

BUSHMEN AND MAMMAL-FAUNA: A SURVEY OF THE MAMMALS TRADED IN BUSH-MEAT MARKETS OF LOCAL PEOPLE IN THE RAINFORESTS OF SOUTH-EASTERN NIGERIA

Francesco M. ANGELICI*, Luca LUISELLI**, Edoardo POLITANO***
and Godfrey C. AKANI#

Résumé

Les bushmen et la faune mammalienne : recension des mammifères vendus dans les marchés à gibier indigènes de la forêt tropicale humide du sud-est nigérien.

L'étude porte sur des taxons mammaliens qui figurent dans les marchés à gibier bushmen indigènes du sud-est nigérien. Au total, 37 espèces différentes ont été répertoriées. Les micromammifères des ordres des rongeurs et des insectivores en sont absents.

La majorité des mammifères vendus appartient aux carnivores et aux artiodactyles (dix espèces au total), ainsi qu'aux grands rongeurs (sept espèces). Dans cette dernière catégorie, la plupart des spécimens renvoie à *Cricetomys gambianus*, *Thryonomys swinderianus* et *Atherurus africanus*, qui représentent une importante source de protéines pour les populations locales. Les autres espèces fréquemment répertoriées sont *Manis tricuspis*, *Potamochoerus porcus*, *Tragelaphus scriptus* et *Cephalophus monticola*. En plus de leur utilisation alimentaire, les mammifères peuvent être impliqués dans des rites religieux animistes, dans des initiations sexuelles ou dans des pratiques médicinales. Certaines des espèces concernées, telles *Panthera pardus* et *Loxodonta africana*, sont particulièrement menacées. Les chauves-souris frugivores sont uniquement vendues dans des petits villages forestiers, pour l'alimentation. Des guenons (genre *Cercopithecus*) sont achetées pour des usages variés. L'une des espèces (*C. sclateri*) est endémique du Niger oriental, et devrait faire l'objet d'une politique de conservation.

Summary

The mammalian species found in bush-meat markets of local communities in south-eastern Nigeria are studied. In all, 37 different species were recorded. Small-sized mammals of the orders Rodentia and Insectivora were not traded.

Among the traded species, the majority were Carnivora and Artiodactyla (both with ten species), and Rodentia (seven species). With regard to this latter order it should be noted that the great majority of the traded specimens belonged to *Cricetomys gambianus*, *Thryonomys swinderianus* and *Atherurus africanus* which represent an important source of protein for local bush people. Frequently traded also were *Manis tricuspis*, *Potamochoerus porcus*, *Tragelaphus scriptus*, and *Cephalophus monticola*. Some of these mammals may serve the purposes of animistic ritual, sexual initiations, and medical practices, as well as for food. Some of the mammal species are important from the conservation point of view (e.g. *Panthera pardus*, *Loxodonta africana*). Fruit-bats were traded for food only in small villages surrounded by forests. Guenons (genus *Cercopithecus*) were traded for a variety of reasons. One species (*C. sclateri*) is endemic to the eastern Niger Delta, and deserves special conservation efforts.

Mots clés

Mammifères, Ethnologie, Marchés de gibier, Delta du Niger sud-oriental, Nigéria.

Key Words

Mammals, Ethnology, Bush-meat markets, South-eastern Niger Delta, Nigeria.

* Italian Foundation of Vertebrate Zoology (Zoology), via Cleonia 30, I-00152 Rome, Italy; and DEMETRA - Institute of Environmental Studies, via dei Cochi 48/B, I-00133 Rome, Italy.

** Italian Foundation of Vertebrate Zoology (Ecology), via Olona 7, I-00198 Rome, Italy; and DEMETRA - Institute of Environmental Studies, via dei Cochi 48/B, I-00133 Rome, Italy.

*** Aquater S.p.A., E.N.I. Group Environmental Department, via Miralbello 53, I-61047 S. Lorenzo in Campo (Pesaro), Italy.

Department of Biological Sciences, Rivers State University of Science and Technology, P.M.B. 5080, Port Harcourt, Rivers State, Nigeria.

(Soumis le 25 avril 1999, accepté le 27 juin 1999).

Introduction

In a previous paper we reported data on the interrelations existing between local rural communities and wild amphibians and reptiles in the rainforest regions of south-eastern Nigeria (Akani *et al.*, 1998a). Although these interrelations could be locally important, it is well-known that the rural communities of sub-Saharan Africa are usually much more closely linked to other types of wildlife, chiefly mammals (e.g. see Turnbull, 1961; Asibey, 1974; Ichikawa, 1983; Hart and Hart, 1986; Carpaneto and Germi, 1989). This general pattern has also been demonstrated to be present in Nigeria (e.g. see Ajayi, 1971; Martin, 1983; Ojonugwa, 1986; Happold, 1987), although the importance of the bush-meat is likely to be less now than in the past (Happold, 1987). This decreasing importance of bush-meat for the local tribes in Nigeria could be caused by the fact that numbers of people have moved from forested areas to urban environments during the last two decades, especially as a consequence of the oil industry expansion (de Montclos, 1994). This trend towards urbanization has been especially relevant in the south-eastern part of the country, which is where the Nigerian oil industry is concentrated (de Montclos, 1994), with dramatic consequences also for the conservation of natural areas and wildlife (Powell, 1997).

According to the Rural Economic Survey of Nigeria (years 1965-1966), nearly 19% of the food consumed by humans was from "wildlife", and most of this "wildlife" was of mammalian origin (Happold, 1987).

Although the general patterns of mammalian bush-meat consumption by humans in Nigeria are quite well understood (cf. Rosevear, 1969, 1974; Ajayi, 1971; Martin, 1983; Ojonugwa, 1986; Happold, 1987), very little is known on the species of mammals consumed by people inhabiting the south-eastern part of the country (from the Niger river to the border with Cameroon). This is a serious shortcoming to our knowledge as this region, being the part of Nigeria uniquely dominated by continuous rainforests and the one where the closest interrelation between man and wildlife is to be expected (e.g. see Ojonugwa, 1986).

In the present paper we report a detailed list of the mammalian species found in local bush-meat markets of southeastern Nigeria, focusing our attention on the reasons of trading of the various species and on the eventual conservation implications of this trade.

Study area and methods

All observations were collected during several expeditions to the Federal Republic of Nigeria conducted between September 1996 and March 1999, throughout the territories of Bayelsa State, Rivers State, Abia State, Imo State, Akwa-Ibom State, and Cross River State, in south-eastern Nigeria (fig. 1).

The whole study region is situated inside the major vegetation zone of the continuous rainforest (Singh *et al.*, 1995). Details of both climatic and environmental characteristics of the study region are presented in previous papers by the writers (e.g. see Akani *et al.*, 1998a,b, 1999) or their co-workers (Persichetti, in press). The area is strongly anthropized and highly developed, with hundreds of villages surrounding the major urban centres (Yenagoa, Port Harcourt, Aba, Owerri, Uyo, Eket, Calabar). In particular, this high anthropization has followed the development of the oil industry, which is the most important economic source for this territory (de Montclos, 1994).

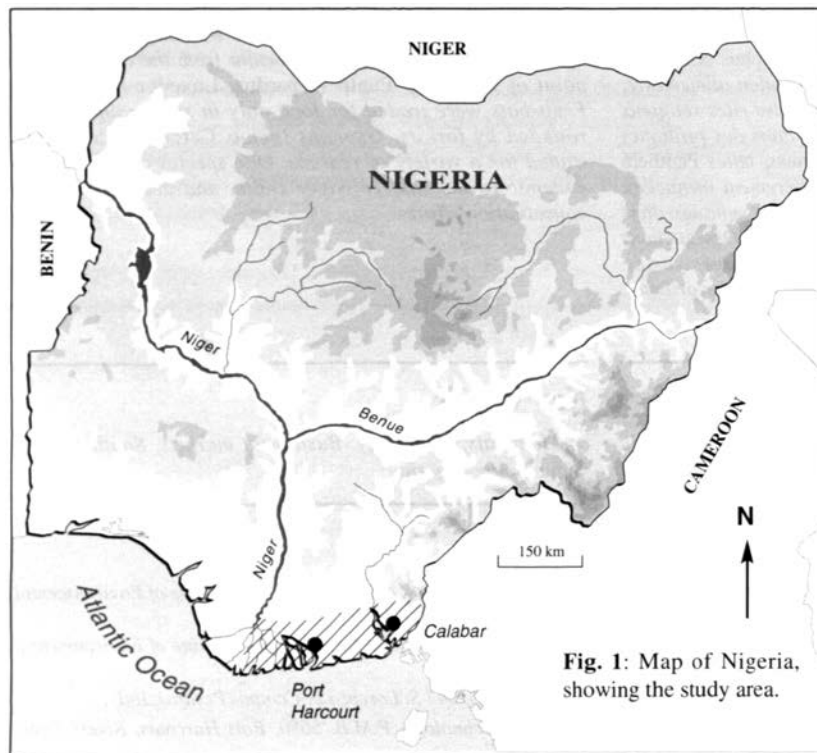


Fig. 1: Map of Nigeria, showing the study area.

Table 1: Reference numbers for the market localities where the mammal species were recorded.

Place-Name	State	Reference Number
Rumuehuo	Rivers	1
Odukiri	Rivers	2
Okrika	Rivers	3
Elem-Sangama	Bayelsa	4
Otari	Rivers	5
Kreigeni	Rivers	6
Bonny Island	Rivers	7
Peterside	Rivers	8
Port Harcourt	Rivers	9
Udegu (Ahoada)	Rivers	10
Rumuji	Rivers	11
Rumueme	Rivers	12
Sagbama	Bayelsa	13
Buguma	Rivers	14
Aba	Abia	15
Izumini River	Abia	16
Akwete	Abia	17
Opobo	Rivers	18
Ibeno	Akwa-Ibom	19
Eket	Akwa-Ibom	20
Ikot-Ekpene	Akwa-Ibom	21
Utuma	Cross River	22
Itu	Cross River	23
Eakang	Cross River	24
Oban	Cross River	25
Akampka	Cross River	26
Calabar	Cross River	27
Oguta	Imo	28
Lagwa	Imo	29
Akri	Imo	30
Imo river	Imo	31

The observations were carried out in several bush-meat markets of local tribes, which are found at the limits of major roads. These markets were visited as part of larger environmental projects to study the ecology and conservation biology of reptiles, amphibians, and mammals (Angelici *et al.*, 1998, 1999; Luiselli and Angelici, 1998; Luiselli and Akani, 1998; Luiselli *et al.*, 1998, 1999; Angelici and Luiselli, 1999).

The mammal remains were identified to the lowest taxon possible. In general, we followed identification criteria of Happold (1987) and Kingdon (1997). For the systematics of the various species we followed Wilson and Reeder (1993). When a mammal item was recorded, the owner was interviewed to discover the scope of trading (whether for food, as pets, for skin, or for Dgyou-Dgyou animism; cf. Akani *et al.*, 1998b). As in the case of a previous paper on

reptiles and amphibians (Akani *et al.*, 1998a), only specimens offered for sale are considered in this report. The various localities where the mammal specimens were collected are presented in Table 1.

The people

Some notes concerning the ethnic situation in south-eastern Nigeria have already been presented by us in a previous article (Akani *et al.*, 1998a), and here we give some additional comments.

The territory of south-eastern Nigeria is inhabited by a complex mosaic of ethnic groups, including the Igbos, Calabari, Ijaw, Akwa-Ibom, Ikwerres, Ogoni, Orobu, etc. The Igbos migrated into the southern territories from the provinces of Benin, Ogoja, Onitscha, Owerri, and Warri, by following the business development of these coastal regions. The Igbos are particularly involved in commercial activities, whereas the autochthonous populations (e.g. Ijaw) are more linked to traditional practices, including hunting and fishing (Cerulli, 1967). Inhabitants of major urban centres are mostly Christians, whereas Animism is still widespread in the smaller villages, especially among elderly and uneducated persons.

At the level of villages and small towns surrounded by forest patches, the rural people obtain their main source of protein from wildlife (Akani *et al.*, 1998a,b).

Results and discussion

The complete list of mammal specimens found in bush-meat markets during our surveys is presented in Table 2. The scope of trading is also presented.

In total, we recorded 37 different mammal species, whereas the total number of mammal species in the surveyed region exceed 100 (Angelici, 1997). Based on these figures, it should be noted that the range of species traded by local people is quite wide, especially when it is considered that the total number of mammals observed in the region (cf. Angelici, 1997) is inclusive also of small-sized species of the orders Rodentia and Insectivora which are not eaten by humans.

Among all these traded species, the majority were Carnivora (figs. 2 and 3) and Artiodactyla (both with ten species, see fig. 4), and Rodentia (seven species). With regard to this latter order it should be noted that the great majority of the traded specimens belonged to *Cricetomys gambianus*, *Thryonomys swinderianus* (fig. 5), and *Atherurus africanus* which represent an important source of protein for local bush people (Ojonugwa, 1986). Other important protein sources were *Manis* sp. (order Pholidota, fig. 6), *Potamochoerus porcus*, *Tragelaphus scriptus*, and

Table 2: List of mammals observed in bush-meat markets within southeastern Nigeria. The locality of observation and the scope of trading is also presented. * = only small parts of the body examined, and thus the numbers of traded specimens was not identifiable. Many = more than 20.

SPECIES	N° SPECIMENS	LOCALITY (see tab. 1)	SCOPE OF TRADING
Chiroptera			
<i>Epomophorus gambianus</i>	8	5,7,8	food / dgyou-dgyou animism
<i>Epomops franqueti</i>	5	8,14	food / dgyou-dgyou animism
<i>Megaloglossus woermanni</i>	many	7,8	food
Primates			
<i>Galagoides demidoff</i>	1	5	dgyou-dgyou animism
<i>Cercopithecus mona</i>	many	4,5,8,9,11,13,16	food / pet / dgyou-dgyou animism
<i>Cercopithecus sclateri</i>	6	13,15,16	food / pet
<i>Cercopithecus nictitans</i>	1	3	food / pet
Pholidota			
<i>Manis tricuspis</i> / <i>Manis tetradactyla</i>	many	4,6,8,9,13,17,18,23	food / sexual rituals / native medicine
Rodentia			
<i>Funisciurus leucogenis</i>	14	5,8,20,21	food / pet
<i>Heliosciurus rufobrachium</i>	7	5,22,25,29	pet
<i>Protoxerus stangeri</i>	4	3,5,20	food
<i>Xerus erythropus</i>	6	4,9,14,16	food
<i>Atherurus africanus</i>	many	4,5,8,9,10,11,13,16	food / dgyou-dgyou animism
<i>Cricetomys gambianus</i>	many	1,2,3,4,5,8,9,10,11,13,15,21	food
<i>Thryonomys swinderianus</i>	many	1,3,4,5,8,9,10,11,13,15,21,30,31	food
Carnivora			
<i>Panthera pardus</i>	*	15 ?	skin / dgyou-dgyou animism
<i>Aonyx capensis</i>	1	5,23	food
<i>Civettictis civetta</i>	19	1,4,6,7,10, 11,17,20,26,30	food / skin
<i>Genetta maculata</i>	15	2,4,5,6,7,11,17,27,29	food / skin / pet
<i>Genetta cristata</i>	1	23	food / skin
<i>Herpestes ichneumon</i>	16	3,6,8,10,18,24,26,29	food
<i>Herpestes naso</i>	1	19	food
<i>Galerella sanguinea</i>	2	12,21	food
<i>Atilax paludinosus</i>	21	2,3,8,10,11,19,24,27,30	food
<i>Crossarchus obscurus</i>	2	15,26	food
Proboscidea			
<i>Loxodonta africana</i>	*	26,27 ?	native medicine
Artiodactyla			
<i>Potamochoerus porcus</i>	many	1,3,4,5,8,9,10,11,13,15,21,30,31	food / dgyou-dgyou animism
<i>Hyemoschus aquaticus</i>	2	4,11	food / dgyou-dgyou animism
<i>Tragelaphus scriptus</i>	many	1,2,3,4,5,8,9,11,13,15,19,21, 31	food / horn / skin / pet
<i>Tragelaphus speki</i>	4	5,8,9,10	food / horn / skin
<i>Cephalophus monticola</i>	many	1,2,3,4,5,8,9,10,11,13,15,21,30	food / skin / pet
<i>Cephalophus rufilatus</i>	8	5,8,9,10,11	food / skin
<i>Cephalophus sylvicultor</i>	3	5,6,14	food / skin / dgyou-dgyou animism
<i>Cephalophus dorsalis</i>	5	4,5,10,13	food / skin
<i>Cephalophus ogilbyi</i>	3	2,14	food / skin
<i>Neotragus batesi</i>	7	6,16,25,29	food / skin / pet



Fig. 2: Carnivores are often traded by bush people in the Niger Delta: In this case, the viverrid *Civettictis civetta*.



Fig. 3: Another commonly traded carnivore species: the herpestid *Herpestes ichneumon*.

Cephalophus monticola (order Artiodactyla, see fig. 5) which are extremely common in bush-meat markets and also are frequently traded by itinerant sellers.

It is interesting to note that both the dried tail of *Manis tricuspis* and/or *Manis tetradactyla* and the claws of *Panthera pardus* are occasionally used for the sexual initiation of young unmarried women in a few bush-hamlets (personal interviews with local people). In these cases, the women's secondary sexual organs are often permanently injured by marks and scratches, with definitive scars on gluteus and breasts.

Mammals may serve also in animistic ritual and in traditional medicine practices (cf. table 2), although they seem to serve these purposes less frequently than reptiles (cobras, monitor lizards, tortoises, and crocodiles; cf. Akani *et al.*, 1998a). In this case, only selected parts of the animal are used.



Fig. 4: A traded skin of *Tragelaphus scriptus*.



Fig. 5: Specimens of *Thryonomys swinderianus* (left) and *Cephalophus monticola* (right) traded in a local bush-meat market.

Some of the mammal species found by us in the Nigerian bush-meat markets are of course important from the conservation point of view. The same is true also for the traded herpetofauna (Akani *et al.*, 1998a). Among the most endangered taxa, we can cite the leopard *Panthera pardus* (cf. Angelici *et al.*, 1998) and the African elephant *Loxodonta africana* (Angelici, 1997). Concerning leopards, we found only a stuffed skin, and, belonging to the same specimen (according to the opinion of the seller), a dried paw with claws and some teeth which were used for dgyou-dgyou or for selling to tourists. Concerning the elephants, we found some hairs and some parts of dried skin. For both these latter species, it is very difficult to determine the true place of origin, which thus is omitted

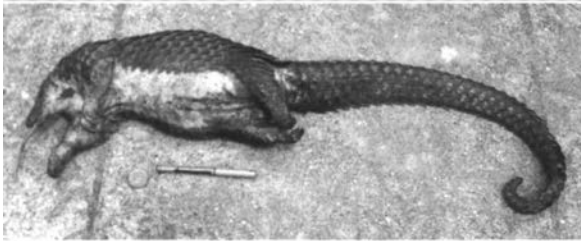


Fig. 6: A traded specimen of *Manis tricuspis*.

from the table 2. We suspect that these remains could arrive in south-eastern Nigeria from some foreign countries (e.g. Cameroon), where both these large mammal species are more common than in Nigeria. The fruit-bats (order Chiroptera) were traded for food only in small villages surrounded by forests. In these places they were considered a delicacy, whereas they are normally avoided by human communities inhabiting towns and major villages. These bats are also frequently utilized in animistic practices.

A special concern should be expressed for the guenons (genus *Cercopithecus*), which are traded for a variety of reasons (food, pet, dgyou-dgyou animism). One guenon species (*C. sclateri*, see fig. 7) is endemic to the eastern Niger Delta, and deserves special conservation efforts (Oates *et al.*, 1994) and it is highly desirable that the competent authorities should monitor the intensity of trading in this species (Tooze, 1995).

The hunters used several methods to capture mammals, nearly all of them involving the killing of the target animal. A common trapping method involved the use of fences (built with pieces of wood, canes, laminates, etc) to force the animals to pass through a narrow opening in which a wire snare is set. When the animal passes

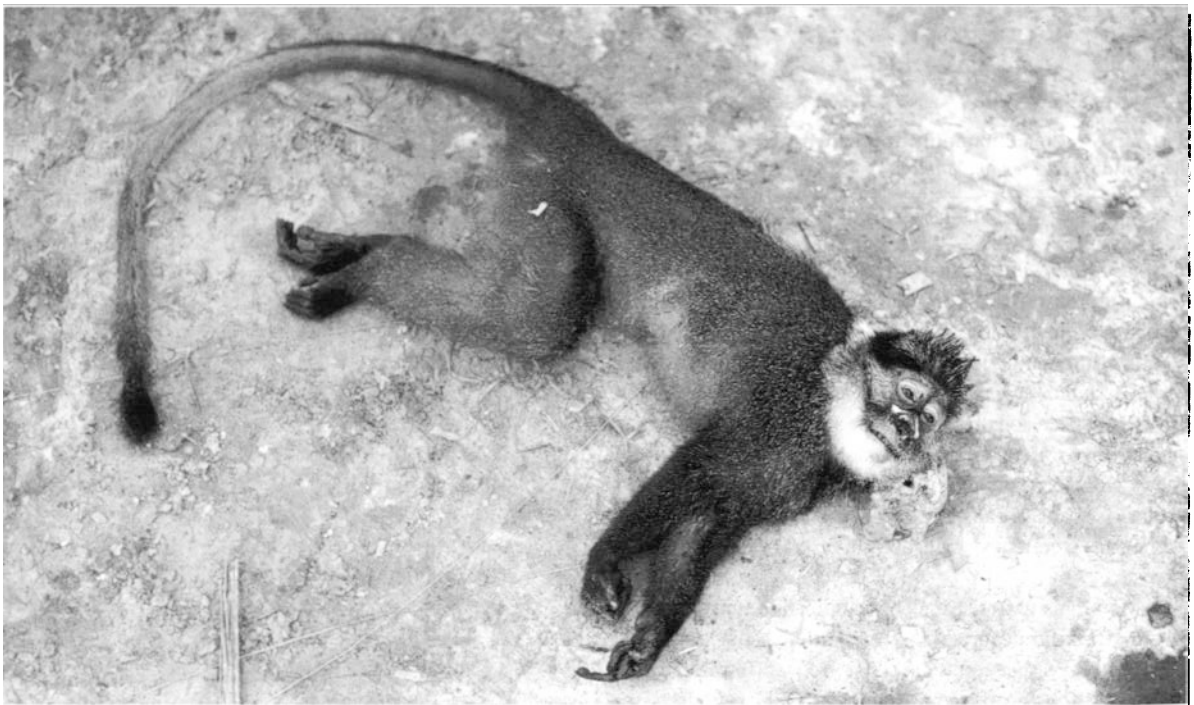


Fig. 7: A traded specimen of *Cercopithecus sclateri*, an endemic monkey species of the Niger Delta which deserves special conservation priorities.

through this gap, it is strangled. Traps to capture living animals as pets were also used. Squirrels, small monkeys (genus *Cercopithecus*), small carnivores and antelopes (*Cephalophus monticola* and *Neotragus batesi*) were the main targets of this latter trade. These animals are generally kept as pets while they are young, but are often eaten when fully grown.

Acknowledgements

We would like to thank the companies T.S.K.J. Nigeria Ltd., Ecosystem s.r.l., Aquater S.p.A., Demetra s.r.l., Amertex Oil and Gas Ltd. for logistic support and finan-

cial funding during our long-term research in Nigeria. The Italian Foundation of Vertebrate Zoology (F.I.Z.V.) granted parts of this research (project no. 49-46c, "Esplorazioni eco-faunistiche ed etnozoologiche dell'Africa sub-Sahariana"). We are indebted with Dr B. Cescon, Dr L. Raggi, Dr I. Grimod, Mr A. Sigismondi, Dr B. Ekeke, Dr O.L. Davies, S. Kalio, Dr Z. Tooze, L. Bikikoro, L. Ude, J. Ekanem, B. Egbide, Ete-Obong Agbara, Agbo Ekong Asi, A. Pazienti, Chief Godwin Itokem for much helpful assistance in the field. This paper is dedicated to the memory of the late Dr C.B. Powell (1943-1998), who pioneered faunal and ecological research in the Niger Delta.

Bibliography

- AJAYI S. S., 1971.— Wildlife as a source of protein in Nigeria: Some priorities for development. *Nigerian Field*, 36: 115-127.
- AKANI G. C., LUISELLI L., ANGELICI F. M. and POLITANO E., 1998a.— Bushmen and herpetofauna: Notes on Amphibians and Reptiles traded in bush-meat markets of local people in the Niger Delta (Port Harcourt, Rivers State, Nigeria). *Anthropozoologica*, 27: 21-26.
- AKANI G. C., LUISELLI L., ANGELICI F. M. and POLITANO E., 1998b.— Preliminary data on distribution, habitat, and status of crocodiles (*Crocodylus niloticus*, *Crocodylus cataphractus*, and *Osteolaemus tetraspis*) in the eastern Niger Delta (Nigeria). *Bull. Soc. Herp. Fr.*, 87/88: 35-43.
- AKANI G. C., LUISELLI L. and POLITANO E., 1999.— Ecological and conservation considerations on the reptile fauna of the eastern Niger Delta (Nigeria). *Herpetozoa*, 11: 141-153.
- ANGELICI F. M., 1997.— Mammals. In: E. Politano ed., *A study of the fauna (Amphibia, Reptilia, Aves, Mammalia) of the Niger Delta region of Nigeria and evaluation of the impacts caused by the working of two natural gas tracing pipe-lines*. Port Harcourt: T.S.K.J.-Aquater Press, 174 pp.
- ANGELICI F. M., AKANI G. C. and LUISELLI L., 1998.— The leopard (*Panthera pardus*) in southeastern Nigeria: status, ecological correlates of occurrence, and conservation implications. *Ital. J. Zool.*, 65: 307-310.
- ANGELICI F. M. and LUISELLI L., 1999.— Aspects of the ecology of *Varanus niloticus* (Reptilia, Varanidae) in southeastern Nigeria, and their contribution to the knowledge of the evolutionary history of *V. niloticus* species complex. *Rev. Ecol. (Terre et Vie)*, 54: 29-42.
- ANGELICI F. M., LUISELLI L. and POLITANO E., 1999.— Distribution and habitat of selected carnivores (Herpestidae, Mustelidae, Viverridae) in the rainforests of southeastern Nigeria. *Z. Sauget.* 64: 116-120.
- ASIBEY E. O. A., 1974.— Reproduction in the grasscutter (*Thryonomys swinderianus* Temminck) in Ghana. *Symp. Zool. Soc. Lond.*, 34: 251-263.
- CARPANETO G. M. and GERMI F. P., 1989.— The mammals in the zoological culture of the Mbuti Pygmies in north-eastern Zaire. *Hystrix*, 1 (n.s.): 1-83.
- CERULLI E., 1967.— I popoli del Golfo di Guinea. In: E. Biasutti ed., *Le razze e i popoli della terra. Volume III - Africa*. Torino: U.T.E.T., pp. 314-340.
- DE MONTCLOS M.-A. P., 1994.— *Le Nigéria*. Paris: Kurtala, 155 pp.
- HAPPOLD D. C. D., 1987.— *The Mammals of Nigeria*. Oxford Science Publications, Oxford, 402 pp.
- HART T. B. and HART J. A., 1986.— The ecological basis of hunter-gatherers subsistence in African rain forests: The Mbuti of eastern Zaire. *Hum. Ecol.*, 14: 29-55.

- ICHIKAWA M., 1983.— An examination of the hunting-dependent life of the Mbuti Pygmies, eastern Zaire. *African Study Monographies*, 4: 55-76.
- KINGDON J., 1997.— *The Kingdon Field Guide to African Mammals*. London: Academic Press, 465 pp.
- LUISELLI L. and AKANI G. C., 1998.— Observations on the ecology of *Bitis gabonica gabonica* and *Bitis nasicornis* (Viperidae) in the rainforests of south-eastern Nigeria. *Bull. Soc. Herp. Fr.*, 87/88: 25-34.
- LUISELLI L., AKANI G. C. and CAPIZZI D., 1998.— Food resource partitioning of a community of snakes in a swamp rainforest of south-eastern Nigeria. *J. Zool., London*, 246: 125-133.
- LUISELLI L., AKANI G. C. and CAPIZZI D., 1999.— Is there any interspecific competition between dwarf crocodiles (*Osteolaemus tetraspis*) et Nile monitors (*Varanus niloticus ornatus*) in the swamps of central Africa? A study from south-eastern Nigeria. *J. Zool., London*, 247: 127-131.
- LUISELLI L. and ANGELICI F. M., 1998.— Sexual size dimorphism and natural history traits are correlated with intersexual dietary divergence in royal pythons (*Python regius*) from the rainforests of southeastern Nigeria. *Ital. J. Zool.*, 65: 183-185.
- MARTIN G. H. G., 1983.— Bushmeat in Nigeria as a natural resource with environmental implications. *Environmental Conservation*, 10: 125-132.
- OATES J. F., POWELL C. B. and GONDER M. K., 1994.— A new form of Red Colobus Monkey from Nigeria. In: *XVth Congress of the International Primatological Society (August 3-8, 1994, Bali, Indonesia)*. Bali, Handbook and Abstracts, pp. 121.
- OJONUGWA O. S., 1986.— *A survey of wildlife in bushmeat markets in Rivers and Imo State, Nigeria*. B. Sc. Degree in Applied Biology (Zoology option). Port Harcourt: Rivers State University of Science and Technology, 60 pp.
- PERSICHETTI D., in press.— I Mammiferi e i Rettili del Delta del Niger (Nigeria) con le loro implicazioni nei rapporti uomo-animale. *Quaderni F.I.Z.V.*, 2: 1-33.
- POWELL C. B., 1997.— Discoveries and priorities for mammals in the freshwater forests of the Niger Delta. *Oryx*, 31: 83-85.
- ROSEVEAR D. R., 1969.— *The Rodents of West Africa*. London: British Museum (Natural History), VII + 604 pp.
- ROSEVEAR D. R., 1974.— *The carnivores of West Africa*. London: British Museum (Natural History), XII + 548 pp.
- SINGH J., MOFFAT D. and LINDEN O., 1995.— *Defining an environmental development strategy for the Niger Delta*. Lagos: Industry and Energy Operations Division West Central Africa Department, World Bank, 2 volumes.
- TOOZE Z., 1995.— Update on Sclater's Guenon *Cercopithecus sclateri* in southern Nigeria. *African Primates*, 1: 38-42.
- TURNBULL C., 1961.— *The forest people*. New York: Simon and Schuster, 322 pp.
- WILSON D. E. and REEDER D. A. M. eds., 1993.— *Mammal species of the World. A taxonomic and geographic reference (second edition)*. Washington and London: Smithsonian Institution Press, XVIII + 1206 pp.
-