

Research Article

Use of Insects and Other Animals Classified as Insects by Quilombolas of the Community Barrinha Da Conceição in the Municipality of Juazeiro, Bahia, Brazil

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Abstract

This study records how quilombolas from Barrinha da Conceição use and perceive insects and how the 'insect' ethnozoological domain is built, and it also identifies sentiments that intermedate the relationship between the community and the local entomofauna. A total of 21 people were interviewed, who cited 12 species classified in the insect ethnozoological domain, and 07 invertebrates and 04 vertebrates used in traditional medicine and other cultural expressions. By recording traditional knowledge of the local population and their perception of insects, our study indicates the need for research that focuses on the diversity of insects and associated fauna.

INTRODUCTION

Ethnoscience is among the approaches that have most been contributing to the study of traditional knowledge [1]; in general, their focus is how traditional peoples use and manage natural resources through their beliefs, knowledge, perceptions, behaviors, and ways to classify, name, and identify the natural resources in their environments [2]. In the ethnoscience corpus, we understand ethnozoology as a transdisciplinary study of the relationship between human and animal populations, focused on ethnic groups with regards to knowledge, classification, use, and management of faunistic resources in the surrounding environment [3].

The use of insects, whether as food or in traditional medicine, is a historically ancient phenomenon widespread worldwide [4-11]. Out of the hundreds of thousands of insect species already recorded, over one thousand have been reported as food resources [12]. This is due to the high number of insect species, which occupy several terrestrial and freshwater ecosystems, and to their ability to adapt to several habitats and ecological niches [13], which makes this group an important food resource.

Therefore, the use of insects as food or medicine is a common practice in Brazil, and it is also present in quilombola communities [14].

This study aimed at checking the ethnoentomology of quilombolas from the community Barrinha da Conceição, situated in the city of Juazeiro, State of Bahia, recording how they perceive insects and how the construction of the 'insect' ethnozoological domain takes place. We also aimed at identifying the sentiments that intermedate the relationships between quilombolas from the community Barrinha da Conceição and the local entomofauna, and the different local insect uses, indicating benefits that these species might offer to the studied community.

MATERIALS AND METHODS

Barrinha da Conceição is a community located in the peri-urban zone of the municipality of Juazeiro, Bahia (09°27'46,7" S, 40°33'9,3" W; Figure 1). Residents of this community identify themselves as remnants of quilombos, communities that derived from slave resistance, located in the city of Canudos, hinterland of Bahia, in the period ranging from 1896 to 1897.

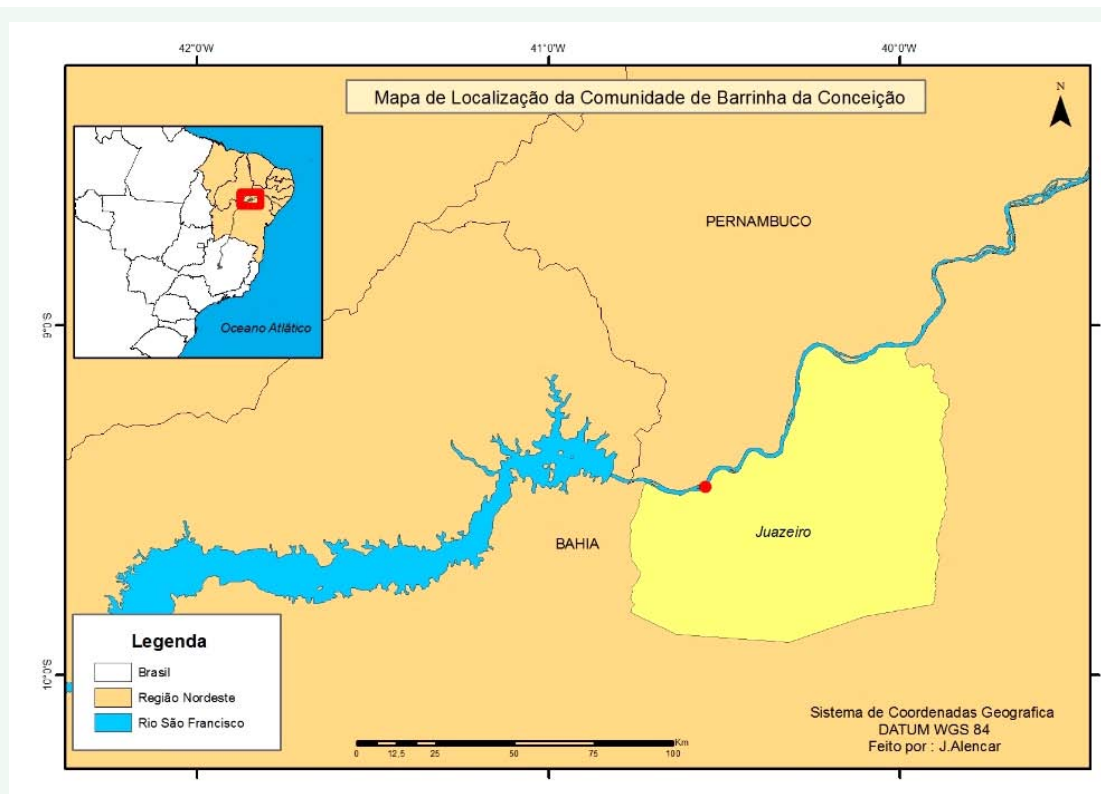


Figure 1 Map of the location of Barrinha da Conceição, Juazeiro-BA.

A census carried out in 2013 showed that the community is comprised of approximately 50 inhabitants, distributed in 10 families and nine households occupying an area of approximately 14.5 ha; land ownership belongs to Ms. Roberta and there were no landholding issues concerning land occupation [15].

Semi-directive interviews (with no formal script) were performed as an instrument of data collection [16] so that interviewees would feel comfortable to talk about their knowledge and use of entomofaunal elements. We explained the objectives of the research clearly at the beginning of each interview, and participants provided their consent by reading and signing a Free and Informed Consent Term (FICT).

The objective of the interviews was to record information on the use of faunistic components, using the emic approach [17]; we recorded the traditional view, i.e., how the community perceives, organizes, and manages their universe. Native expressions and words were maintained.

Sampling was intentionally non-randomized, i.e., interviewees were predefined [18]. For that purpose, we used the snowball technique [19]. Data were analyzed both qualitatively and quantitatively according to the union of all individual competencies model [20] where all information obtained is considered.

Traditional knowledge was historically reconstructed through bibliographical review, comparing the information acquired here to other studies addressing the use of insects as food and medicines by human beings, based on representations

of the perception that quilombolas from Barrinha da Conceição have on insects.

The understanding of traditional knowledge considers wisdoms and expertise linked both to the natural and supernatural worlds, disseminated from one generation to the next through oral tradition. Therefore, biodiversity comprehends not only natural resources but living beings, and has both a utilitarian and symbolic value in a cosmological dimension [21].

RESULTS AND DISCUSSION

We interviewed 21 community members, who mentioned twelve animal species classified as belonging to the 'insect' ethnozoological domain. Among invertebrates, the following were mentioned: centipedes (*Scolopendra* Gender), spiders (AraneaeOrder), scorpions (Scorpiones Order), the kissing bug (*Triatoma* Gender), bugs (Coleoptera Order), cockroach (*PeriplanetaAmericana*), and bee (*Apismellifera*), and among vertebrates, the cururu toad (*Rhinellanschneideri*), boa snake (*Boa constrictor*), the laughing falcon (*Herpetotherescachinnans*), and the barn owl (*Tito alba*) (Table 1).

The ethnospecies most frequently mentioned by respondents were: kissing bug (n=15; 71%), Jibóia (n=10; 48%), centipede (n=10; 48%), and scorpion (n=7; 33%). In a survey conducted in a quilombola community in Iraquara, Bahia [14], recorded 23 animal species classified in the 'insect' ethnozoological domain.

Regarding utility, 67% did not attribute any utility to insects; however, 24% of the interviewees mentioned bees (*Apismellifera* Linnaeus, 1758) as producers of honey, a source of food and

treatment against respiratory diseases such as the flu, asthma, and sore throat (Table 2). A study developed [22] mentions the food properties of bee pupae, which contain 18% of proteins and are rich in vitamins.

Regarding insects and healthcare, 33% of the interviewees considered all types of insects as disease-bearers. It is noticeable that in the community's imagination, there is a direct relationship between diseases and insects; however, 91% of the people involved in this research highlighted the therapeutic use of insect by-products.

Studying zootherapy among Pankararu Indians from the hinterland of Pernambuco [23], recorded the use of beehive honey in the treatment of bronchitis and whooping cough. Brazilian researchers reported that Pankararé Indians from Bahia use honey to treat tuberculosis, bronchitis, hoarseness, worm infestations, and diabetes [24]. All interviewees reported using cururu toad (*Rhinellaschneideri* Werner, 1894) to treat bladder disorders, corroborating the studies [25-26], who reported the use of toads in the treatment of several diseases.

The medicinal use of boa snake (*Boa constrictor* Linnaeus,

1758) was mentioned by respondents; its fat is used in the treatment of rheumatism (Table 2), which has also been described in previous studies [27,28].

In the semi-arid region of the Brazilian Northeast, animals are used as medicinal products in several localities [29], including traditional communities, which have historically used animal products for such purposes [30-32]. The importance of zootherapeutic products in traditional medicine in this region has been reported by several recent studies, both in rural and in urban areas [28-38].

Of the total interviewees, 67% reported reacting with fear when they see insects, showing that most of them project an attitude of fear towards the group of animals associated to the 'insect' group. Additionally, 24% of interviewees said that when they think of insects, they wish to kill them.

Animals are part of human culture, and are important elements in myths, legends, dreams, fantasies, histories, folklore, and art [39]. A large number of superstitions are linked to animals, to observing their habits, flight, or life pace; some are universal, others are restricted to certain regions or social groups, attributing good fortune and bad omen to certain animals [40].

Table 1: List of ethnospecies used by the quilombolas of the community Barrinha da Conceição, Brazil.

Taxon/ common name / local name	Taxonomic track	Use
Arachnida		
Spider "aranha"	<i>Araneae</i> Order Clerck 1757	Causes illness
Scorpion "escorpião"	<i>Scorpiones</i> Order Kock 1837	Causes illness
Chilopoda		
Centipede "lacrãia"	<i>Scolopendra</i> Gender Linnaeus 1758	Causes illness
Insecta		
Kissing Bug "barbeiro"	<i>Triatoma</i> Gender Laporte 1832	Causes illness
Bugs "cascudo"	Coleoptera Order Linnaeus 1758	Causes illness
Cockroach "barata"	<i>Periplaneta americana</i> Linnaeus 1758	Causes illness
Bee "abelha"	<i>Apis mellifera</i> Linnaeus 1758	Medicinal
Amphibia		
Cururu Toad "sapocururu"	<i>Rhinellaschneideri</i> Wemer 1894	Medicinal
Reptilia		
Boa snake, "jibóia"	<i>Boa constrictor</i> Linnaeus 1758	Medicinal
Birds		
Laughing falcon "acauã"	<i>Herpetotheres cachinnans</i> Linnaeus 1758	Medicinal
Barn Owl "corujarasgamortalha"	<i>Tito alba</i> Scopoli 1769	Bad omen; death

Table 2: Medicinal use of the ethnospecies classified by the quilombolas of the community Barrinha da Conceição, Brazil, as insects.

Taxon/ Local name	Part used	Purpose	How it is used
Insecta			
Cockroach	The whole animal	Flu, asthma, and sore throat	Roast, stamp, and brew it
Bee	Honey	Respiratory diseases	Consume it raw
Reptilia			
Boa snake	Fat	Rheumatism	Spread it over the affected area
Amphibia			
Cururu Toad	Skin	Bladder disorders	Skin tea

Mythology is constantly present in the lives of Brazilians, people and animals intertwine all the time; one example is Jurupari, which turns people into deer or any other game [41]. Brazilian folklore has countless animals that are mythological, which is not surprising in a country with such a rich fauna [40].

These premises also apply to our study community; when asked about stories and taboos involving animals, 24% said they know that the laughing falcon's cry (*Herpetotherescachinnans* Linnaeus, 1758), causes nerve diseases. A study mentioned the use of the laughing falcon in snake bite treatment [42].

Another species mentioned by respondents was the barn owl (*Tito alba* Scopoli, 1769), whose sad cry announces the death of a family member [43]. Specific behaviors of a species might raise fear or disgust, and this increases the harassment these animals are subject to; for example, the barn owl is considered ominous, and is therefore hunted, which consequently reduces local populations of this species [43,44].

CONCLUSION

Several studies have addressed the exploitation of animals used in popular medicine [45-47], since they are also generally used as food source. Such pressure, together with environmental factors, might favor the extinction of several species of the *caatinga's* wild fauna, mostly invertebrates, indicated here as belonging to the 'insect' taxonomy domain.

On the other hand, traditional medicine represents an important therapeutic alternative for the local population. Due to this reality, ethnozoological studies play an important role in the conservation of faunistic species by understanding how traditional communities use the local fauna, it is possible to pinpoint the most frequently explored animal groups or species and outline local conservation strategies, aiming at the sustainable use of these animals, among other things.

We suggest further in-depth studies about the knowledge and perception communities have of their surrounding environment, especially regarding the diversity of insects and associated fauna, using the ethnobiological methodology. Such studies might provide reflections on the wisdoms of quilombolas from Barrinha da Conceição, in order to perceive how nature is captured by members of this community, and might involve sociabilities, religiosities, knowledge, and symbolic forms in the relationships established between this group and animals in surrounding environments.

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