



Cultural Zoology: Unveiling The Ethnozoological Tradition Of Assamese Tribes

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Abstract

This comprehensive review delves into the rich ethnozoological traditions of Assamese tribes in the biodiversity-rich state of Assam, which is an important part of the Eastern Himalayan hotspot. This study, which focuses on the complex relationships between indigenous communities and wildlife, delves into the cultural, ecological, and medicinal practices that highlight the symbiotic bond between humans and animals. The study chronicles ethnozoological knowledge through a thorough examination of scholarly databases, with a focus on the use of various species in traditional medicine to treat a wide range of ailments. This analysis demonstrates a deep understanding of the natural world, emphasizing the importance of traditional ecological knowledge (TEK) in biodiversity conservation and cultural heritage preservation. The findings argue for incorporating TEK into modern conservation strategies, providing insights into the preservation of both tangible and intangible aspects of biodiversity. This study emphasizes the critical role of ethnozoology in environmental conservation and healthcare, and it advocates for an interdisciplinary approach that combines traditional wisdom with modern scientific research and conservation efforts. It paves the way for future research into less well-documented species and practices, highlighting the importance of documenting, studying, and respecting these traditions in order to develop long-term healthcare solutions and conservation strategies.

Key Words: Ethnozoological traditions, Assamese tribes, Traditional ecological knowledge (TEK), Biodiversity conservation, Indigenous healthcare

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I. Introduction

A. Background Information

The state of Assam in the northeastern part of the country is well-known for its abundant biodiversity and vibrant cultural heritage. It represents a unique intersection of human and wildlife coexistence. This specific area, which is a part of the Eastern Himalayan biodiversity hotspot, is inhabited by a diverse range of plants and animals. These species play a crucial role in the daily lives and cultural traditions of the indigenous communities residing in Assam (Das, 2011). The field of ethnozoology, which focuses on the study of the dynamic connections between humans and animals, provides valuable insights into how societies perceive, utilize, and conserve wildlife (Alves & Souto, 2015). In Assam, the bonds between humans and animals are deeply ingrained in the customs and livelihoods of the local tribes, making it an ideal environment for conducting ethnozoological research.

B. Rationale for the Study

Documenting ethnozoological knowledge is of utmost importance due to multiple factors. Firstly, it contributes significantly to the conservation of indigenous cultural identities by providing a unique perspective on the intricate connections that exist between tribes and their natural surroundings (Rangel-Landa et al., 2022). Secondly, it plays a pivotal role in the preservation of biodiversity by offering fundamental data for the implementation of sustainable management practices that align with traditional ecological knowledge (TEK) (Adam et al., 2022). Despite its significance, the exploration of ethnozoological traditions among Assamese tribes remains limited, thus posing a risk of valuable knowledge erosion as traditional ways of life are increasingly affected by modernization (Stehr, 2001).

C. Objectives and Scope of the Review

This review endeavors to systematically investigate the ethnozoological practices prevalent among the diverse tribes residing in Assam. It aims to shed light on the cultural significance of these practices and elucidate their implications for conservation efforts. By amalgamating existing research, the study strives to (1) chronicle the diverse range of ethnozoological knowledge present within Assamese tribes, (2) scrutinize the cultural and ecological roles played by animals in tribal communities, and (3) identify opportunities for incorporating Traditional Ecological Knowledge (TEK) into contemporary conservation strategies.

D. Methodology Overview

The approach utilized for this examination entails an exhaustive exploration of scholarly databases, including Web of Science, Scopus, and Google Scholar, employing keywords pertaining to ethnozoology, Assam, and tribal communities. Specific criteria were established to encompass scientific articles and books. The extraction of data centered on categorizing the various ethnozoological practices, species involved, and the cultural backdrop of these interactions. The analysis was structured utilizing thematic synthesis, enabling the identification of patterns and deficiencies within the current body of knowledge.

II. Theoretical Framework

A. Definitions and Key Concepts

Ethnozoology investigates the diverse methods by which human societies comprehend, employ, and establish connections with animals. This field of study delves into the cultural, spiritual, and pragmatic facets of human-animal interactions, offering valuable perspectives on conservation, animal welfare, and the sustainable utilization of biodiversity. The knowledge derived from ethnozoology, encompassing traditional practices such as silk production and insect consumption, accentuates the fundamental role animals play in ecological equilibrium and cultural legacy (Alves & Souto, 2015).

Assam's cultural zoology is profoundly shaped by the abundant biodiversity it possesses, as well as the customary habits of its indigenous communities. The production of Muga silk, a form of sericulture, is a time-honored custom exclusive to Assam, which epitomizes the intricate bond between the state and silk moths. In addition, entomophagy, the practice of consuming insects, serves as another demonstration of the region's sustainable utilization of its biological resources. These practices extend beyond being solely economic pursuits, instead possessing cultural significance and contributing to the social and religious fabric of Assam (Tikader et al., 2013) (Chakraborty, n.d.).

B. Review of Related Literature

Ethnozoological investigations in Assam have traditionally directed their attention towards the sericulture and entomophagy customs prevalent in the region. Archival materials dating back to the Ahom dynasty (1228–1826) have chronicled the cultivation of Muga silk, which is an inseparable facet of Assamese culture. This esteemed silk is cherished not only for its economic worth, but also for its cultural and ceremonial significance (Tikader et al., 2013) (Chakravorty et al., 2010). The act of entomophagy, particularly the consumption of specific insects as delectable treats or dietary supplements, is an embodiment of the indigenous understanding of the local fauna and its nutritional value (Sarmah et al., 2022).

Recent studies conducted in Assam have shed light on the ecological and economic significance of conventional ethnozoological customs. The examination of Muga silk production has placed a particular emphasis on its role in the sustenance of rural livelihoods and the preservation of biodiversity, given that the Muga silkworm (*Antheraea assamensis*) is inherently suited to the distinct ecological conditions of the region (Tikader et al., 2013) (Goswami & Bhattacharya, 2013). Furthermore, contemporary investigations into entomophagy in Assam have revealed an intricate tradition of insect consumption, thus highlighting the

potential for sustainable protein sources and the conservation of age-old dietary practices (Rahman et al., 2018)(Narzari & Sarmah, 2015)(Sarmah et al., 2022). These practices are increasingly being acknowledged for their valuable contributions to food security, the conservation of biodiversity, and the perpetuation of cultural identity.

III. Analysis and Result

Ethnozoological Practices in Assamese Tribal Medicine

Our comprehensive investigation into the ethnozoological customs of Assamese tribes reveals a compelling tapestry of cultural zoology intricately interwoven into their healthcare practices. Encompassing eight scholarly publications, our study illuminates the intricate utilization of a wide range of species, comprising 125 distinct types across 66 families and 11 classes, meticulously employed in the treatment of an estimated 154 different ailments. This extensive variety reflects a sophisticated compendium of traditional knowledge, where each animal and its designated anatomical components are carefully chosen to address specific health conditions spanning from anemia and paralysis to hemorrhoids and jaundice.

The dataset, comprising a total of 187 records, comprehensively encompasses the indigenous knowledge of numerous tribes, such as the Bodo, Karbi, and Deori, among others, thus exemplifying a profound intertribal ethnomedical pluralism. Our meticulous categorization and correlation of ethnozoological resources with their corresponding therapeutic applications shed light on the intricate ethnomedical systems prevalent within these tribes. The findings of our analysis, which are presented in this document, provide a glimpse into the longstanding symbiotic relationship between the Assamese tribes and the natural world, as well as their dependence on its abundant resources for the purpose of healing and overall well-being (**Error! Reference source not found.**)

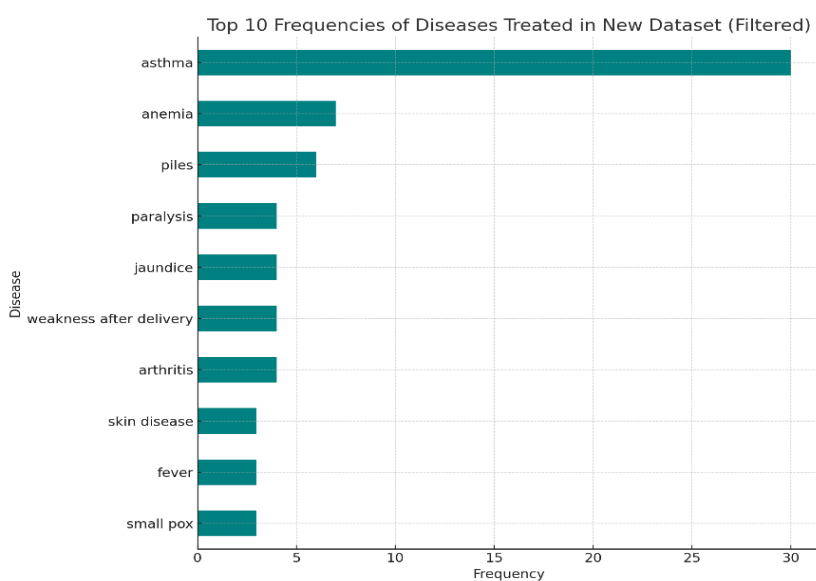


Figure 1: Top ailments treated by ethnozoological medicines in assam

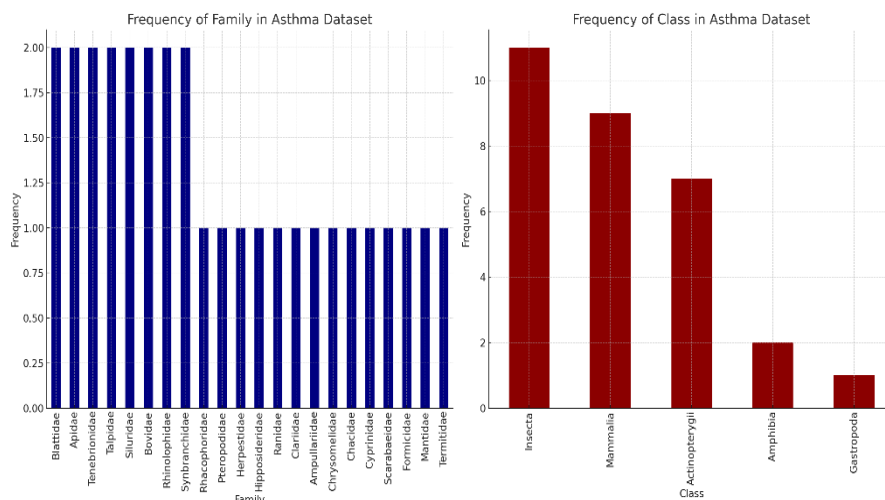


Figure 2: Family and classes of animal used in asthma

Utilization of Species for Asthma

Treatment of asthma by ethnomedicine have been studied well by (Chetia et al., n.d.) which s incorporated in this review, that is why the main data set shows bias towards it. If we look deep into the asthma data (**Error! Reference source not found.**) we can see certain pattern where insecta are used extensively to treat asthma mostly(Chetia et al., n.d.), asthma is also mentioned in another tqo paper (Paul, 2018)(Verma et al., 2014).

Utilization of Species for Anemia

The data indicates a all of them use of aquatic species from the Actinopterygii (fish) class mostly the Synbranchidae(Gogoi & Bora, 2020)(Teronpi et al., 2012)(BASUMATARY et al., 2023) and Cyprinidae (BASUMATARY et al., 2023)(Nasreen & Borah, 2023)families for the treatment of anemia. Notably, Heteropneustes fossilis (Clariidae) is prepared as a tonic by boiling(Nasreen & Borah, 2023), while Danio rerio (Cyprinidae) is consumed whole(BASUMATARY et al., 2023). These preparations suggest a cultural inclination towards utilizing freshwater fish, a staple in the Assamese diet, as a medicinal resource (Figure 3).

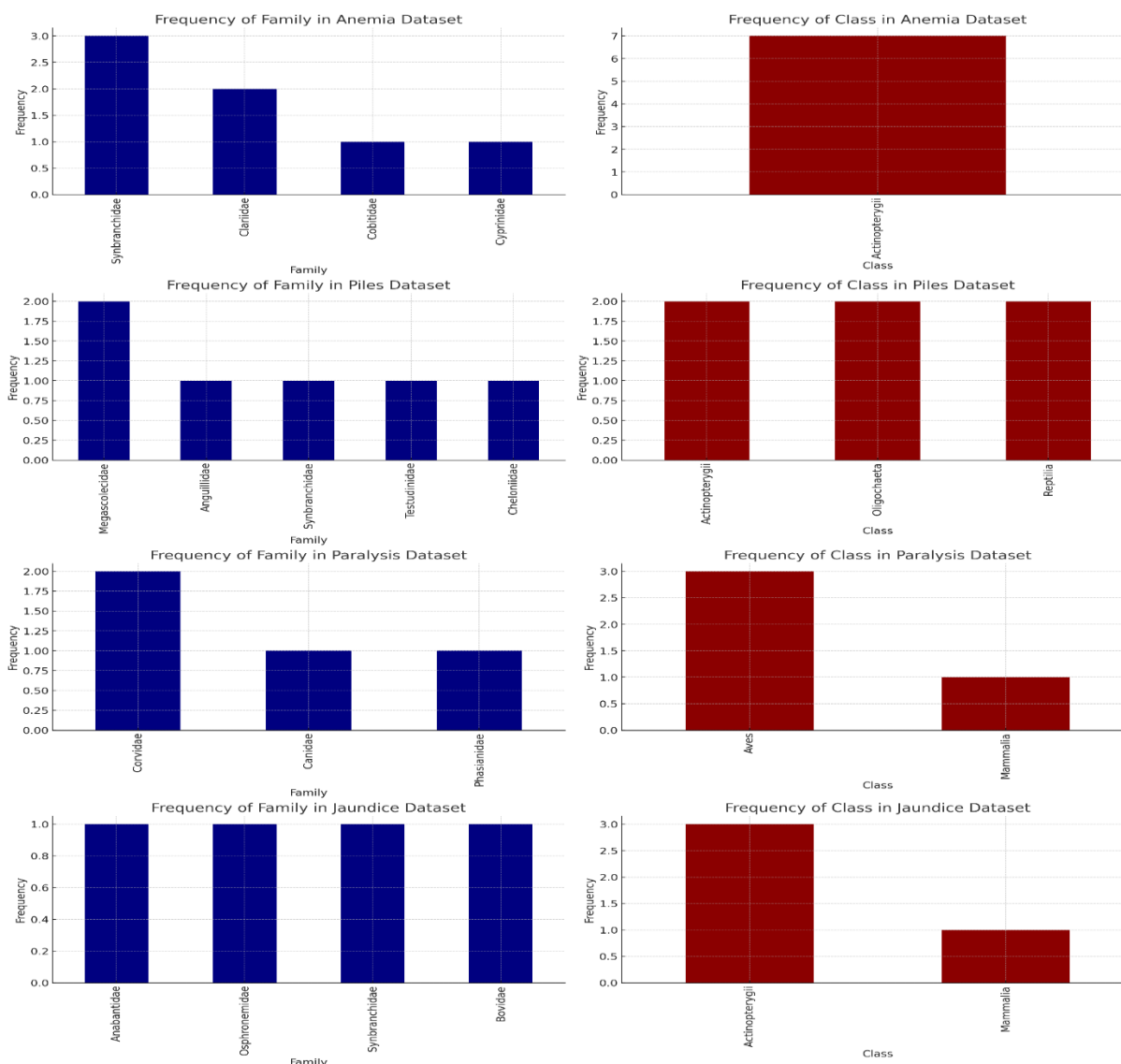


Figure 3: Looking deep into the family and class of animal used in treatment of 4 major ailments: Anemia, Jaundice, Paralysis and Piles

Ethnozoological Remedies for Paralysis

For paralysis, species from the Canidae and Phasianidae families, specifically *Canis aureus* and *Pavo cristatus*, are documented (BASUMATARY et al., 2023). The modes of preparation involve cooking the flesh of these animals, with the implication being the transfer of strength and vitality from the consumed species to the patient (Verma et al., 2014) (Paul, 2018). (Figure 3)

Treatment of Piles with Diverse Fauna

Our findings show that for piles, the tribes employ species from both aquatic and terrestrial environments. *Anguilla bengalensis* (Anguillidae) and several species from the Megascolecidae family are utilized. Interestingly, the mode of preparation for *Metaphire houletti* involves keeping the organism in salty water, signifying a unique method of extraction of medicinal properties (Paul, 2018) (Gogoi & Bora, 2020) (BASUMATARY et al., 2023) (Figure 3).

Addressing Paralysis with Avian and Mammalian Species

The treatment of paralysis showcases a reliance on avian species from the Columbidae family and the Phasianidae family's mammalian species. The ethnozoological practice here involves the cooking of flesh, indicating a belief in the curative properties of heat-treated animal protein (Gogoi & Bora, 2020) (Verma et al., 2014).

IV. Conclusions and Recommendations

A. Summary of Key Findings

Our thorough analysis emphasizes the critical role of ethnozoological practices in preserving the rich tapestry of cultural and biological diversity among Assamese tribes. The meticulous use of a wide range of species for healthcare exemplifies a deeply ingrained knowledge system that not only promotes biodiversity but also protects cultural heritage. This symbiotic relationship between people and their surroundings highlights the importance of ethnozoology in preserving both tangible and intangible aspects of biodiversity. Documenting and analyzing these practices provides us with invaluable insights into sustainable living and environmental conservation.

Our findings on the ethnomedical practices of Assamese tribes highlight the importance of traditional knowledge in the diagnosis, treatment, and prevention of various ailments. This ethnozoological knowledge, passed down through generations, demonstrates a deep understanding of the natural world and its therapeutic potentials. The reliance on diverse faunal resources reflects an empirical knowledge base that is both scientifically and culturally significant. These practices not only benefit community health and well-being, but also lay the groundwork for new directions in natural product research and drug discovery.

B. Future Research Directions

Despite the breadth of our research, there are several gaps that require further investigation. Ethnozoological practices have been documented in varying degrees, with some species and treatments receiving more attention. Future research should aim to fill these gaps by investigating less well-documented species and their applications, scientifically validating the efficacy of these traditional remedies, and documenting the oral histories and methodologies underlying these practices. Furthermore, there is a need to investigate the impact of modernization and environmental changes on the survival of these ethnozoological practices.

The breadth and extent of ethnozoological knowledge necessitate an interdisciplinary approach that incorporates methodologies from anthropology, biology, ecology, pharmacology, and conservation science. Such an approach can help us better understand the complex relationships between humans and animals, the bioactive properties of faunal resources, and the conservation implications of traditional practices. Collaborative research projects involving local communities, scientists, and policymakers can help reconcile traditional knowledge with modern conservation strategies, ensuring the conservation of biodiversity and cultural heritage for generations to come.

Finally, the ethnozoological practices of Assamese tribes provide a unique perspective through which we can understand the interdependence of cultural and biological diversity. By documenting, studying, and respecting these traditions, we can pave the way for long-term healthcare solutions and conservation efforts that honor both historical wisdom and future needs.

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