booster. Different types of insects such as *Melamphausgray*, *Apis cerana*, and *Apis mellifera* are used for cough. *Pheretima sp* is used by Wancho to protect against malaria and live leech of *Haemadipsa* is used for Blood colt. Leech is allowed to feed on swellings and areas where the blood is clotted due to injuries.

The Wancho uses animal products at least 10 cases in fresh, and then cooked or toasted, but dried animal products are used in the remaining three cases. They use a dog's blood to treat dysentery as well as diarrhea. The ash from burning feathers may be directly used to a part of the body distressed with an allergy, but bile and gall bladder may be dried and consumed as needed. Wancho will characterize zootherapeutic uses of animal body parts and animal products as the raw materials for portions and medicines prescribed for the treatment of various human-related diseases and disorders in 10 categories. They mostly used the bone marrow, followed by bile, raw blood, and honey.

Table-1. Medicinal uses of animals and their parts by Wancho

Sl no	Scientific name	Common name	Local name	Part used	Indication	Prescription
<b>1</b>						
<b>Aves</b>						
1	<i>Buceros bicornis</i>	Great hornbill	Ozang	Bone marrow	Muscular strain, sprain and bruises; fractures,	The bone marrow is used as massaging oil.
2	<i>Aceros nepalensis</i>	Necked hb.				
3	<i>A. undulatus</i>	Weathered hb.				
4	<i>Anthracoceros</i>	Pied hb.				
5	<i>Gallus sp.</i>	Jungle fowl	Ohan	Wings and Feathers (Burned)	Allergy	Feathers are burned and the ash is applied to the body part with allergy
6	<i>Gallus gallus domesticus</i>	Domestic hen	Oow			
7	<i>Columba livia</i>	Piegon	Oohu	Flesh	Energy booster	Flesh cooked used as soup for energy
<b>2</b>						
<b>Mammals</b>						
1	<i>Ursusthi betanus</i>	Asian Black Bear	Chapnu	Gall bladder/bile	Stomach ache, heart burn	Dried and consumed as needed
2	<i>Melusrus ursinus</i>	Sloth Bear			Delivery pain	
3	<i>Hystrix sp</i>	Porcupine	Adi/Azi	Gall bladder	Stomach ache and malaria	Dried and consumed as needed.
4	<i>Cynopterus sphinx</i>	Bat	Phakphai	Flesh	Astma, cough and colds	Flesh cooked and bone marrow consumed.
5	<i>Canis lupus familiaris</i>	Dog	Hee	Raw blood (fresh)	Dysentery, diarrhoea	The region near the ear is cut and the blood is collected and

						drank in raw and fresh before drying out
<b>3</b>			<b>Pisecs</b>			
1	<i>Mastacembelus armatus</i>	Eel	Ngahpuh	Whole body	Cuts, burns, boils, and many skin problems	After consuming the whole body, the saliva of the person is considered to be medicinal over cuts, boils, and skin related problems
				Raw blood	Energy booster	Energy booster to those who are considered weak due to lack of blood in the body
<b>4</b>			<b>Insecta</b>			
1	<i>Melamphaus gray</i>	Giant red bug	Waan	Haemolymph	Cough and cold	The haemolymph is squeezed out by gently pressing the abdominal region and then drunk with water
2	<i>Apis cerana</i>	Honey bee	Nah	Honey (Fresh)	Cough	Honey used for treating cough
3	<i>Apis mellifera</i>					
<b>5</b>			<b>Annelida</b>			
1	<i>Pheretima</i> sp.	Eartworm	Chongkeh	Whole body	Malaria	Consumed in raw form to protect from malaria
2	<i>Haemadipsa</i>	Leech	Watt	Live leech (Fresh)	Blood clot	Leech is allowed to feed on swellings and areas where the blood is clotted due to injuries

About 16 medicinal animals out of the total in Loding district of Arunachal Pradesh represent strong evidence of the medicinal use of wildlife resources. Among them, many species have become endangered due to overexploitation as sources of traditional medicines. Thus a sustainable use of animal resources is essential as the guiding principle for biological conservation. As per guideline of IUCN,<sup>6</sup> the exploitation of a given species is likely to be sustainable if it does not reduce the future use potential of the target population or impair its long-term viability if it is compatible with the maintenance of the long term viability of supporting and dependent ecosystem and if it does not reduce the future use potential or impair long term viability of other species.

However, if properly controlled, the zootherapeutic operation can be consistent with an environmental management policy in which the use of natural resources can and must take place in such a way that human needs the preservation of biodiversity are assured<sup>5</sup>. For this reason, it should be viewed within its cultural dimension which includes the way they perceive, use, transfer, allocate, and maintain their natural resources.

The Wancho tribe of Longding district of Arunachal Pradesh, who still live in remote villages with limited modern medical facilities used various animal species located in their immediate surroundings and some remote areas to treat their diseases and improve their

health. They use these traditional medicines as a remedies of stomach aches, joint pain, headaches, cough, etc. The cost of these medicines is comparatively low than the modern allopathic medicines and treatment by them is easier to arrange and obtain. Furthermore, it is often believed that the traditional ways lead to a promoter cure and are without side effects.

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