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Survey for the Usage of Arthropods in Traditional Medicine in Southwestern Nigeria

O.A. Lawal and A.D. Banjo
Department of Plant Science and Applied Zoology,
Olabisi Onabanjo University, Ago Iwoye,
P.M.B. 2002, Ogun State, Nigeria

Abstract: A survey of arthropods used in traditional medicine was carried out among the people of southwestern Nigeria to examine the importance of arthropods and their by products in life and economy of the people and to provide a compendium of the traditional use of arthropods and their byproducts for future references. Open ended structured questionnaires were administered to elicit information from the rural based herbalists, farmers and those traders in animals for traditional purposes. Seventeen different species of insecta, two species of Myriapoda, one species of Crustacea, one species of Arachinda and three species of Mollusca used in the curing of ailments such as eye defects, various sickness in children, libido in men, arthritis, dizziness, thunderbolt, bedwetting, wounds, mental illness, child delivery, yellow fever, healing of bone fractures etc. Nine species of insects, two species of arachinda, one species of myriapoda and two species of Mollusca were used for rituals such as for defense, coronation, chieftaincy, wedding and naming ceremonies, good fortune, to fight against enemy and favour, forceful command and blessing and detection of thunderbolt (Magun) and for finding, husband and wife, appealing to gods and witches, soothsaying (Afose), to invoke mental development on people and money rituals, appealing to witches for spiritual protection and prosperity, used to confer immunity on man against infectious disease. Few species of insects in particular has some taboo associated with the use in traditional medicine. The results suggest that more research should be done in this area to bring back the ethnozoological knowledge of vanishing culture.

Key words: Arthropods, traditional medicine, Southwestern, Nigeria

INTRODUCTION

The science of ethnozoology deals with how human being, manage, classify and use animal species, both wild and domesticated for human healing and rituals or sacrifices and magical purposes. The name given to the medicinal usage of animals and its derived products is zootherapy Marques (1994). Since ancient time animals and the products derived from different organs of their bodies have constituted part of the inventory of medicinal substances used in various cultures, such uses still exist in ethnic folk medicine. The phenomenon of zootherapy is widespread; it has only recently aroused the interest of researchers from various branches of science. Some are focusing on its cultural aspects, while others are studying the pharmacological effects of the substances involved (Werner, 1970; Bisset, 1991; But *et al.*, 1991; Lazarus and Attila, 1993; Chen and Akre, 1994; Baldwin, 1995; Rodrigues and West, 1995).

Adekoya (1983) reported that the medicinal uses of animal vary greatly from place to place. Adeola (1992) reported that farmers attested to the fact that when some ailment or disease are not

curable through orthodox medicine they are usually treated locally with the use of animals, (both parts and whole) and plants and their derived products that are found in nature. The use of animal for food and traditional medicine are however the most prevalent (Sodeinde and Adedipe, 1994). Sodeinde and Soewu (1996) reported that some domestic and wild animals are being consumed for various purposes such as food or materials for preparation of preventive and curative medicine for fertility in women, aphrodisiac and potency medicine for men, appeasing and invoking spirits of traditional gods and for cultural or ritual purposes. Marque (1994) reported that all human civilization with a structural medical system will utilize animals as medicine. Indeed animal based medicine have always played a significant role in healing practices, magic, rituals and religious of indigenous and western societies all over the world (Weiss, 1947; Angeletti *et al.*, 1992; Rosner, 1992). Animals are therapeutic arsenals that play significant roles in the healing practices of people in Brazil (Costa-Neto, 1999). The local people have learnt over millennia how to identify plants and animals for various purposes as they have to rely on the vegetation and existence of animals for food and their medicine and all other necessities of life. Traditional folk knowledge of Arthropods is the sum of attitudes, opinions, belief and custom handed down from generation to generation on arthropods usage in a given society. Insects are used to cure different types of ailments, for example. *Camponotini brutus* for treating wounds, *Belanogaster* sp. for treating various diseases in children (Banjo *et al.*, 2003). Further stated that apart from the frequent consumption of termite and cricket among the Remo's they are still used for rituals just like wild animals and their products. Lawal *et al.* (2003) reported the traditional utilization of Honeybee among the Ijebu's which include for ritual, forceful command, defense and favour. The traditional medicinal purpose of insects among the Ijebus include spiritual protection, concoction preparation of prosperity medicine, appeasing to witches, preparation of love medicine, treatment of eye and ear defects prevention and control of convulsion (Banjo *et al.*, 2004a). Soldier ants, Dragonfly and Isoptera possessed the characteristics of various animals, plants and insects for medicinal, rituals and other traditional purposes, (Banjo *et al.*, 2004b-d). However, the time has come to record indigenous knowledge and the use of arthropods in traditional medicine in Southwestern Nigeria and possibly devise strategies to exploit these natural resources more sustainably.

The study was carried out to:

- Know the values of arthropods among the indigenous people of south western Nigeria;
- Find out whether arthropods are used in their folk medicine;
- Know about the remedies made from arthropods and the ailments for which they are used to cure/treat;
- Find out how the medicines were prepared and administered;
- Find out whether they are used for other purposes such as ritual, religious etc and
- Know whether there are taboos associated with the use of arthropods traditionally.

MATERIALS AND METHODS

Field work was conducted using a structured interview scheduled to elicit information from the indigenous people of different ethnic groups in south western Nigeria. Visits were made to city's main markets to interview the traders and the sellers, also the traditional rulers, herbalists and farmers asking them what they know about arthropods, whether they used them in their folk medicine, the remedies made from arthropods and the types ailments they are used to cure/treat. How the medicines were prepared and administered. What other cultural purposes arthropods are used for such as ritual, religious etc. Any taboo associated with the traditional use of arthropods. Before the interview was conducted, we introduced ourselves and asked our informants for permission to record the

conservations and take the photographs where necessary. Arthropods samples were purchased from different areas were identified in the Zoological museum with zoological references of Department of Plant Science and Applied Zoology, Olabisi Onabanjo University, Ago Iwoye, Nigeria and Entomological Research Laboratory of Cocoa Research Institute of Nigeria.

RESULTS

The study reveals the indigenous usage of arthropods and their by products among the indigenous people of Yoruba tribe, Nigeria.

Table 1 shows the list of arthropods used for therapeutic purposes and how the medicines were been prepared and administered among the indigenous people of Yoruba tribe. Seventeen different

Table 1: The list of arthropods used for therapeutic purposes among the indigenous people of Yoruba tribe

Arthropoda (Class; Order)	Species	English name	Local name	Parts used	Disease treated	Prescription
Insecta:						
Hymenoptera	<i>Camponotini brutus</i>	Giant ant	Jamjogu or Ikandu	Whole	Wound	Applied externally on the wound
Hymenoptera	<i>Formica</i> sp.	Ant	Talamo	Whole	*Wound *Thunder bolt and Impotence in male *Hepatitis B	Applied externally on the wound. Cooked with some plant parts and consumed. Burn to ashes with other material and make incision on man Major component of herbal medicine for Hepatitis B
Hymenoptera	<i>Belano gaster</i> sp.	Wasp	Agbon	Whole	Various sicknesses in children	Cooked with plant root and consumed
Hymenoptera	<i>Apis mellifera</i>	Honeybee	Oyin	Stings	Stiffness of joint, arthritis, Malaria	To sting along the backbone
				Bee larvae	Infertility, raise libido in men	Cooked together with plantain suckers and consumed.
				Whole	Snakebite, bedwetting, prevent mental illness	Burnt to ashes and rub on incisions.
				Honey	Antibiotics, to dress Wounds	Topical application
Diptera	<i>Musca domestica</i>	Housefly	Esinsin	Whole	Eye defeat, fever in infant, regain weight lost Prevent infection, maggot to heal wound And to cure baldness.	Grounded up into a paste and used to cure Baldness (because flies have hairy legs
Isoptera	<i>Macrotermes nigeriense</i>	Termite	Ikan	Whole	Safe delivery of baby	Make into soup and consumed by pregnant woman.

Table 1: Continued

Arthropoda (Class; Order)	Species	English name	Local name	Parts used	Disease treated	Prescription
Blattaria	<i>Periplanata americana</i>	Cockroach	Aayan	Whole	Bleeding, heal bone fracture and swelling, Wound, Anti dotes for ear defect, sickness in children. measles	Crushed and Applied externally
Orthoptera externally	<i>Zonocerus variegatus</i> and <i>Zebalius lineslatus</i>	Grasshopper	Tata.	Whole	Sickness in children and in wounds	Applied externally
Orthoptera	<i>Brachytrypes</i> . sp.	Cricket	Ire	Whole	Bleeding in pregnant woman, Development of infants, wounds	Roasted, powdered and cooked with other things and consumed. It can also be applied externally.
Odonata	<i>Aeshna</i> sp.	Dragonfly	Lamil ami	Whole	Yellow fever, swollen neck	Roasted and add to herbal tea and drink.
Lepidoptera	<i>Analeptes trifasciata</i>	Palm weevil larva (maggot)	Ogogo /Ipe	Whole	Wounds	Applied externally
Lepidoptera	<i>Bombyx mori</i>	Silkworm	-	Cocoon Larva and silk worm	Wound,throat inflammation, hemor rhoids,	Roasted and make into tea and drink used to treat
Coleoptera	<i>Scarba</i> sp.	Bettles	Yigbeyigbe	Whole	dianrhea Libido in men	Burnt to ashes, rub on Incisions
Hemiptera	<i>Cimex lectularis</i>	Stink bug	Idun	Whole	Jaundice	Grounded when dried then add to tea or alcohol
Phthiraptera	<i>Pediculus</i> sp.	Louse	Ina-ori	Whole	Clear urinary tract from obstruction.	Roasted, powdered and mixed with alcohol and drink.
Demaptera	<i>Chlisoches flavipennis</i>	Earwigs	---	Whole	Deafness	Grounded up into a paste and use to cure deafness.
Myriapoda						
Diplopoda	<i>Pachybolus</i> sp.	Millipede	Okun	Whole	Whitlow, fever, Convulsion in children.	Crushed and squished While alive and applied the fluid on the Body with Incantations.
Chilopoda	<i>Lithobius</i> sp.	Centipede	Okun pelebe	Whole	Break story kidney, leg problems	Burnt and rub on Incantations.
Crustacea						
Decapoda	<i>Clavidopsis dubia</i>	Cray fish	Ede	Whole	Asthma, Skin disease and blood diseases in human	Roasted with some plant materials and in lukewarm water and drink
Arachinda						
Scorpionae	<i>Buthus buthus</i> and <i>Pandiums imperator imperator</i>	Scorpion	Akeke	Whole	Skin diseases, haemorrhoids	Roasted, powdered and Mixed with cream and applied topically

Table 1: Continued

Arthropoda (Class; Order)	Species	English name	Local name	Parts used	Disease treated	Prescription
Mollusca Gastropoda	<i>Archanchantina maginata</i>	Snails	Igbin	Whole	Ulcer, hyper tension, Rheumatism, hemorrhoids and internal diseas. Barrennes	The shellis punctured and the snail fluidis Immediately Swallowed.
Bivalvia	<i>Pholas Teredos</i>	Sea shell	Ikarau	Whole	Purgative, treatment of women's diseases.	Burnt with some other things and grounded, make into soup and Bivalvia consumed

insect species, two species of Myriapoda, one species of Crustacea, one species of Arachnida and three species of Mollusca used in curing of ailments such as eye defects, various sickness in children, libido in men, arthritis, dizziness, thunderbolt, bedwetting, wounds, mental illness, child delivery, yellow fever, healing of bone fractures etc.

Table 2 shows the list of Arthropods used for Rituals Nine species of insects, two species of Arachnida, one species of Myriapoda and two species of Mollusca were used for rituals such as for defense, coronation, chieftaincy, wedding and naming ceremonies, good fortune. To fight against enemy and favour, forceful command and blessing and detection of thunderbolt. (Magun) and for finding husband and wife, appealing to god and witches, soothsaying (Afose), to invoke mental development on people and money rituals, appealing to witches for spiritual protection and prosperity, used to confer immunity on man against disease infection.

Few species of insects in particular has some taboo associated with the use in traditional medicine.

The Usage of Arthropods Products in Traditional Medicine

Human have extracted a wide variety of materials from arthropods e.g., silk extracted from silkworm moth (*Bombyx mori*).

Bee stings is used to treat arthritis, rheumatism, back pain, skin diseases and in this modern age as an alternative therapy to treat multiple sclerosis, because is known to increase blood flow.

There is discomfort associated with the administrative to bee stings which includes pain itching, swelling, inflammation and redness.

Honey and other honeybee products such as pollen, royal jelly, propolis, wax and comb are used for a variety of medicinal and nutritional and cosmetics purposes.

Honey

Honey is used in curing of the following diseases.

Arthritis

Honey mixed with lukewarm water and small teaspoon of Cinnamon powder (kanafuru) rub on the affected area of the body, recedes the pain within a minute or two.

Hair Loss

Those suffering from hair loss-baldness, Mix paste of hot olive oil, with one teaspoon of honey and rub before bath for about 15 min.

Bladder Infections

Drinking of a tablespoon of honey mixed with cinnamon powder (kanafuru) will destroy the germs of the bladder.

Table 2: List of Arthropods used for Rituals

Arthropoda (Class; Order)	Species	Usage
Insecta		
Hymenoptera	<i>Apis mellifera</i> and <i>Belanogaster</i> sp.	To fight, against enemy, for defense, coronation, chieftaincy, wedding and naming ceremonies, good fortune and favour, forceful command of blessing and detection of thunderbolt (Magun).
Hymenoptera	<i>Camponotini brutus</i>	Rituals, against enemies, prosperity, good fortune and for finding husband and wife.
Hymenoptera	<i>Formica</i> sp.	Protection
Coleoptera	<i>Analeptes trifasciata</i>	Coronation of chieftaincy title
Isoptera	<i>Macrotermes nigriense</i>	Protection and promotion (in jobs, trade), appealing to gods and Witches, soothsaying (Afose).
Orthoptera	<i>Brachytrypes</i> sp.	To invoke mental development on people, coronation and: money rituals, appealing to witches and good fortune.
Orthoptera	<i>Zebalius lineslatus</i> and <i>Zonocerus variegatus</i>	Protection.
Diptera	<i>Misca domestica</i>	For spiritual protection and prosperity, used To confer immunity on man against disease infection.
Diptera	<i>Crypthothelia rougeoti</i>	For rituals against 'enemies, defense and good fortune against any evil.
Odonata	<i>Aeshma</i> sp.	For human poison and human strength, to appease top gods, making sacrifice for money
Arachnida		
Araneae	<i>Lycosa</i> sp.	Prosperity and good fortune, protection and lack of prosperity, rapid development in infants, favour and magic
Scorpinae	<i>Buthus buthus</i> , and <i>Pandius imperator imperator</i>	For separating of couples, poisons, protection, invoke madness or mental disorder in human and sexual satisfaction.
Myriapoda		
Diplopoda	<i>Pachybolus</i> sp.	Pregnancy and money rituals, business success (Awure), protection both life and properties.
Mollusca		
Gastropoda	<i>Archanchatina marginata</i>	For casting spells, appeasing to white gods (Obantala), making love portion, care during pregnancy (pre and post natal care)
Periwinkle	<i>Potadoma togoensis</i>	Appeasing traditional gods for quick pregnancy.

Toothache

Honey is applied into the area of pain about 3 times in a day.

Cold and Chronic Cough

Those suffering from common or severe cold in warm water and cinnamon powder (kanafuru) from the plant and Honey, should take one tablespoon for 3 days.

Infertility

If impotent men regularly take two teaspoon of honey before sleeping, that problem will be solved.

Upset Stomach

Honey taken with cinnamon powder (kanafuru) cures stomach and stomach ulcers from the roots.

Immune System

Daily use of honey and cinnamon powder (kanafuru) or garlic strengthen the immune system and protect the body from bacteria and viral attack.

Longevity

Herbal Tea with honey when taken regularly arrest the ravages of old age.

Indigestion

Honey taken before food relieves acidity and digests the heaviest of meals.

Skin Infections

Eczema, (ringworm and all types of skin infections are cured by applying honey and cinnamon powder in equal parts on the affected paths.

Weight Loss

Honey and cinnamon powder boiled in a cup of water if taken daily, ½ h before breakfast on an empty stomach and at night before sleeping, reduces the weight of even the most obese person.

Fatigue

The sugar content of honey is very helpful and makes the person alert and flexible and also increases the vitality of the body.

Bad Breath

The morning gargle with one teaspoon of honey and cinnamon powder mixed in hot water keeps the breath fresh throughout the day.

Digestive System

Honey is said to improve food assimilation and to cure/treat Chronic and infective intestinal problems such as constipation, duodenal ulcer and liver disturbances.

Skin and Wound Healing

Honey is used in treatment of all forms of skin diseases, for smoothening of the burnt and to heal wounds. Honey is used to cure eye defect, haemorrhoid (pile).

Beewax

The wax is used to heal burns, wounds and haemorrhoid.

Propolis

This is used in alcohol tonic to reinvigorate the heart for good pumping actions.

Products of Arthropods Used for Rituals

The shells of snails and cowries are been used to make charms for the protection of properties and treasures from being stolen (Aale).

Shells and cowries are used by the market women to promote customers favour for sale of goods, either by direct inclusion of cowries with money or tying it to their cloth ends.

Taboo Associated with Some Arthropods Used in Traditional Medicine

The people of southwestern Nigeria confirmed the existence of taboo in traditional usage of some arthropods.

Brachytrypes sp. (cricket) is forbidden for blacksmith or people from the blacksmith lineage. The grievous consequences of this according to the people interviewed claimed to cause a professional failure from sudden breakage metals and irons used in the blacksmith work. The nocturnal crickets are prohibited from eating by the male children in Ogun waterside simply because it causes impotence in adult male.

The enormous distended termite (*Macrotermes nigeriense*) can be swallowed raw with special care to avoid it touching the human teeth. The negligence of this is likely to pose serious danger to the health of erring person.

A particular town (Irewon) in Ijebu North East local Govt. claimed that their ancestor had a covenant that (*Analeptes trifaciata*) Ipe is a forbidden food for them till date.

DISCUSSION

A wealth of knowledge and information has been gathered on the properties and the use of arthropods and their products among the indigenous people of Yoruba tribe in southwestern Nigeria. This knowledge, which is unique and interesting, is the key to the indigenous arthropods use. Traditional folk knowledge of Arthropods is the sum of attitudes, opinions, belief and custom handed down from generation to generation on arthropods usage in a given society. In most cases other ingredients used to prepare the medicine are not revealed to others since it is considered as the trade secret of the herbalists, traditionalist and traders etc. Banjo *et al.* (2003) reported the traditional utilization of termites among Ijebus includes protection, business success, job success, money success and destiny fulfillment for secret keeping, also to enhance the development of pregnancy. The medicinal interaction between humans and animals has been shown both in indigenous and western societies through out the world as stated by Gudger (1925), Silow (1983), Begosis and Braga (1992), Antonio (1994), Marque (1995) and Costa-Neto (1996). The value of indigenous use and knowledge derived from animals in general can not be questioned in any society, especially in the areas of medicinal purposes simply because majority of the indigenous people has limited access to official medicines. We now suggest that more work should be done in this area of indigenous use of biological materials, to bring break the ethnozoological knowledge of varnishing culture. This will create a way to having a reliable source of medicine, food, income and other benefits.

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