

## Indigenous Knowledge of Zootherapeutic Use of Vertebrate Origin by the Ao Tribe of Nagaland

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**ABSTRACT** The Ao tribe of Nagaland mostly use vertebrate derived medicine for a whole range of afflictions like body pain, rheumatism, asthma, liver disease, leucoderma, eczema, tuberculosis, paralysis, antidote against poison, skin disease, stomach disorder, jaundice, night blindness, bone fracture, malaria, dysentery, kidney problems, breathing problems, earache, burn injuries, stammering, piles, general weakness etc. Detailed information has been obtained on the traditional therapeutic use of twenty five different vertebrate species, of which, some have become rare. It is suggested that establishment of socio-ecological system through sustainable management and conservation of biodiversity may contribute tremendously to understand this indigenous system as a reliable source of medicine, food, income and other benefits.

### INTRODUCTION

Although Aborigines of a particular geographical area have culture and belief system distinct from the international system of knowledge, it is important to learn how they view and interact with their environment to mobilize their knowledge for the design of appropriate intervention (Langlill, 1999). Against the backdrop of worldwide ecological crisis due to over exploitation of natural resources, it is now recognized that the indigenous people manage the environment without damaging local ecologies (Emery, 1996), and conserve the biological diversity for securing livelihood and sustainable environmental development. Zoo-therapeutic is such a body of indigenous knowledge system built up by a group of people through generations, by living in close contact with nature and using traditional drugs of animal origin in the local environment so that it is specifically adapted to the local people and conditions. This plays a significant role in the healing practices, magic rituals and religions of both indigenous and western societies all over the world (Angeletti et al., 1992; Rosner, 1992). Although integration of indigenous people with larger societies, growth of national and international markets, imposition of educational and religious systems and various developmental processes lead to the homogenization of world cultures (Grenier, 1998), the contemporary society may benefit from such experience in its fight against disease and sufferings (Azmi, 1990) and the established

system of medicine too feels the importance of such drugs obtained from animals (Puri, 1970). It is thus, essential to document the various zootherapeutic uses and formulate conservation strategies for animals before these indigenous beliefs, values, customs, know-how and practices are altered and rendered unsuitable, making the knowledge base incomplete. Although quite a relevant contribution in the ethno zoological drugs of vertebrate origin has been made by Azmi (1990), Azmi et al. (1999) Borang (1996), Dutta Borkotoki et al. (1996) Joseph (1984), Sharma (1987), Sharma et al. (1991) Sharma and Khan (1995a,b), no authentic report is available from Nagaland except for the Chakhesang tribe (Kakati and Doulo, 2002). The present study briefly reports the use of drugs of vertebrate origin that have been practiced by the Ao tribe of Mokokchung district, Nagaland.

### MATERIALS AND METHODS

The Ao tribe inhabits the district of Mokokchung located in middle part of Nagaland which lies between 25°6' – 27°4' N longitude and 93°2' – 95°15' E latitude. The district covers an area of 1,615 sq. kms. out of a total 16579 sq. kms. of Nagaland. The Ao population consists of 1,58,374 against 12,09,546 of Nagaland as per 1991 census. The Aos speak two dialects i.e. *Chungli* and *Monsen* and accordingly, local practitioners and herbalists from each group were interviewed from as many locations as possible about remedies made from vertebrates, about

ailments for which the animal-derived remedies were prescribed, and the mode of administration of the medicine.

## RESULTS AND DISCUSSION

Table 1 summarizes the names of species, parts used, diseases for which they are prescribed and mode of preparation and use. It has been seen that vertebrate resources used by the Ao tribe consist of fourteen mammals, seven birds, two reptiles, one amphibian and one fish. It is revealed

that the Ao tribe mostly uses vertebrate derived medicine for body pain, rheumatism, asthma, liver disease, leucoderma, eczema, tuberculosis, paralysis, antidote against poison, skin disease, stomach disorder, jaundice, night blindness, bone fracture, malaria, dysentery, kidney trouble, breathing problem, earache, burn injuries, stammering, piles and general weakness etc. While fat of different animals, particularly, buffalo, pig, domestic fowl, eagle and monitor is warmed up and externally applied for relieve from pain, most of the other parts are either cooked,

**Table 1: List of vertebrates and their body parts use for therapeutic purpose by Ao tribe, Nagaland, India**

S. No.	Animal group	Scientific name	Common name	Local name	Part use	Disease treated	Prescription
1.	Mammal	<i>Bubalus arnee</i>	Buffalo	Chang/ Apang	Fat	Body pain Sprain Rheumatism	Applied externally as embrocation/ massager
2.	Mammal	<i>Felis sp.</i>	Wild cat		Flesh Bile	Asthma Liver Cirrhosis	Flesh is cooked and eaten Boiled in water and taken
3.	Mammal	<i>Elephas maximus</i>	Elephant	Shiti/Shati	Tooth	Leucoderma Itching Eczema Ringworm	Crushed into powder and applied on skin Crushed into powder and drunk with water
4.	Mammal	<i>Petaurista petaurista</i>	Flying squirrel	Sungkojang	Intestine Bile	Anti poison Asthma	Cooked and eaten Boiled in water and drunk
5.	Mammal	<i>Capra sibirica</i>	Goat	Nabong	Urine Liver Legs Milk	Asthma Tuberculosis Paralysis, Skin disease, Stomach disorder Jaundice Night blindness Sprain, Bone fracture General Weakness	Drunk directly Cooked and eaten Lower portion of legs cooked properly and eaten Drunk directly
6.	Mammal	<i>Bos frontalis</i>	Mithun	Sü/Atsü	Penis	Breast pain of lactating mother Skin disease	Properly cooked and eaten
7.	Mammal	<i>Herpestes sp.</i>	Moongoose		Penis	Male impotency	Properly cooked and orally taken
8.	Mammal	<i>Sus scrofa domestica</i>	Domesticated pig	Aak/Aok	Fat	Body pain Rheumatism Burn Snake bite Asthma	Applied locally as embrocation/ massager Used as antidote
9.	Mammal	<i>Rhinolophus sp.</i>	Bat	La/Aleptevi	Flesh	Asthma	Boiled in water and drunk
10.	Mammal	<i>Selenarctos sp.</i>	Bear	Shirem/Erem	Bile	Malaria	Boiled in water and drunk

**Table 1: Contd...**

S. No.	Animal group	Scientific name	Common name	Local name	Part use	Disease treated	Prescription
11.	Mammal	<i>Hystrix sp.</i>	Porcupine	Chüpu	Bile	Dysentery	Soaked in rice, dried and taken
12.	Mammal	<i>Macaca sp.</i>	Monkey	Shitsü/Kisa	Blood	Tuberculosis	Fresh blood taken
13.	Mammal	<i>Pteropus sp.</i>	Flying fox		Urine	Kidney stones	Soaked in rice, dried and taken
14.	Mammal	<i>Talpa sp.</i>	Mole		Flesh	Asthma	Boiled in water and taken
15.	Aves	<i>Gallus sonnerati</i>	Jungle fowl	Oometsü	Flesh	Asthma Breathing problem	Properly cooked and eaten
16.	Aves	<i>Pavocristatus</i>	Peacock	Tooti	Bone	Earache	Powdered, mixed with water and put drop wise in ear
17.	Aves	<i>Columba livia.</i>	Pigeon	Kootoroo	Flesh	General weakness	Flesh of Young birds is cooked and eaten for early recovery
18.	Aves	<i>Gallus domesticus</i>	Domestic fowl	Aan/ Ahen	Fat	Burn	Soup is warmed and applied locally Raw fat warmed and applied locally
19.	Aves	<i>Passer domestica</i>	House sparrow	Alushijak	Flesh	Stammering	Boiled in water and taken
20.	Aves	<i>Corvus splendens</i>	Crow	Warow	Flesh Bones	Rheumatism Paralysis Earache	Cooked and eaten Crushed into powder, mixed with water and applied in ear drop by drop
21.	Aves	<i>Aquila rapax</i>	Eagle	Moongzü	Fat	Sprain Bone fracture Burn	Applied locally
22.	Reptile	<i>Varanus bengalensis</i>	Monitor	Sangkon	Skin Fat Bile duct	Piles Rheumatism Body pain Piles Burn Spider and snake bite	Cooked and eaten Applied locally Taken orally as antidote
23.	Reptile	<i>Testudo sp.</i>	Tortoise	Küra	Flesh	Skin disease Piles	Cooked and eaten
24.	Amphibian	<i>Rana sp.</i>	Frog	Aloo	Skin	Wounds	Skin washed in water and applied
25.	Pisces	<i>Amphipnous cuchia</i>	Eel	Angolang/ Ngalang	Blood	Asthma General weakness	Fresh blood is drunk

crushed into powder or boiled and eaten. Flesh is taken after cooking while milk, urine and fresh blood of some animals are taken fresh to get rid of general weakness and other serious disease. The Chakhesang tribe of Nagaland also uses twelve mammals, one bird, one reptile, two amphibians, one fish, one mollusk, one annelid and four arthropods for treatment of various ailments (Kakati and Doulo, 2002).

Sharma and Khan (1995a) observed that drugs of insect origin are more commonly prevalent among tribal population of Garo hills of Meghalaya compared to the drugs of mammal origin. The medicinal uses of rare drugs of avian origin are enlisted in different tribal communities of Madhya Pradesh (Joseph, 1984) and Meghalaya (Sharma and Khan, 1995b). The relevance of ethno zoology highlighting the

medicinal use of numbers of animal drugs of vertebrate origin to cure various diseases are also established in different part of the world (Aldasoro and Heliot, 2002; Maiti, 1982; Marques, 1994; Rosner, 1992; Sharma, 1987; Sharma, 1995a,b; Tikadar et al., 1985). Azmi et al. (1999) claim that animal fats are used as traditional drugs among tribals of Chhatisgarh, in *Unani* medicines, as ointment for external use in inflammations, muscular pains, piles, burns, wounds and sexual disability. Borang (1996) has also made a detailed study on ethno zoological aspects among Adi tribe in Siang district of Arunachal Pradesh and enumerated 95 species belonging to various groups including aves and mammals for medicinal and other uses. Sharma and Khan (1995b) have ascertained the efficacy of such traditionally inherited mycine drugs which are used traditionally to cure ailments without any side effect among Garo and Hajong tribes of Meghalaya.

Ethno zoological drugs of vertebrate origin have great importance to the Ao tribe due to limited access to allopathic medicines, lack of proper medical facility, and transportation problems. It is seen that in spite of extremely precise ecological knowledge and strong tradition of conservation and sustainable use, certain animals become rare due to subsistence hunting for food and other uses, and only preserved parts of those animals have been used as raw materials for treatment of diseases (Anderson, 2002). Among the Aos too, only preserved parts of some animal like flying squirrel, *Mithun*, Mongoose, Bear, Porcupine, flying fox, Mole, jungle fowl, peacock, eagle and tortoise have been used as raw materials for treatment of disease. It is noteworthy to mention that while studying the traditional use and sale of animals for medicinal purpose, Neto (2000) has enlisted six out of seventeen species as officially declared endangered. Kakati and Doulo (2002) also identified six species as rare among twenty three species among Chakhesang tribe of Nagaland. The interest for traditional social institutions is gradually eroding among the young generation due to intrusion and assimilation of alien cultures. Therefore the socio ecological system has to be strengthened through sustainable management and conservation of biodiversity. It must be established as an important step towards understanding of the valuable contribution of this indigenous knowledge system, so that the

users and sellers are aware of legal and ecological status of the species they use as a reliable source of medicine, food, income and other benefits.

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