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Ethnozoological Considerations on the Consumption of Giant African Snails (*Achatina* spp. and *Archachatina* spp.) in the Former Provinces of Bandundu and Bas-Congo (DRC)

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ABSTRACT

A survey on the consumption and eco ethology of giant African snails was conducted between December 2002 and May 2003 among 606 individuals from 13 tribes in the provinces of Bandundu and Bas-Congo in the Democratic Republic of Congo. According to the results of this survey, the consumption of giant snails in these two provinces is very limited (12%) due to taboos and ancestral beliefs. Nearly half (48%) of consumers are from other provinces, such as Orientale Province. The impact of socio-cultural influences on the dietary habits of these populations regarding giant snails is not significant. However, these animals constitute an excellent source of high-quality protein. Furthermore, they are used as bio indicators of edible mushrooms.

Keywords: Consumption; Eco ethology; Giant African snails

INTRODUCTION

The giant African snail or *Achatina* (*Achatina* spp. and *Archachatina* spp.) is a food of high nutritional value with flesh made up of proteins, approximately 60% dry matter according to Creswell and Kompiang [1], 54 to 59% according to Heymans and Evrard [2] and 37 to 51% as indicated by Stiévenart and Hardouin [3].

The flesh of giant African snails is highly valued by many African populations [4]. It is the most popular and most consumed bushmeat in Côte d'Ivoire, after grasscutter, with consumption of nearly 17,000 tonnes per year. In Benin, consumption was estimated at 300 tonnes per year in 1989 [5].

According to Imevbore [6], mollusk meat is generally rich in amino acids such as lysine, leucine, isoleucine, and phenylalanine. Furthermore, it contains a high iron content (45-50 mg/kg), which explains its use in traditional medicine to treat anemia [3].

Several species of snails are consumed in the DRC by a number of tribes, including the Ngbandi, Ngbaka, and Ngombe (Equateur Province), the Balubakat (Katanga Province), and the Lokele and Topoke (Orientale Province) [7].

In this study, we want to assess the level of consumption of giant snails (*Achatina* spp. and *Archachatina* spp.) by different tribes in the Provinces of Bandundu and Bas-Congo and, through them, acquire information relating to some ecoethological aspects of these animals, based on

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observations and knowledge collected from these populations.

MATERIALS AND METHODS

Investigation Environments

The survey on the consumption and ecoethology of giant African snails was carried out in the Province of Bandundu (in the Southwest of the DRC), more precisely in Kenge and Bukanga-Lonzo, as well as in the Province of Bas-Congo (in the far west of the DRC), particularly in Kisantu, Mbanza-Ngungu, Lukula and Luozi. It was conducted between December 2002 and May 2003.

Survey Questionnaire

Following a preliminary survey conducted among 160 people in the Province of Bandundu, a survey form itself was developed. The related questions concerned the existence or absence of snail consumers in the region, the tribe, the age of consumers, the names of animals in different local languages, the way in which animals are consumed, the type of traps used for capture, taboos or prohibitions concerning these animals, other uses of snails apart from human consumption, ecoethological aspects, such as the animals' diet, their preferred habitat and their ability to distinguish poisonous mushrooms from edible mushrooms.

Sampling

The sample consisted of 606 interviewees, interviewed in the two provinces, and distributed among 13 different tribes: The Balonzo (80 subjects), The Bapelende (75 subjects), and The Bayaka (45 subjects) for the Province of Bandundu, and for the Province of Bas-Congo, The Bandibu (29 subjects), The Banianga (180 subjects), The Bantandu (70 subjects), The Bayombe (85 subjects), the Besi-Ngombe (2 subjects), and The Mbanza-Manteke (2 subjects); The Lokele (3 subjects) and The Topoke (30 subjects), originally from the Province Orientale; the Baluba, originally from the Province of Kasaï-Occidental (4 subjects); and The Bakusu, originally from the Province of Maniema (1 subject). The respondents were randomly selected, and the methodology used was based on the active participatory research method: Direct conversation and questioning according to the questionnaire plan, with note-taking by the interviewer. Language problems were resolved by a local facilitator [8].

RESULTS AND DISCUSSION

Existence of Snails in Different Environments

Our survey revealed that giant edible snails exist in all the environments of the people surveyed. All interviewees confirmed this. This survey revealed six vernacular names (Kodi in Kintandu, Kola in Swahili, Lileke in Kilokele, Mbembe in Lingala, Nkodia in Kikongo, and Nkol in Kimbala) for these animals in six local languages of the populations concerned.

Consumption of Snails

Consumption of these animals is still low, but consumers are found in all age groups. Among the subjects questioned, 12% attest to the existence of consumers in these environments, compared to 88% who are completely unaware of them. Of all the subjects questioned, a minority (12%) claim to have already eaten snails (**Table 1**). The low number of consumers is explained by the fact that in 88% of cases.

Snails are not part of the dietary habits of these populations. The Topoke (Orientale Province) and the Bandibu (Bas-Congo) were found to be the largest consumers of snails in the population studied. They represent 100% and 68.9% of consumers in the two tribes respectively, and 4.9% and 3.3% respectively in the entire sample considered (**Table 1**). Young people (4%) who consume them act under cultural in luence and especially following the lack of meat. The reluctance observed among non-consumers is due to cultural reasons. Indeed, since their ancestors did not consume them, they believe that these animals would be a source of disease. According to them, it is inconceivable that a normal person could consume snails. Those who consume them are considered "crazy", and the utensils used for this purpose are thrown away. Among consumers, almost half (48%) come from different provinces where these animals are part of their eating habits.

Table 1: Distribution of respondents and consumers by tribe and province of origin.

No.	Tribes	NPI	NC	% CT	% CE	Province of origin
1	Bakusu	1	100	1	0,1	Maniema
2	Balonzo	80	0	0	0	Bandundu
3	Baluba	4	0	0	0	Kasai-Occidental
4	Bandibu	29	68,9	20	3,3	Bas-Congo
5	Banianga	180	0	0	0	Bas-Congo
6	Bapende	75	6,6	5	0,8	Bandundu

7	Bantandu	70	4,2	3	0,4	Bas-Congo
8	They come	45	0	0	0	Bandundu
9	They argued	85	8,2	7	1,1	Bas-Congo
10	Besingombe	2	50	1	0,1	Bas-Congo
11	Lokele	3	100	3	0,4	Oriental Province
12	The City of Manteke	2	50	1	0,1	Bas-Congo
13	Topoke	30	100	30	4,9	Oriental Province
	Total	606	487,9	71	11,7	

Note: % CT: Percentage of Consumers in relation to the Tribe, % CE: Percentage of Consumers in relation to all respondents, NPI: Number of Respondents, NC: Number of Consumers.

Considering the proportion of consumers (12%) in our study, it appears to be far lower than that observed by Ekoué [8] in a study conducted in Togo. Almost all preparation methods were reported by consumers, including baking (15%), smoking (7%), grilling (3%), and sauce (10%).

Taboos or Prohibitions Related to Snails

The taboos or prohibitions encountered are mainly linked to certain popular beliefs and also to people's attachment to ancestral values in more than 80% of cases. Nearly 3% of those surveyed say they find snails dirty, and this would be the reason for the rejection of these animals by their ancestors. For 2% of those surveyed, as the snail is a slave to its shell, which it cannot get rid of, the use of its shell in the "mpungu" (a fetish commonly used by the Bantandu tribe of the Bas-Congo Province) would mean that the man on whom the bad luck is cast becomes a slave.

Capture Techniques

There are no special techniques for catching snails. Snails are only collected in the wild by detaching them from their support. However, in 20% of cases, respondents observed snails captured in rat traps, where cassava was used as bait. Others (10%) repeatedly found snails on cassava while it was drying, after retting.

Use of Snails in Traditional Pharmacopoeia

Regarding the other uses to which snails are put, the majority (90%) of respondents do not know of any other uses, apart from human consumption. However, 3% of respondents revealed that the shell is used as an amulet by witch doctors and sorcerers. This practice is well known among the Bantandu who use these shells as fetishes called "mpungu" to cast a bad spell on someone. Could this be linked to the meaning of the name of the snail, which is "nkodia" in the Kikongo language, meaning slave? According to the same people, smoked, dried, and crushed snails are incorporated into poultry feed, as are the powdered shells, as a supplementary source of calcium. This same powder is also said to be used in the treatment of tooth decay, and over time, causes the decayed tooth to fall out. For others (3%), the powder is also applied to burns to accelerate healing. Our observations on the use of snails in pharmacopoeia are very similar to those reported by Sodjinou [9] in a previous study carried out in Benin.

Some Aspects of the Eco-ethology of Snails

Among the subjects surveyed, 4% are completely unaware of what snails eat. A minority (1%) believe that aquatic species only consume mud, while the majority (95%) report that these animals feed on cassava, pericarp, palm nuts, ripe or rotting fruits (mangoes, avocados, safoux, etc.), the remains of certain insects (ants, termites, grasshoppers, bees, butterflies, etc.), the leaves of several forest plants and mushrooms. Regarding the latter type of food, 3% of respondent's state that snails are used as bio-indicators of edible mushrooms. In this context, nearly 1% of subject's state that these animals are able to instinctively distinguish poisonous mushrooms from edible mushrooms. On the other hand, the rest (2%) of people know nothing about this subject [10].

Furthermore, 5% of respondents stated that snails feast on palm wine. Indeed, they have repeatedly found them clinging to the necks of calabashes attached to palm trees during wine extraction.

Regarding locations where snails are frequently encountered, the majority (90%) of respondents reported that edible snails frequent shady areas, particularly under trees in forests. A minority (10%) stated that they have encountered them occasionally, on roads, rocks, near streams, palm trees, and around ponds.

CONCLUSION

According to the results of our survey, giant snails are consumed in the provinces of Bandundu and Bas-Congo, as well as in other provinces of the DRC, particularly in the provinces of Kasai-Occidental and Kasai-Oriental. The largest consumers are found among the Topoke and Bandibu tribes, respectively. Consumption of these animals is very limited due to taboos or prohibitions and the attachment of these populations to certain ancestral beliefs.

Among the consumers, subjects from other provinces, such as Orientale Province, represent a significant proportion.

Furthermore, the impact of sociocultural influences on the dietary habits of these populations regarding giant snails is not significant. Yet, these animals constitute an important source of good-quality animal protein, available locally and accessible to all social classes. Furthermore, giant snails are also reportedly used as bioindicators of edible mushrooms.

REFERENCES

1. Creswell DC, Kompiang IP (1981) Studies on snail meal as a protein source for chickens: Chemical composition, metabolizable energy, and feeding value for broilers. Poult Sci. 60:1854–1860.
2. Heymans JC, Evrard A (1972) African Achatines (Gastropod Molluscs): A new, unsuspected source of animal protein. Bulletin CEPSE “Social and Economic Programs” (Lubumbashi). 95:169–175.
3. Stievenart C, Hardouin J (1990) Manual for the breeding of giant African snails in the tropics. Wageningen: CTA.
4. Zongo D (1995) Giant African snails. Lecture given at the Institute of Tropical Geography in Abidjan as part of the training module "Valorization of cooked products and self-centered development." ENSA-Côte-d’Ivoire.
5. Heymans JC, Codja JTC (1989) Elevage du gibier et la protection de l’environnement. Nature Fauna. 5(3):17–25.
6. Imevbore EA (1990) Carcass evaluation and nutritive value of some popular edible molluscs in Nigeria. Die Nahrung. 34(9):549–553.
7. Kebolo B, Punga K, Longo M, Paulus J (2000) Preliminary data on captive reproduction of Achatina bandeirana (Morelet, 1886) in Kinshasa. Ann Sci Fac. 1(2):35–38.
8. Ekoue S, Kuevi-Akue K (2002) Survey on the consumption, distribution, and breeding of giant snails in Togo. Tropicultura. 20(1):17–22.
9. Sodjinou E, Biaou G, Codja JC (2002) Characterization of the market for giant African snails (Achatines) in the Atlantique and Littoral departments of southern Benin. Tropicultura. 20(2):83–88.
10. Ajayi SS, Tewe OO, Moriarty C, Awesu MO (1978) Observations on the biology and nutritive value of the African giant snail *Archachatina marginata*. East Afr Wildl J. 16:85–95.