

Injuries caused by venomous animals and folk medicine in farmers from Cuité, State of Paraíba, Northeast of Brazil

Relatos de acidentes por animais peçonhentos e medicina popular em agricultores de Cuité, região do Curimataú, Paraíba, Brasil

Abstract

Injuries caused by venomous animals reported by the agricultural workers from the municipality of Cuité, Curimataú region of Paraíba State, Northeast of Brazil, and the practices of folk medicine which they use to treat these cases were studied in this work from June to August 2010. The farmers studied aged from 11 to 90 years. The number of people who reported cases of injury by these animals in their families was high (89.3%). Scorpions, wasps, bees and snakes were the most cited and the extremities of the body (hands, feet, legs and head) were the most affected. The practice of folk medicine to treat these injuries includes various procedures ranging from ritualistic treatments, use of animals or parts of them, and some herbal preparations. The folk treatment was reported as effective by most of the workers injured (63.9%). Body parts of dead snakes are used in various zootherapeutic treatments. In the imaginary of the agricultural workers the venomous animals are considered hazardous (48.7%) or disgusting (11.3%), and several parts of such animals as the rattle, bee sting or snake leather are used as amulet. Several legends have also been reported about snakes, scorpions and bees. The need for educational activities that aim to clarify these workers about the dangers of such practices is urgent.

Keywords: Caatinga. Venomous animals. Snake bites. Folk medicine. Zootherapy. Cuité.

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Resumo

Acidentes por animais peçonhentos ocorridos com agricultores sindicalizados do município de Cuité, região do Curimataú paraibano, e práticas de medicina popular por eles utilizadas foram estudadas neste trabalho, através de entrevistas livres e questionários semiestruturados durante o período de junho a agosto de 2010. A idade dos agricultores pesquisados variou de 11 a 90 anos e a incidência de pessoas que sofreram algum acidente com esses animais chegou a 89,3%. Escorpiões, marimbondos, abelhas e serpentes foram os animais mais citados. As extremidades do corpo (mãos, pés, pernas e cabeça) foram as regiões mais atingidas. A prática da medicina popular para tratar desses acidentes inclui vários procedimentos que vão desde tratamentos ritualísticos, uso de animais ou partes dele, até preparos fitoterápicos. O tratamento caseiro é reconhecido como sendo eficaz pela maioria dos que sofreram acidentes (63,9%). Serpentes mortas têm várias partes do corpo arrancadas e usadas em tratamentos zooterápicos diversos. No imaginário dos agricultores, os animais peçonhentos são vistos como perigosos (48,7%) ou nojentos (11,3%), e diversas partes desses animais como chocalho, ferrão da abelha ou couro da cobra são usadas como amuletos de sorte. Inúmeras lendas também foram relatadas com cobras, escorpiões e abelhas. A necessidade de atividades educacionais visando esclarecer esses trabalhadores sobre os perigos dessas práticas é urgente.

Palavras-chave: Caatinga. Animais venenosos. Acidente ofídico. Medicina popular. Zooterapia, Cuité.

Introduction

Notifications about injuries caused by venomous animals have increased extraordinarily, especially in the rural zone¹⁻⁴, and one of the main causes can be related to environmental changes caused by men⁵. Changes in rural environments reduce the quality and the availability of habitats, therefore, the contact between these animals and human being becomes more frequent.

Most of these incidents constitute a public health issue and take place especially in remote rural areas. Environmental changes caused by urbanization can favor the necessary conditions for the presence of snakes in the cities, which are added to deficient sanitary practices and the unawareness of the population concerning care and prevention practices^{6,7}.

An indeterminate number of incidents are not notified because patients do not look for health services (or medical-hospital care). Besides, knowing how local populations deal with these incidents becomes relevant, because many of the practices they use to treat these cases can bring complications to health, putting people's lives at risk. Such practices need to be catalogued, since they can be useful in educational preventive programs.

Snakes and some arthropods stand out among the venomous and poisonous animals causing injuries in Brazil, particularly scorpions and spiders². To a lower degree, scolopendras (centipedes), some hymenoptera (bees, wasps and ants) coleopteran (beetles known as *potós*) and urticant Lepidoptera (fire caterpillars).

The agriculture and cattle farming activities without the use of personal protective equipment increase the exposure to venomous animals, which contributes with the increased number of accidents⁸.

Official data indicate that only ophidian accidents account for an average of 28,000 cases per year in Brazil, with lethality close to 0.4%^{9,10}. They are mainly caused by snakes of the genders *Bothrops*, *Crotalus*, *Lachesis* and *Micrurus*^{3,6,7,11-16}, and the first one responds alone for approximately 85% of the poisoning cases caused by venomous snakes^{17,18}.

The genders *Bothrops* (jararaca) and *Mucrurus* (coral snake) can be found all over the national territory, while the gender *Crotalus* (rattlesnakes) is especially distributed in the Southeast and the South. *Lachesis* (surucucus) are present in the Amazon region and in areas of Atlantic forest remnants¹⁹.

In the Northeast region of Brazil, accidents caused by venomous animals are common. The immediate treatment used by rural works and urban dwellers usually includes the use of folk medicine, supplemented by magic recipes and religious rituals. These practices are used to fight several health issues, including the treatment of injuries caused by venomous animals⁸.

They integrate the so called Traditional Medicine (TM) and consist of a holistic healing system involving phytotherapy, religious medicine, magical medicine and zootherapy^{20,21}. Its applications cover the body, the mind and the soul²²⁻²⁴, and are based on theories, beliefs and native cultural experiences, which can be explained or not. They are used to maintain health, diagnosis, prevention or the physical, mental or social elimination of diseases, exclusively acquired by practical experience and observation, and transmitted verbally or in written form from generation to generation²².

In Brazil, the use of products deriving from folk medicine was registered much prior to colonization²⁵. Indigenous peoples used them to heal diseases or to make potions that "purified" the spirit²⁶. According to the Ministry of Environment, at least 150 products of vegetal origin are recognized by the World Health Organization (WHO) as having real therapeutic value²⁶. Besides plants, animal products are also popularly used to fight several diseases^{21,27,28}.

In the State of Paraíba, studies about folk medicine practices are incipient, and the few papers about the matter have been conducted with indigenous ethnicities²¹. Besides, little is known about the incidents caused by venomous animals amongst farmers in the State, and none of them, so far, relates the practices of folk medicine used to treat such incidents.

This article reports incidents caused by these animals among union farmers in the city of Cuité, Paraíba, and emphasizes the practices used by workers affected by such incidents, pointing out aspects of zootherapy and ritualistic medicine.

Methods

The study was developed with union farmers in the city of Cuité (6°28'53,94" S and 36°08'58,87" W), located in the mesoregion of *Agreste Paraibano* and in the microregion of Western *Curimataú*. The region is inserted in the Caatinga biome, and the climate is semiarid. The annual pluviometric precipitation is 916.30 mm, and the monthly average is 76.35 mm. Because of its latitude, the temperature always ranges between 17 and 28°C.

The whole region presents expressive areas of environmental degradation, which indicates that the process of converting the natural environment for human purposes has been intensified. Data from the Brazilian Institute of Geography and Statistics (IBGE)³⁰ show that approximately 38% of the territory in the city is covered by natural pastures and woods, 13% of natural forests, 15% of temporary farming land, 5% of permanent farming land, and 2% of planted pasture.

Manioc, beans, corn and fava beans represent the main cultivars, but fruit farming is developed in many locations, especially passion fruit and cashew. Bird, cattle and goat breeding represent the highest indexes of local husbandry.

This study was developed from June to August 2010 and involved 150 union farmers in the city of Cuité, Paraíba, living in two agricultural villages (Melo and Bujari), two settlements (Campo Comprido and Cabaças), two urban neighborhoods (Eucalipto and São José) and two country houses in the city (Campo Comprido and Muralhas).

The adopted procedure was based on the performance of free interviews and the application of semi-structured questionnaires, and this technique is commonly used in similar studies^{8,31,32}.

Interviews were aimed at facilitating the relationship between interviewer and interviewees and were recorded in electromagnetic equipment and/or by writing the reported information. Records were transcribed, and the fidelity of expressions and native words was maintained. For free interviews, the semi-structured questionnaires were applied, and the objective was to detail the socioeconomic conditions of the interviewees, the frequency of injuries caused by venomous animals, the type of animal that caused the incident, the affected body part, the procedures adopted to relieve the symptoms, among others. All of the interviewees answered the questionnaires and gave their opinions about it.

Besides, data about the perception of farmers as to venomous animals and about the practice of folk medicine were collected, including, in this case, the way they see these animals, the knowledge they have about legends and myths involving them, their use for medicinal purposes, as well as the efficacy of the used treatment and the way such knowledge is socialized between family members, among other aspects.

Each interview lasted about 20 minutes, and this time was necessary for the interviewer to explain the objectives of the research and to ask the proposed questions. The farmers were free to give opinions they considered to be important at the time of the interview. Interviews occurred in their own houses. The research was approved by the Research Ethics Committee of *Universidade Federal da Paraíba*, protocol n. 0599.0.126.000-10.

The statistical data analysis was performed by applying simple frequency tests, with the software Excel 7.0. All of the obtained quantitative data represented the answers of the interviewees.

Results and Discussion

Most interviewees are married (62.0%), and most of them are male, which reflects the predominance of male workers in local farming (52.0%). Most participants are catholic (92.0%), with low schooling (48.0% studied from the 1st to the 4th grade) and illiterate

(34.0%). Most have their own houses (93%). They live in masonry houses (92.%) covered with roof tiles (96.7%). The age group of the interviewees ranged from 11 to 90 years old, and most of the injured ones were aged between 51 and 60 (25.0%), 41 to 50 (22.0%) and 31 to 40 years old (22.0%). Thirty three percent of the interviewees live in the city of Cuité; 31%, in agricultural villages, 20.0%, in settlements, and 16.0%, in country houses.

Interviews revealed a higher percentage of injuries with venomous animals among male participants (52.0%). Such finding is in accordance with all of the national samples, and it is probably due to the higher frequency of men in field-related activities. A high frequency of incidents involving individuals aged between 10 and 15 or 49 and 50 years old has also been reported^{13,17,33-37}.

Out of the interviewees, 89.3% informed they have suffered some sort of injury caused by these animals, and most of the incidents happened at work (78,7%). However, their perception is that these cases have been decreasing, because the number of animals, especially snakes, has been decreasing as well, as pointed out by 57.4% of the interviewees. They think it is because they are killed (17.1% of the answers) or because there is no food for them in the drought period (13.4%), or even because of deforestation (8.5%).

The main venomous animals involved in these accidents were scorpions, bumblebees, bees and snakes, and the first ones represented 58.9% of the answers of the interviewed farmers.

Among Scorpions, most of the incidents were caused by the yellow scorpion, possibly the *Tityus stigmurus* Thorell species, 1876 (50.3% of the cases), followed by the black scorpion *Bothriurus* spp. (8.6% of the cases), however, many of the interviewees could not remember if the scorpion was yellow or black.

This information was checked from contacts made with the Toxicology Assistance Center in Paraíba, associated with the University Hospital *Lauro Wanderley*, from UFPB, due to the difficulty to identify the scorpions based on the description of the farmers, and because the color of the animal cannot be used as a reliable parameter for such purpose.

Despite the high frequency of incidents caused by these animals, farmers reported they are not dangerous, and that incidents occur when they are conducting their daily activities. This situation suggests the non-use of personal protective equipment, especially in areas of manual agriculture.

Considering these observations, the use of specific protective equipment, such as leg protectors, over knee boots and gloves, as well as the use of hoes and shovels to remove waste and grass, could contribute with the reduction of incidents caused by these animals.

Accidents with bumblebees and bees (Hymenoptera) were reported by 51.5% and 39.6% of farmers, respectively, and the head was the most affected body part. Even though they are not dangerous animals, an attack could be fatal in cases of hypersensitivity. If allergic processes are triggered in the victim, which can be promoted by a single sting or by many bees, in cases of swarms, the victim can even die due to glottis edema or anaphylactic shock^{10,38}. The easy locomotion and ubiquity of these insects, which colonize trees, linings and other shelters, increase the chances of contact with human beings³⁹.

Fifty-seven interviewees (38.8%) mentioned they were injured by different species of snakes, including: the coral snake (possibly *Micrurus lemniscatus* - Linnaeus, 1758 - 6.7% of the cases); rattlesnake (possibly *Crotalus durissus* - Linnaeus, 1758 - 7.5% of the cases), *guipeba* snake, which, according to them, is the young jararaca (1.5% of the cases); jararaca (possibly *Bothrops jararaca* - Wied, 1824 - 14.2%); *malha de cascavel*, which, according to them, is the same jararaca (3.7%); *corre-campo* (possibly *Thamnodynastes pallidus* - Linnaeus, 1758 - 2.2%); green snake (possibly *Philodryas olfersii* - Lichtenstein, 1823 - 2.2%); *jararacuçu*, which, according to farmers, is the Neuwied's lancehead (0.7% of the cases) and the water snake (possibly *Helicops modestus* - Günther, 1861 - 1.5%).

The gender *Bothrops* was responsible for most of the injuries involving venomous snakes, which confirms data from other regions in the country for the rural zone⁴⁰. Due to the ability to adjust to different types

of environments, the snakes of this gender can be found in several locations.

As mentioned by the farmers, the lower limbs, especially feet, were the most affected body parts, and this fact confirms what has been reported by other authors^{2,3,5,6,13,14}. In the 30,037 incidents notified from June 1986 to December 1987 to the Ministry of Health in Brazil, 58.0% of the bites were aimed at the feet or legs, therefore, below the knee¹⁷. This is due to the terrestrial habits of the Brazilian venomous snakes and to their ability to behave defensively even at a certain distance, which usually is no further than one third of its length⁴¹.

According to the reports, most incidents took place during the rainy season, when the workers dedicate to preparing the land and caring for the farming. Among the interviewees, 69.3% reported that in this time of the year, venomous animals appear in greater numbers. Data from literature indicated that the warm and rainy weather corresponds to the most active period for *Bothrops* spp.⁴². The seasonality of the incidents seems to depend more on environmental conditions and the activity of the men. Venomous snakes have evening and night habits^{11,40}, so incidents during the day are related to the highest level of activity of the men during the day in the field.

Several farmers reported having been attacked by these animals more than once, and even that family members died due to such incidents. In the village of Melo, out of the five reported cases of death, four were caused by snakes and one by a spider. Victims were male, and 60% of them looked for medical care usually 24 hours after the accident. The gender of the animal was not identified. In the settlement Cabaças and in the country house Campo Comprido, the cases of death reported by the interviewees were caused by snakes (Table 1).

Most of the incidents caused by venomous animals (33.6%) represent old reports (that took place a long time ago), however, many interviewees (24.6%) claim that incidents are frequent. As reported by them, they were more frequent at work (78.7%), since the activities of the farmers increase the possibility

of getting in touch with these animals. This is probably due to the environmental degradation, which contributes for the decrease of the natural habitat of these animals.

A total of 58.2% of the injured people looked for medical care, but only 23.1% looked for immediate help. The low search for medical care, especially in cases of snake bites, can justify the cases of death in the region.

The time between the incident, assistance and type of poisoning can increase lethality rates in up to eight times, such as crotalic poisoning, when medical care is conducted more than 6 to 12 hours after the incident (4.7%). The frequency of sequels related to local complications is much higher (around 10%) for bothropic incidents, associated to risk factors such as the use of tourniquet, bites on extremities, (fingers and toes) and late administration of serum therapy^{17,44}. Most interviewees (82.8%) claimed to have killed the animal, but the animal was not taken for the possible identification of the doctor (56.7%). All of those who looked for care were treated,

and hospitalization occurred in 36.6% of the cases; maximum hospital stay lasted 1 to 5 days (42.9%).

Many interviewees consider venomous animals as being dangerous (48.7%) or disgusting (11.3%) since cases of incidents with these animals are common in the region, leading to death and/or sequels that can cause temporary incapacity for work and other labor activities.

Folk treatment for incidents with these animals include the use of tobacco, spitting on the mouth of the bitten person, standing on top of a chair, urinating on the wound, drinking *cachaça* with garlic, using indigenous lard and alcohol on the sting and, in case of bumblebees, putting the hoe on top of the wound (Table 2). Most interviewees claimed that these folk medicine practices are efficient (63.9%), and 70.5% of them recommended their use for other people.

Specialized literature indicates that, in cases of bothropic accidents, it is not safe to wear a tourniquet (garrote); it is not recommended to cut or cause any type of

Table 1 - Incidents caused by venomous animals and total number of deaths for each location as reported by union farmers in the municipality of Cuité, Paraíba State, throughout June and August 2008.

Tabela 1 - Casos de acidentes por animais peçonhentos relatados pelos agricultores sindicalizados do município de Cuité, Paraíba, durante entrevistas no período de junho a agosto de 2010 e totais de óbitos em cada localidade pesquisada, conforme relatado pelos entrevistados.

Locations	Venomous animals						n	Deaths
	Scorpions	Bumblebees	Bees	Snakes	Spiders	Scolopendra		
Village - Agromelo	34.0%	22.0%	14.0%	24.0%	4.0%	2.0%	50	5 (10.0%)
Village - Bujari	25.0%	35.6%	21.4%	11%	3.5%	3.5%	28	-
Settlement - Campo Comprido	30.3%	27.3%	15.1%	15.1%	6.1%	6.1%	33	-
Settlement - Cabaças	20.6%	17.6%	23.5%	23.5%	11.8%	3%	34	2 (5.9%)
Bairro Eucalipto Cuité, Paraíba	29.5%	22.7%	20.4%	22.7%	4.5%	-	44	-
Neighborhood - São José Cuité, Paraíba	30.4%	17.4%	26.1%	19.6%	4.3%	2.2%	46	-
Country house Campo Comprido	27.0%	23.1%	19.2%	30.7%	-	-	26	2 (7.7%)
Contry house Muralhas	28.6%	33.3%	4.8%	19%	14.3%	-	21	-

wound on the place of the sting, and the injured person should not have tranquilizers or alcoholic beverages, or any other drinks. No substances should be placed on top of the sting, be them ointments, tobacco, ashes or any other product¹⁹. Such recommendations are opposed to the folk medicine practices that have been adopted by the union farmers in the city of Cuité, and indicate that their attitudes should not be advised, since they offer risks for secondary complications¹³.

In the State of Bahia, there are reports of similar practices⁴⁵ and, in cases of incidents with scorpions, it is common to use little known procedures, such as “going on top of a high surface and look at the sky”, “going on top of a high surface and jump”, “jump around”, or even “stand taller than the scorpion”. Other procedures include catching the dead animal, macerating it and applying the mass on top of the wound, or the use of garlic and maceration of green leaves of local plants on top of the sting as palliative processes. There is also the

ingestion of counter poison (substances with neutralizing effect for venoms) and sugar-cane rum, besides the use of sugar-cane rum on top of the sting. Many of these procedures were also reported in this study (Table 2).

A small group of people (7.5%) also claimed to have looked for the help of *rezadeiras* and healers of the region, since they believe these professionals possess some sort of mystical knowledge able to promote heal, therefore, they trust them. Several legends have also been reported, especially in cases of incidents with snakes, scorpions and bees (Table 3), and the most mentioned ones were: the one about the “coral snake” — when it bites a person, it only leaves the rooftops when the coffin of the dead person is removed from the house” (67.45%); and the fact that “people who are healed from snakes can spit on the mouth of whoever is bitten, and this person will be healed” (58.1%); also, “if you put a cigarette in the mouth of a snake, it dies” (18.6%).

Table 2 - Folk medicine procedures adopted to treat incidents caused by venomous animals, as reported by union farmers in the municipality of Cuité, Paraíba State, based on interviews performed throughout June and August 2008.

Tabela 2 - Procedimentos da medicina popular utilizados pelos agricultores sindicalizados do município de Cuité, Paraíba, para tratamento de acidentes por animais peçonhentos. Dados obtidos por entrevistas realizadas no período de junho a agosto de 2008.

Animal that caused the incident	Adopted folk medicine practice	% provided answers
Snake	“Spit in the mouth of the stung person”	26.2
Snake	“Rub and chew tobacco”	9.8
Scorpion	“Going on top of a high rock”	8.2
Bee/bumblebee	“Rub alcohol”	8.2
Bee/bumblebee	“Rub ointment”	8.2
Scorpion	“Put a rock on top of it”	6.6
Scorpion	“Standing on top of a chair”	6.6
Scolopendra	“Rubbing herbs”	4.9
Bee/bumblebee	“Place the hoe on top of the wound so it does not swell nor get infected”	4.9
Bee/bumblebee	“Wash the face with water and sugar”	3.3
Snake/Scorpion	“Drink <i>cachaça</i> with garlic”	3.3
Bumblebee	“Urinate on top of the sting”	1.6
Bee/bumblebee	“Wash it with water, soap and iodine”	1.6
Bee/bumblebee	“Put indigenous lard and alcohol”	1.6
Bee	“Rub salt”	1.6
Bee/bumblebee	“Wash it with serum”	1.6
Bee/bumblebee	“Rub gel”	1.6

Most farmers do not believe that carrying around a part of the venomous animals can bring luck, but a small group of interviewees (8.7%) stated that they usually wear such items as lucky charms, especially the rattlesnake bell (69.2%), besides the bee stinger, leather and the snake eye.

All of these adopted practices are incorporated in the concept of Traditional Medicine (TM) and its use in our country can be explained by the many cultural traditions, as well as because of the costs of the allopathic treatments. The diffusion of TM among less favored social classes is associated with the difficulty faced by these people to get the proper medical care in public health institutions. Besides, the religious syncretism inherited from native peoples and colonizers are factors that are part of popular culture. In this case in particular, faith interacts with the healing procedure in many religious rituals which count on the participation of healers. In such practices, the use of natural resources is frequent⁸.

In Brazil, there are references of similar practices among inhabitants of Paraíba and Maranhão, who use escalopendras to relieve the pain caused by injuries due

to insect stings and snake bites. In these cases, the animal is put in alcohol and the solution is rubbed onto the affected area. These people also use the skin of the raccoon (*Procyon cancrivorus* - G. [Baron] Cuvier, 1798) as a lucky charm to protect against snake bites²¹. Another zootherapeutic application of this product is to treat thrombosis, and, in this case, it is prepared as a tea²¹. Such practices were not reported by the rural workers of Cuité.

Concerning other folk medicine practices, it was observed that the union farmers of the city of Cuité include several types of animals that are used for different medical purposes. Snakes are most frequently used, and most of the zootherapeutic products come from hunting these animals. Therefore, local farmers use hunting activities in order to obtain food and medicines.

Obtaining medicines lies on the use of entire species, or different parts of them, which can be employed in several ways. The most common preparation used by the union farmers of the city of Cuité was lard (fat) (Table 4). This form of zootherapeutic use is also reported in several studies⁴⁵⁻⁴⁷.

Table 3 - Folk legends about venomous animals narrated by union in the municipality of Cuité, Paraíba State, based on interviews performed throughout June and August 2008.

Tabela 3 - Lendas relatadas pelos agricultores sindicalizados do município de Cuité, Paraíba, sobre animais peçonhentos. Dados obtidos por entrevistas realizadas no período de junho a agosto de 2008.

Legends/Recipes	% provided answers
"when the coral snake bites a person, it only leaves the rooftops when the coffin of the dead person is removed from the house"	67.4
"people who are healed from snakes can spit on the mouth of whoever is bitten, and this person will be healed"	58.1
"If you put a cigarette in the mouth of a snake, it dies"	18.6
"Burning an oxhorn sends away the snakes"	9.3
"When someone is bitten by a snake, they can't drink water"	7.0
"If a bee stings our bellybutton, you die"	7.0
"When a snake bites someone and this person sees a woman, the situation gets worse"	7.0
"When a bumblebee stings, the person spends three months without fever"	4.7
"When a snake bites, she should be placed dead upside down, so the person will not feel anything"	2.3
"If you are stung by a pregnant scorpion and does not kill it, you don't feel anything"	2.3
"When an animal is bitten by a snake, we wash a cat and put the water for the animal to drink it"	2.3
"There is a snake here in Serra das Cabaças that whistles"	2.3
"There is a giant snake in the road of Cuité"	2.3

Among animal resources, or part of them, used with medical purposes, snake lard, fox lard, tortoise and lizard lard are the most frequent ones (Table 4). In local fauna, snakes (Reptilia) stand out as being significant resources for the inhabitants, especially those in the rural zone of the city, where these animals are used as medicine. The main used species is the rattlesnake (*Crotalus durissus* - Linnaeus, 1758 - Viperidae family), being useful to treat asthma, healing back pain, throat problems, ear infection, rheumatism, redness, inflammation and cancer. The used procedure to obtain the product, according to some of the interviewees, is to kill the animal, to remove all of the fat and to set it on fire until it becomes a resistant liquid product, which is stored in PET bottles and consumed when necessary. According to the farmers, these products should be stored in fresh environments.

C. durissus (Linnaeus, 1758) is referred to as being one of the most used snakes in

folk medicine of other regions²¹. Products deriving from *C. durissus* and the centipede *Scolopendra* sp (Scolopendridae) are used for several conditions, as well as to treat for reactions caused by insect stings and snake bites. Many other animals, such as scorpions (Scorpionidae), lizards (*Tupinambis teguixin* sp. - Linnaeus, 1758) and alligators (*Paleosuchus palpebrosus* - Cuvier, 1807) are also used as zootherapeutic products to treat injuries made by snake bites. The same animals are used to treat several types of diseases in different locations of the northeast region of Brazil²¹.

The study reflects the point of view of local communities living in the semiarid region of Brazil. For a long time, they have been to the margin of national public policies. The identified cases report a public health issue that has been affecting remote rural areas, where there are scarce epidemiological data related to the matter.

The knowledge of these communities must be studied, since many of them can be

Table 4 - Animal resources used in folk medicine by union farmers in the municipality of Cuité, Paraíba State, based on interviews performed throughout June and August 2008.

Tabela 4 - Recursos faunísticos utilizados na medicina popular pelos agricultores sindicalizados do município de Cuité, Paraíba. Dados obtidos por entrevistas realizadas no período de junho a agosto de 2008.

Taxonomic group	Popular name	Zoological identification	Used part	Medical purpose	% Answers
Amphibian	Frog	Unidentified	Lard	Healing wounds	4,5
				Back pain	9.1
				Throat problems	13.6
				Ear pain	6.8
Reptile	Rattlesnake	<i>Crotalus durissus</i> Linnaeus, 1758	Lard	Tiredness (Ashtma)	27.3
				Cancer	2.3
				Inflammation	6.8
				Redness	2.3
				Rheumatic pain (Rheumatism)	4.5
Reptile	Snake	Unidentified	The whole animal	Throat pain	9.1
				Healing paraplegia	2.3
Reptile	Lizard	<i>Tupinambis meriana</i> , Duméril & Bibron, 1839	Lard	(Rheumatism)	4.5
Reptile	Tortoise	Unidentified	Lard	Fights throat crisis	2.3
Mammal	Fox	<i>Cerdocyon thous</i> , Linnaeus, 1766	Lard	Treating hemorrhoids and worms	6.8

of scientific interest. With them, it is possible to learn several applications for local flora and fauna. Given the speed with which natural environments are being converted to human purposes, many of these resources can disappear even before its real importance is recognized. However, many uses for these natural resources, and many therapeutic practices such as the ones presented in this study, are myths and legends. This justifies the need to increment preventive educational processes to these communities, aiming to provide

better quality of life and health conditions for the population.

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