



Bioscene

Bioscene
Volume- 21 Number- 03
ISSN: 1539-2422 (P) 2055-1583 (O)
www.explorebioscene.com

Zootherapeutic and Perspective among the Ethnic Groups of Gossaigaon Sub-Division in Kokrajhar Assam, India

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Abstract : Ethnozoology plays a crucial role in treating common ailment in human and forms the basis for allopathic medicine in modern science. Northeast India with its rich biodiversity and diverse communities holds an association between human and nature through its unique culture and tradition. This study aims to document the use of faunal species and their products as a therapeutic medicine in treatment of common ailment in 3 areas of Gossaigaon subdivision, Kokrajhar Assam. The used of 34 faunal species belonging to 10 different classes in treating various ailment were reported by the communities in the study area. Common cold, skin disease, poor eye sight and body pain were the common mention ailments treated. Mammals are the highest used species followed by actinoptergii, aves and insects. The highest RFC and FL value was recorded for *Heteropneutes fossilis*. The communities inhabiting the area were Bodo, Koch-Rajbongshi, Muslim and Santhal. The use and preparation of species varies within the communities. This study documents the distinctive way of consumption not reported earlier and covert zootherapeutic knowledge practices by indigenous people of different communities. Therefore, exploring the traditional practices holds a key insight in modern drugs development that assists in human health and conserved the traditional ethics as well. Thus, further studies need to be undertaken before the rich cultural diversity is loss to the sight.

Keywords: Ethnozoology, Faunal, Communities, Kokrajhar

Introduction

Associations between humans and animals have always been existed throughout the history (Alves 2012). Sax (2002) acknowledged that human's attitude for the animals existed from the beginning and one can understood as they are represented in history and arts. Traditional ethnozoological knowledge emerged from the ancestors, material or spiritual relationships between humans and their territorial fauna which existed in different ethnic group as a part of their culture independently.

Ethnozoology is a discipline that deals with the role of animals and their use in treatment of common ailments in humans. It has a significant substitute over other known therapeutic medicines as presume by Alves et al. (2005). About more than half (70-80%) of rural population in developing countries depends on traditional medicine as a primary source of healthcare (Teronpi et al. 2012;

Chhetri et al. 2020, Bohra and Prasad 2016, Baumatary et al. 2023). It has been reported that about half of the drugs are derived biological resources in modern science which actually is used by indigenous people over the years. Therefore an insight on this particular discipline provides an opportunity to examine scientific hypotheses.

Assam, a state in the North-eastern, India has its own unique cultural diversity along with rich flora and fauna (Narzary and Bordoloi 2014; Bohra and Prasad 2016; Gogoi and Bora 2020). Till date the ethnozoology studies in this region among different tribes and communities signifies the medicinal value of flora and fauna as well the deep knowledge that have been passed through generation. The used of 44 different faunal species by traditional healers in Gibbion Wildlife Scantuary of Assam were reported by Bohra and Prasad (2017). Similar use of faunal therapeutic purpose has been reported by Biate, Deori and Karbis tribes (Betlu, 2013; Gogoi and Bora 2020; Khatun et al. 2022). This has an immense important to understand, study and preserve these medicinal purpose of different animals used in traditional medicine practices among the different ethnic communities prior to lost.

Kokrajhar district within the Assam, holds a key insight about ethnozoological uses. Use of 3 frog species, 34 itchthyofauna and 23 arthropod species has been reported to be use by Bodo community as a therapeutic purpose (Narzary and Bordoloi 2014; Basumatary et al. 2023; Basumatary and Choudhury 2023). As there exist only a few studies on certain faunal therapeutic practices (Bohra and Prasad 2016) it thus needs further exploration and proper investigation as many places in this district are uncovered.

The present study thus objects the rich use of ethnozoological knowledge within different communities of Gossaigaon sub-division of Kokrajhar. This study aims to explore the undercover traditional therapeutic practices among communities through scheduled survey within March to May 2024. Gossaigaon sub-division with indigenous people inhabiting there, holds diverse zootherapeutic practices useful in treating common human ailment and thus is chosen as a study area. This will help to broaden our vision in modern medicines as well as improve the knowledge on sustainable utilization of natural resources such that traditional knowledge is preserve for future generation.

Methods

Study Area

The study was conducted in Gossaigaon subdivision, in Kokrajhar district of Assam, India (Figure 1). It lies in the foot hill of eastern Himalaya. Gossaigaon subdivision has a total geographical area of 1122 sq. km. It is situated at the latitude of 26.4371° N and longitude 89.9767° E. The subdivision shares its boundaries with the state West Bengal on the west, Dotma subdivision on the

east, Dhubri district of Assam on the south and river Sankosh in the West and Hel River in the East and the north is covered by Bhutan which is an international border. The Gossaigaon-sub is the hometown of Raimon National Park (422km²). The Gossaigaon subdivision of Kokrajhar district region is rich in biodiversity and natural resources and has tropical climatic condition with an average elevation of 50 meters. The major communities that are inhabitants in this subdivision are Bodo, Koch-Rajbongshi, Santhal, Bengali and Muslim communities. The study was conducted in three villages (Srirampur, Guabari, Serfanguri I) within Gossaigaon sub division of Kokrajhar district, Assam.

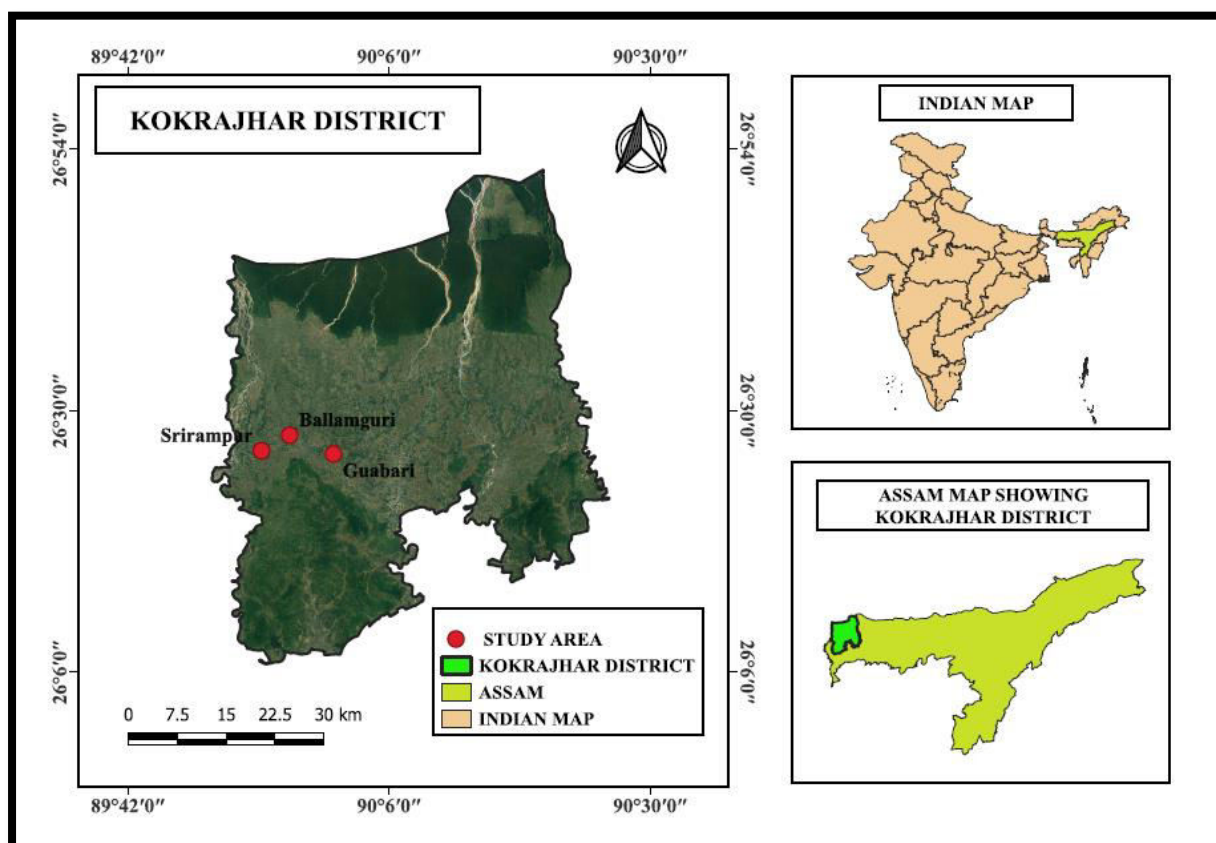


Figure 1: QGIS Map of Kokrajhar district, Assam showing study areas

Data collection

Information regarding the use of animals as traditional medicine by the ethnic communities of Gossaigaon subdivision in Kokrajhar, Assam was obtained through semi-structured questionnaires and personal interviews with the informants in three villages of Gossaigaon sub division from March to May 2024. The informants were interviewed in native language about the name and description of the animal used, along with body parts of the animal used and their products, the mode of application, dosage, methods of preparation and the type of diseases cured or its effect on health. About maximum of 2 interviewee were chosen per house. In case if the young informants are unsure or only heard about

the use and practices of certain animal species, the elders and Ojha were preferred as guidance for the conformation. The animal species local vernacular name, detailed description and photos of the animal species were used for preliminary identification.

Data analysis

The data was analyzed by Relative frequency of citation (RFC) to determine the local importance of each species. While, the most commonly used animal species were determined by Fidelity level (FL) (Borah and Prasad 2017, Basumatary et al. 2023).

Relative Frequency of Citation (RFC)

Relative Frequency of Citation (RFC) index shows the importance of each species. It shows that the informants in the survey referred a particular species of animal to be useful. The RFC index range varies from 0 to 1. When, RFC index is 0, it means that no one refers the animal species to be useful and when RFC index is 1, it shows that all the informants referred the animal species to be useful. The RFC value was calculated using the formula as follows:

$$RFC = FC/N$$

Where,

FC = The number of informants mention the use of a particular species

N= The total number of informants

Fidelity Level (FL)

Fidelity Level (FL) was calculated to determine the most commonly used animal species in the treatment of a particular disease category by the informants in the study area. In other words, Fidelity Level is useful to identify the most preferred animal species in the use for treating certain diseases. The FL was calculated by using the formula:

$$FL (\%) = N_p \times 100/N$$

Where,

N_p= The number of informants referred the particular animal species to cure a particular disease.

N= The total number of the informants used the animal to cure any given disease as a medicine.

Results

Demographics of Informants

A total number of 110 informants from three different villages namely Srirampur, Ballanguri and Guabari in Gossaigaon sub-division of Kokrajhar

District were interviewed (Table 1). Out of the total informants, majority belongs to Koch Rajbongshi community, followed by Bodo community, Muslim community and Santhal community. Among these informants (72%) were males and (28%) were females. The highest age frequency was observed between 31-41 years with 21% informants and between 53-63 and 64-74 years with 18% informants each. The interviewee belonged to different categories such as farmers, traditional healer, former govt. employees, self-employed; housewife and some are involved in different businesses for their livelihood. Most of the data were provided by the traditional healer and the old aged peoples between the age range of 75- 90 years. The highest frequency of the use of species was observed by the age group among 31- 41 years (n= 110, 21%). Majority of the informants were from primary education, some were from lower primary education and few of them were graduate.

Ethnozoological analysis

The study resulted in revealing of 34 animal species belonging to 10 classes, which the ethnic groups have knowledge or have utilized the animal species for their health benefits or for the treatment of diseases (Table 2). The majority of the species belonged to class Mammalia with 11 species (32%) followed by Actinopterygii (17%), Aves (15%), Insecta (9%), Gastropoda (6%), Clitellata (6%), Reptilia (6%), Malacostraca (3%), Archinida (3%) and Amphibia (3%) respectively. The class Mammalia resulted in 11 species which includes *Pteropus medius*, *Vulpes bengalensis*, *Herpestes edwardsii*, *Sus scrofa*, *Lepus nigricollis*, *Axis axis*, *Callosciurus pygerythrus*, *Bubalus bubalis*, *Bos indicus*, *Capra hircus* and *Rattus rattus*. About 6 species were documented from the class Actinopterygii namely *Chitala chitala*, *Labeo rohita*, *Clarias batrachus*, *Heteropneustes fossilis*, *Anguilla bengalensis* and *Channa gaucha*. A total of 5 species viz. *Oriolus xanthornus*, *Passer domesticus*, *Anas platyrhynchos*, *Otus spp.* and *Columba livia domestica* were recorded under the class aves. Only 3 species from class Insecta (*Lampyridae spp.*, *Apis cerna indica* and *Oecophylla smaragdina*), 2 species each from class Gastropoda (*Pila spp.* and *Brotia spp.*) and Clitellata (*Hirudo medicinalis* and *Pheretima spp.*) and one species each from class Reptilia (*Pangshura spp.* and *Varanus bengalensis*), Malacostraca (*Sartoriana spp.*), Archinida (*Euscorpiops longimanus*), and Amphibia (*Polypedates leucomystax*) were observed.

Different animal species plays important role in different ethnic groups and utilize it in association to their cultural, traditional beliefs. Significant used of different animal species were observed among four ethnic groups as depicted in Figure 2. A total of 8 distinct animal species were reported to be used by Bodo and Muslim community. Koch Rashbongshi community suggested used of 7 different species for therapeutic purpose and about 6 species were recorded to be used among the Santhal community. Mammals were highly preferred by all the communities, while crustaceans and reptiles were least used species.

Amphibia and archinids are documented to be used by Bodo and Muslim community only (Figure 3).

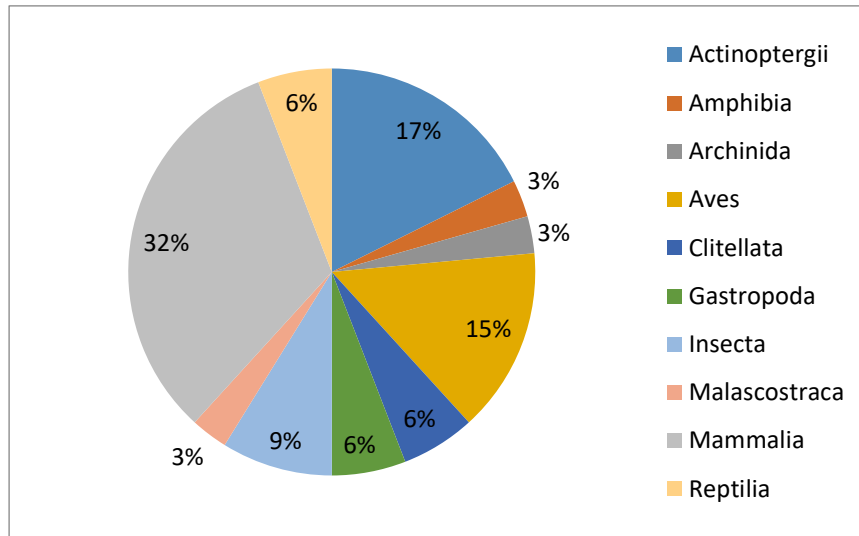


Figure 2: Different animal species used in ethno-zootherapeutic practices among the ethnic groups of Gossaigaon sub-division

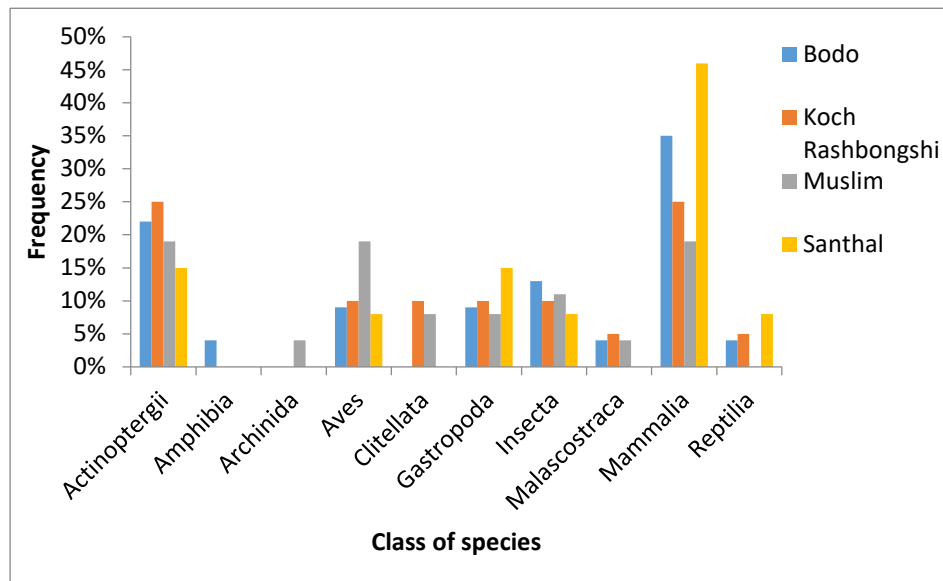


Figure 3: Comparison of animal species used among ethnic groups of Gossaigaon sub-division

Relative Frequency of Citation (RFC)

The most mentioned or referred animal species were *Heteropneustes fossilis* (RFC= 0.82), *Bos indicus* (RFC= 0.65), *Bubalus bubalis* (RFC= 0.55), *Anguilla bengalensis* (RFC= 0.41), *Brotia* spp. (RFC= 0.41). While, the animal species with lowest RFC of 0.009 index were seen in *Chitala chitala*, *Callosciurus pygerythrus*, *Pangshura* spp., *Anas platyrhynchos*, *Axis axis*, *Euscorpiops longimanus*, *Sus scrofa* and *Polypedates leucomystax*.

Fidelity Level (FL)

The fidelity level of claimed use animal species ranges from 1.0% to 100%. The highest FL was documented for *Heteropneustes fossilis* (FL- 72.7%), followed by *Bubalus bubalis* (FL- 55.45%), *Bos indicus* (FL- 45.55%) and *Brotia* spp. is used for the treatment of better eye sight (FL- 40.91%). *Chitala chitala*, *Callosciurus pygerythrus*, *Pangshura* spp. (0.91%), *Anas platyrhynchos* (0.91%), *Axis axis*, *Euscorpiops longimanus*, *Sus scrofa* and *Polypedates leucomystax* have lowest FL value of 0.91% respectively for each species.

Discussion:

The utilization of different animal species for the treatment of common ailment had been acknowledged among the ethnic groups (Koch Rajbongshi community, Bodo community, Muslim community and Santhal community) of Gossaigaon sub-division. There are various similar studies reported to be used of different invertebrate and vertebrate species for the treatment of different diseases like ringworm, gas related troubles, body pain, wound healing, low blood pressure, anemia, to increase lactation, asthma, jaundice, male impotency, breathing disorder, increase intelligence, evil attack, weak immune system, nerve problems, burnt skin, better eye sight, night or partial blindness, cough, abdominal pain, sinus, liver disorder, pneumonia, senselessness, tuberculosis, allergy, lungs related disease, piles, weakness, managing weight, vitamin deficiency, nightmare, common cold, eye infection, hair care and skin diseases (Jamir and Lal, 2005; Mahawar and Jaroli, 2007; Borah and Prasad, 2017; Gogoi and Bora, 2020).

The commonly used methods by the ethnic groups for the consumption or prescribed use of traditional medicine are taken orally or topically. Mostly the oral consumption to treat the ailments were higher than applying topically, though topical application still is a major way therapy to cure disease like pain, hair care, piles, nerve problems etc. (Jaroli et al. 2010; Kim and Song, 2013; Verma et al. 2014; Borah and Prasad, 2017). The preparation usually varies from species to species, though most commonly the species are cooked or boiled with salt and turmeric as a belief that it kills all the toxic substances and purify the cuisine. Boiling of certain animal parts with salts or spices, burned, smoke, paste or cooked with some medicinal value plants to increase the effectiveness were

some methods as suggested by respondents. Species like ant and fire fly were reported to consume raw with banana so as to avoid the wired taste of fly. Some species were also used as anoint which indicates the knowledge they hold from generations of different animal species and their use in traditional medicine and can also implies the use of species in their cuisines (Borah and Prasad, 2017; Chhetri et al. 2020; Kumera et al. 2022).

The highest value of RFC index and FL value of *Heteropneustes fossilis*, shows the importance, popularity and health benefits of this particular animal species as comparison to other animal species in the present study area as mentioned by the informants. Similarly, a study by Basumatary et al. (2023) shows highest value of RFC for *Heteropneustes fossilis* and its beneficial role as zotherapeutic medicine. The low RFC of *Chitala chitala*, *Callosciurus pygerythrus*, *Pangshura* spp., *Anas platyrhynchos*, *Axis axis*, *Euscorpiops longimanus*, *Sus scrofa* and *Polypedates leucomystax* indicates least use of these species may be due to limited therapeutic knowledge about those species.

In the present investigation *Heteropneustes fossilis* widely claimed by the most of the respondents is beneficial for curing body pain and are effective to consume when cooked with very few spices. *Clarius batrachus* was also reported to be used for the same therapeutic purpose as *Heteropneustes fossilis*. Similarly Borah and Prasad (2017) also documented the treatment of body pain by *Clarius batrachus*. While Baumatary et al. (2023) reported the used of *Clarius batracus* among pregnant and lactating mothers in Bodo community. *Channa gachua* in the present study is mentioned to increase lactation and is opined to have more effective cure when prepared with young shoots of *Pedilanthus tithymaloides* or stems of *Hemidesmus indicus*. Comparably Narzary et al. (2019) reported *Channa gachua* to be useful for the same therapeutic purpose. Species such as, *Anguilla bengalensis* is mentioned to treat low blood pressure and anaemia, and generally raw blood or cooked with few spices is useful in the cure. Dry frying the scales of *Chitala chitala* with black cumin seeds and making it into fine powder is mentioned to cure ringworm diseases when apply on the infected area. However, similar study from Basumatary et al. (2023) shows that *Anguilla bengalensis* is recorded to be used for the treatment of piles whereas *Chitala chitala* is used for the treatment of removing dandruff in babies. The gall bladder of *Labeo rohita* is mentioned to cure gas related troubles as per the present study and is also reported by Borah and Prasad, (2017).

The current study suggested the use of amphibian by the Bodo communities only. The meat of *Polypedates leucomystax* is mentioned to treat asthma when cooked with few spices, also recorded by other study (Borah and Prasad, 2017). *Euscorpiops longimanus* under the class Archinida is mentioned by the traditional healer locally known as Ojha and is documented to be used by only Muslim community in the current study. The species is prescribed to relieve

pain and is prepared by frying with mustard oil and sesame oil. Further it is cool down in a jar and after storing for 1 week, the oil is ready to use in joint pains. Similarly, a study by Jamir and Lal, (2005) also suggested the use of scorpion (*Palamnaeus swammerdami*) to relieve pain.

As suggested by the informants in the current study aves species like, *Oriolus xanthornus* is mentioned to treat jaundice when cooked with few spices. Whereas Sarkar et al. (2014) suggests that bone of *Oriolus xanthornus* about 1.2 cm is wrapped in cloth and thread is placed around the neck to treat jaundice. Consumption of meat of *Passer domesticus* for 3 consecutive days is suggested to treat male impotency. Faecal matter of this species is revealed to cured constipation as also reported by Raja et al. (2018). *Anas platyrhynchos* is mentioned to treat breathing disorder but Sarkar et al. 2014 conclude that this species is used in treating the arthritis. Meat of *Otus* spp. is mentioned to increase intelligence, on the other hand applying anoints of ash from owl's burn beak is perceived to save one from the evil attack. Another study by Meshram and Husain (2017) documented that meat of owl (*Strix aluco nivicola*) is used to promote strength and virility. *Columba livia domestica* is mentioned to treat weak immune system but Behera and Mohanty (2019) reported the use of *Columba livia domestica* for paralysis.

Invertebrates like, *Hirudo medicinalis* in this study is mentioned to cure nerve problem. Other beneficial effects of this species were reducing the muscle swells, piles etc. (Verma et al. 2014) *Pheretima* spp. is mentioned to cure burnt skin. While other findings suggested the used of *Pheretima* spp. for other therapeutic purposes viz. vocal cord infections, cancer, pneumonia, piles, asthma, epilepsy etc. (Borah and Prasad 2016; Borah and Prasad, 2017). *Pila* spp. and *Brotia* spp. were mentioned to provide better eye sight. Similar finding was also reported by Borah and Prashad (2017).

Insects such as, *Lampyridae* spp. is mentioned to cure night or partial blindness, whereas Behera and Mohanty (2019) reveal that it is helpful to cure stomach ulcer. Borah and Prasad (2017) found *Apis cerna indica* and *Lampyridae* spp. to cure cancer, but the current study depicted the same species to be recommended for cough and abdominal pain similar to the findings of Shoukat et al. (2020) for *Apis cerna indica*. Consuming raw pasted whole parts of green ant (*Oecophylla smaragdina*) is perceived to be beneficial for the sinus problem. However findings of Basumatary and Choudhury (2023) on such similar study suggested the species to be useful in curing epilepsy. Consumption of *Sartoriana* spp. for curing jaundice and liver disorder were mentioned by all the community except Santhal community as suggested in this study.

Mammals being the most common and highly used by all the communities, is considered to have various therapeutic properties. Asthma and pneumonia is believed to be cure by *Pteropus medius* when whole or head part is consumed.

Raw blood or cooked meat with spices of *Vulpes bengalensis* was recorded to be beneficial in treatment of senselessness and TB disease. Other ailment like gout, arthritis and chicken pox were also treated with *V. bengalensis* meat as claimed by Chhetri et al. (2020). *Herpestes edwardsii* meat is mentioned to treat allergy. However, Borah and Prasad (2017) concluded that it is useful in the treatment of cancer, asthma and rabies. Oil produce from fats of wild boar (*Sus scrofa*) is considered as a good hair care product, whereas a study by Kumera et al. (2022) concluded that consuming the flesh and liver of this species cures stomach and internal illness. *Lepus nigricollis* meat is used to cure common cold but Meshram and Husain (2017) conclude that the blood of *L. nigricollis* is used to treat asthma. Horns of *Axis axis* are mentioned to treat piles (Verma et al. 2014). Dhakal et al. (2019) found that *C. pygerythrus* is used to treat common cold and cough. However, the present study suggested treating lungs related diseases. Milk of *Bubalus bubalis* and *Bos indicus* is reported to balance vitamin deficiency and maintaining weight and weakness respectively as of the current report. While other such studies revealed that *Bubalusthis bubalis* is used to treat jaundice, ascites, dysentery, hemoptysis, eruption and hemorrhoids (Chellappandian et al. 2014) and *Bos indicus* is used to treat skin cancer, chronic dysentery and epilepsy (Borah and Prasad 2017). *Capra hircus* is mentioned to treat eye infection when few drops of the raw milk are put on the infected eye. Whereas Gogoi and Bora (2020) concluded ingestion of *C. hircus* tongue, feets and bones treat speech problem in childhood and hand and leg cramps respectively. Boiled meat of *Rattus rattus* is mentioned to help overcome nightmare (Kumera et al. 2022), also the ashes produced by burning the head portion is applied as an anoint on the forehead with the help of fingertips.

This study also that reptiles are recorded to be used by all communities except the Muslim community. *Pangshura spp.* and *Varanus bengalensis* are mentioned to treat skin diseases. However a study documented by Vijaykumar et al. (2015) reveal the use of turtle (*Lissemys punctata*) shell for the treatment of diseases such as diarrhoea, indigestion, dermatitis, acne, malaria, tuberculosis, diabetes, urinary obstruction, arthritis, bronchitis, cough, asthma, cold, sexual dysfunction and menorrhagia. Bone fracture, warts and strengthening of teeth are perceived to cure by *V. bengalensis*. But a similar study found the use of *V. bengalensis* for the treatment of skin diseases (Borah and Prasad, 2017).

The documentation of various therapeutic uses of faunal species indicates rich orthodox knowledge of the communities in their live. It associates people to nature and connects the diverse communities residing in the Gosaigaoan sub-division of Kokrajhar, creating awareness about the significant uses of faunal diversity in human health. Moreover, the informants were aware about the ethical value of species that aid to the conservation of certain threatened species. However, the lack of proper scientific knowledge is a concerning issue to held the traditions and biodiversity at place.

Conclusions:

This study on the ethnozoological practices among the different ethnic groups in Gossaigaon sub-division resulted in the use of different animal species and a step to apprehend and respect their traditional or ethnic heritage. The different animal species used by the different ethnic groups i.e., Koch Rajbongshi community, Bodo community, Muslim community and Santhal community indicates the diversity, traditional importance, cultural value and medicinal values in their life. The majorities of the zootherapeutic practices or ethnozoological knowledge has been passed down from generations and have been utilized since ages indicating their cultural values. The expeditiously fading of the indigenous knowledge about ethnomedicine is concerning. In order to understand these practices more in depth we need further studies concerning the protection and conservation of the species. As well awareness and scientific knowledge about the concerned species should be acknowledged publically so that the over use or over exploitation of the animal species are avoided.

List of abbreviations:

RFC: Relative Frequency of Citation

FL: Fidelity Level

Authors' contributions: K Roy – Data Collection, BP Narzary – Original manuscript preparation, J Narzary – Supervisor, all authors have read and agree to the published version of the manuscript.

Acknowledgement: We are thankful to the interviewees of Gossaigaon sub-division Kokrajhar for co-operating and providing us the valuable information. We would also like thank the head of the institution of Science College Kokrajhar for their guidance throughout the work.

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Table 1: Demographic characters of the informants in the survey (N=110)

Demographic Characters		Number of informants	
Percentage (%)			
Gender			
Male	79		72%
Female	31		28%
Ethnicity			
Koch-Rajbongshi community	47		43%
Bodo community	28		25%
Muslim community	23		21%
Santhal community	12		11%
Age class			
Between 20-30 years	11		10%
Between 31-41 years	23		21%
Between 42-52 years	21		19%
Between 53-63 years	20		18%
Between 64-74 years	20		18%
Between 75-85 years	14		13%
Between 86-96 years	1		1%

Table 2: Different species used in zotherapeutic practices among the ethnic groups of Gossaigaon sub-division

S L. N o.	Comm on Name	Scientif ic Name	Class	Phylu m	Part Used	Treat ment	Mode of Applicatio n/Prescri ption	RF C	Fid elit y Lev el
1	Chital Fish	Chitala chitala	Actinopt erygii	Chord ata	Scale s	Ringw orm	Scales of Chital fish is fried with black cumin seeds then made into fine powder and then applied on the area.	0.0 09	0.91

2	Rui Fish	Labeo rohita	Actinopterygii	Chordata	Gall Bladder	Gas related troubles	Gall bladder is taken out then put in water after sometimes it is preferred to drink or boiled cooked.	0.3545	35.45
3	Magur Fish	Clarias batrachus	Actinopterygii	Chordata	Whole	Body Pain	Cooked with black pepper and few spices.	0.3818	38.18
4	Singhi Fish	Heteropneustes fossilis	Actinopterygii	Chordata	Whole	Body Pain Wound Healing	Cooked with black pepper and few spices. Or, boiled with turmeric and salt then consumed.	0.8181	72.739.09
5	Eel	Anguilla bengalensis	Actinopterygii	Chordata	Whole	Low Blood Pressure Anemia	For anemia raw blood is drunk and for low blood pressure the fish is cooked with few spices and turmeric then consumed.	0.409	20.9120.00

6	Cheng Fish	Channa gachua	Actinopterygii	Chordata	Whole	To Increase Lactation	Cooked with young shoots of Pedilanthus tithymaloides or stems of Hemidesmus indicus.	0.3545	35.45
7	Common tree Frog	Polypedates leucomystax	Amphibia	Chordata	Meat	Asthma	Meat is cooked with spices and consumed.	0.009	0.91
8	Scorpion	Euscorpions longimanus	Arachnida	Arthropoda	Whole	Pain relief	Mustard oil and sesame oil are together taken and make hot for 10-20 mins and let it cool down in a jar. Then the scorpion is put inside this mixture of oil for 1 week and then the oils is ready to use in joint pains.	0.0090	0.91
9	Black-hooded Oriole	Oriolus xanthonus	Aves	Chordata	Meat	Jaundice	Boiled meat is consumed	0.0272	2.73

							with few spices.		
10	House Sparrow	Passer domesticus	Aves	Chordata	Meat	Male Impotency	Cooked meat with few spices is consumed for 3 continuous days.	0.0272	2.73
11	Mallard	Anas platyrhynchos	Aves	Chordata	Alimentary Canal	Breathing disorder	Alimentary canal is cleaned, boiled thoroughly, cooked and consumed.	0.009	0.91
12	Owl	Otus sp.	Aves	Chordata	Meat Beak	Increase Intelligence Evil Attack	For intelligence meat is consumed and for defence against evil attack the beak of an owl is burnt and the ashes are used to anoint in forehead.	0.0181	0.91 0.91
13	Pigeon	Columba livia domestica	Aves	Chordata	Meat	Weak Immune System	Cooked meat is consumed.	0.109	10.91

14	Leech	Hirudo medicinalis	Clitellata	Annelida	Whole	Nerve Problem	7-8 leeches taken are fried with mustard oil and they are fried well until the oil becomes slightly reddish. Then the oil is cooled and preserved in a bottle and can be used to massage the areas with the nerve problems.	0.1	0.0909
15	Earthworm	Pheretima spp.	Clitellata	Annelida	Whole	Burnt Skin	Around 10-13 earthworm are fried with small amount of mustard oil and then cooled the oil for 5 mins then applied on the burnt areas.	0.1	10

16	Apple Snail	Pila spp.	Gastropoda	Mollusca	Meat	Better Eye sight	Remove the shell then boiled with few spices and then eaten the meat portion.	0.3727	37.27
17	Takoa	Brotia spp.	Gastropoda	Mollusca	Water y Portion	Better Eye sight	Boiled with few spices and then consumed the soft meaty portion.	0.4090	40.91
18	Firefly	Lampyridae spp.	Insecta	Arthropoda	Whole	Night or Partial Blindness	Orally taken with banana and the firefly is put inside and consumed.	0.0363	3.64
19	Bee	Apis cerna indica	Insecta	Arthropoda	Honey	Cough Abdominal Pain	Taken orally with water and add a few spoons of honey and mixed well. Another mode is taking a spoonful of honey with luke warm water.	0.3545	8.182727
20	Green Tree	Oecophylla	Insecta	Arthropoda	Whole	Sinus	10-12 green ants	0.0272	2.73

	Ant	smarag dina					are collected, pasted and eaten raw.		
2 1	Crab	Sartoria na spp.	Malacost raca	Arthro poda	Whol e	Jaundi ce Liver Disord er	3-4 crabs are first boiled after then they are crushed into paste and consumed.	0.3 272	27.2 7 5.45
2 2	Bat	Pteropu s medius	Mammal ia	Chord ata	Whol e and the head part	Asthm a, Pneum onia	The head part is mostly preferred for consumpti on. And the meat is also preferred.	0.0 727	3.64 3.64
2 3	Fox	Vulpes bengal ensis	Mammal ia	Chord ata	Meat Heart	Sensel essnes s TB diseas e	Cooked meat with few spices and in some cases raw blood is drunk.	0.0 18	2.73 4.55
2 4	Mongo ose	Herpest es edward sii	Mammal ia	Chord ata	Meat	Allerg y	Head and tail part of the mongoose is cooked with few spices and then consumed.	0.0 727	1.82
2 5	Squirrel	Callosci urus	Mammal ia	Chord ata	Meat	Lungs relate	Meat is boiled	0.0 09	0.91

		pygeryt hrus				d diseas e	with salt and then consumed.		
2 6	Deer	Axis axis	Mammal ia	Chord ata	Horn	Piles	A small portion of deer horn is taken and burnt and the burnt smoke is applied on the piles region. Or the ash of the burnt horn of deer is applied on the piles region.	0.0 09	0.91
2 7	Cow	Bos indicus	Mammal ia	Chord ata	Milk Urine	Weak ness Manag ing weight	For weakness the cow's milk is drunk with half spoon of turmeric powder and consumed lukewarm. And for Managing weight milk is drank daily or 2- 3 months before sleep.	0.6 5 454	45.4 5 19.0 9

28	Buffalo	Bubalus bubalis	Mammalia	Chordata	Milk	Vitamin Deficiency	A glass of boiled milk is drunk.	0.5545	55.45
29	Rat	Rattus rattus	Mammalia	Chordata	Meat	Nightmare	Boiled and consumed, or in some cases the head of rat is burnt and the ashes is used to anoint on the forehead with the help of finger tips.	0.0454	4.55
30	Rabbit	Lepus nigricollis	Mammalia	Chordata	Meat	Common Cold	Meat is cooked with spices is usually preferred.	0.0454	4.55
31	Goat	Capra hircus	Mammalia	Chordata	Milk	Eye Infection	5-6 drops of goat milk is put in eyes.	0.0545	5.45
32	Wild Boar	Sus scrofa	Mammalia	Chordata	Fat	Hair Care	Fats are heated to produce oil and applied once in 2 weeks for 3 - 4 times.	0.009	0.91
33	Turtle	Pangshura spp.	Reptilia	Chordata	Meat	Skin Diseases	Meat is boiled with salt and then consumed.	0.009	0.91

3 4	Monitor lizard	Varanus bengal ensis	Reptilia	Chord ata	Meat	Skin Diseas es	Boiled meat is consumed with few spices.	0.1 181	11.8 2
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