

**ETHNOZOOLOGY OF THE *DIBOMINA*
(SERPENTES: COLUBRIDAE: *GRAYIA ORNATA*)
IN THE MASSIF DU CHAILLU, GABON**

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ABSTRACT.— Interviews with local people and direct observations in seven villages in the Massif du Chaillu, central-southern Gabon, revealed various uses of *Grayia ornata*, including: food consumption; medicinal use for delivery problems, preventive care for newborn babies, treatment of sprains and magic “vaccinations” to improve swimming or fishing abilities. The treatment of bites and various other beliefs, and observations by local people on the natural history of *G. ornata* were also recorded.

KEY WORDS.— Colubridae, *Grayia ornata*, Massif du Chaillu, Gabon, ethnozoology, traditional medicine.

INTRODUCTION

During the course of conservation-oriented herpetological surveys conducted jointly by the Direction de la Faune et de la Chasse (DFC, Libreville), the World Wildlife Fund - Central African Regional Program Office (WWF-CARPO, Libreville) and the Wildlife Conservation Society (WCS) in Gabon during May-November 2001 (see Bauer and Pauwels, 2002; Pauwels and Kamdem Toham, 2002; Pauwels et al., 2002a-c), an impressive amount of ethnoherpetological data were gathered. An assessment of traditional use and importance in local folklore of a target species' is critical for effective regional protection programmes. Here, we report on the relationships between several ethnic groups of the Massif du Chaillu in central-southern Gabon and the ornate water snake *Grayia ornata* (Barboza du Bocage, 1866), an aquatic colubrid snake which can be found in streams and rivers in forested areas of Cameroon, Central African Republic, Equatorial Guinea, Gabon, Democratic Republic of Congo, Republic of Congo and northern Angola (Chippaux, 1999; Pauwels, 1995).

MATERIALS AND METHODS

We interviewed local people about *Grayia ornata* in seven localities within the Massif du Chaillu. All information was recorded in the presence of voucher specimens to avoid misunderstandings by informants regarding the identity of *G. ornata*. Voucher specimens were deposited at the Institut Royal des Sciences naturelles de Belgique (IRSNB, Brussels) and the Musée Royal de l'Afrique Centrale (MRAC, Tervuren). In each locality, two groups of people were independently interviewed. Care was taken to ensure that no contact between the groups occurred between interview sessions and only consensual data are presented here. The list of localities is given hereafter, with the names of the main informants.

Localities visited- Boussimbi (11°49'16"E, 1°10'32"S; Offoué-Onoy Dpt, Ogooué-Lolo Province): Massango village; visited in September and November 2001; informant: Chief Jean-Claude Ndzohou;

- Diangui (11°49'23"E, 1°13'22"S; Offoué-Onoy Dpt, Ogooué-Lolo Province): village whose inhabitants are mainly Massango,

with some Nzebi and Pouvi; visited in September and November 2001; informants: Mrs Marianne Moussounda, Chief Maurice Bousseguie, Mr Marcel Loundou, Mr Benjamin Moukambi, Mr Théophile Yamouna;

- Dikinga (11°42'43"E, 1°32'45"S; Ogoulou Dpt, Ngounié Province): Babongo pygmy village near Diyanga; visited in July 2001; informant: Mr Patrice Mouélé;

- Diyanga (11°43'45"E, 1°30'56"S; Ogoulou Dpt, Ngounié Province): village whose half is occupied by Babongo pygmies and the other half by Massango; visited in July (7-14), September and November 2001; informants: Mr Antoine Dingoudi and Mr Syriaque Moulengui;

- Iboundji (11°49'24"E, 1°13'14"S; Offoué-Onoy Dpt, Ogooué-Lolo Province): a small town whose inhabitants are mainly Massango; visited in September and November 2001; informants: Mr Louis-Charles (Yala) Makaho-Ipoungat, Lieut. Major Mathurin Oyandji;

- Itsiba (11°58'41"E, 1°46'55"S; Boumi-Louétsi Dpt, Ngounié Province): village whose inhabitants are all Nzebi; visited in July (15-23), September and November 2001; informants: Mr Jean-Marie Ndongo, chief Ferdinand Pandja, and Mr Jean-Euloge Pandja;

- Moudouma (12°03'12"E, 1°44'06"S; Boumi-Louétsi Dpt, Ngounié Province): Nzebi village; visited in September 2001; informant: Chief Daniel Mouélé.

Voucher specimens

IRSNB 16242 (field nr P626): Itsiba, Matombo River, 9 Sept. 2001.

MRAC 2001-102-R-6 (field nr P562): Diyanga, 11 July 2001.

RESULTS

Vernacular names.- In Gabon, *Grayia ornata* has been given a single common name, *dibomina* (plural: *mabomina*), by the Loumbou, Massango, Pounou and Nzebi people, and is called *mouboyi* by the Pouvi, *otoubou* by the Obamba, and *moléngué* by the Babongo pygmies. The species is called *ghébomina* in Mitsogho at Mokabo (Douya-Onoy Dpt, Ngounié Province) (Yoga, pers. comm.).

Dibomina is also the name given to this species by the Pounou, Vili and Yombe in the Kouilou Region in the Republic of Congo. South of the southern end of the Massif du Chaillu in the Republic of Congo, *G. ornata* is called *munsioka* by the Badondo, and *bonongo* by the Kongo in the vicinity of Brazzaville (V.M., pers. obs.). Nutritional uses.- All interviewed villagers regarded *G. ornata* as an excellent food, especially during the dry season "when it is the fattest" (particularly around July). The smallest specimens are usually disregarded by the adults, but are always killed and eaten by the children. Specific hunting outings for this snake are never organised, but efforts are made to capture all specimens that are casually encountered. Most specimens are actually found trapped in fishing nets or hoop nets (*bidoubou* in Nzebi), to which these piscivorous snakes are attracted when they contain a number of entrapped fishes. Specimens are also encountered and killed by women when they explore holes in the river banks with their hands in search of silurids. This snake is thus also called *nioga baguetu* ('women's snake') by the Pounou in the Moabi area (Douigni Dpt, Nyanga Province) (Koumba, Makaya, pers. comm., June 2002).

The snakes are prepared as follows: after being killed with a stick or a machete, the snake is beheaded and its body placed on a fire in order to burn off its scales. The snake is then eviscerated, the digestive tract discarded, and the body cut into sections a few centimeters in length. These are placed in a bush leaf ("*feuille de brousse*", i.e., any large leaf found in the forest, often Marantaceae) with salt, chopped onions and chillis. The leaf is closed to form a bag ("*paquet*") which is then placed in a cooking-pot with a small amount of water, or placed directly on the embers. In the Congolese part of the Massif du Chaillu, as well as in the Brazzaville area, the meat of *G. ornata* is hung for a few days before being prepared in this way, in order to make it more tasty (V.M., pers. obs.).

Natural history.- All our informants refuted Chippaux's (1999: 83) report that *G. ornata* can hunt from branches overhanging streams, although these snakes were considered to be excellent climbers and liked to bask on branches

overhanging water, sometimes two to three meters high. When alerted, they fall into the water (as already reported by Perret and Mertens, 1957: 593) and quickly disappear into holes in the banks. They are said to be solitary and to hunt underwater at night, during which they actively explore every nook and crevice for prey items. It is believed in the Lunda area of north-eastern Angola that *G. ornata* live in pairs (Laurent, 1964: 102), but this is not held in our study area. The stomach contents are often revealed when the viscera are removed during preparation for food. The most common prey noted by informants were fish (especially silurids), but frogs, shrimps and small rodents were also sometimes encountered in the stomachs. At Boussimbi, Diangui and Iboundji we were told that fish are strongly attracted by the smell of *dibomina*, and so the fisherwomen search the places where this snake lives as they think there will be many fishes there. Perhaps in support of this belief, one of us (V.M.) observed during the day in October 1991 cyprinid fishes (genus *Barbus* Cuvier and Cloquet, 1816) rushing and feeding on excrement defecated by *G. ornata* in Loeme River, Kouilou Region, Republic of Congo. Itsiba inhabitants reported that the two species of otters they know (a large species called *loubangha* and a small one called *ngoundou*) often destroy hoop nets in order to eat the entrapped fish and *dibomina*. The same observation was reported in Moudouma, where these otters are called *nioundou* and *nyongo*. These observations probably involve the large Congo clawless otter (*Aonyx congica* Lönnberg, 1910) and the small Spotted-necked Otter (*Lutra maculicollis* Lichtenstein, 1835), to date the only two recorded otter species in Gabon (Kingdon, 1997). It was also reported that when the *dibomina* are already drowned in the nets, crabs sometimes eat them. Several fishermen of Diangui told us that they sometimes find *dibomina* in the stomachs of the *ngandou* (the Massango name for *Crocodylus cataphractus* Cuvier, 1824) and *moungoundou* (*Osteolaemus tetraspis* Cope, 1861) caught in the nearby Onoy River.

Medicinal uses.- In Itsiba and Moudouma, *G. ornata* comprises the basic component of a rem-

edy for delivery problems during childbirth. When a *dibomina* is killed and beheaded, the head is placed in the smokehouse (“*fumoir*”) where, once smoked, it is carefully kept in a bush leaf and usually hung by string from the roof in order to protect it from rats and ants. If, after a woman’s water has broken, she remains in labour for too long the medicine man (“*charlatan*”) employs the following procedure. (Although for instance in France or Belgium, the word *charlatan* is the equivalent of the English word quack (or bogus doctor), in Gabonese French this word is not pejorative and corresponds to the word *tradipraticien*). At Itsiba, the snake’s head is removed from the smokehouse and pierced with a metal needle. The impaled head is put in a bush leaf folded to form a funnel. Water poured through the funnel is drunk by the mother. At Moudouma, the dried head is simply put in a cup of water for about ten minutes, and then the water is drunk. The head is then returned to the smokehouse for storage and future use. The folk logic behind this remedy is that, as the *dibomina* is famous for letting itself fall into the water head first when disturbed, the head of the baby is supposed to hurry to get back to the water the mother lost. At Diangui, as well as in Boussimbi and Iboundji, the use of *G. ornata* for delivery problems is unknown. However, it is used in another medicinal application. As a preventive measure a few days after a baby is born, some people take the viscera of *dibomina* (first dried in the smokehouse) and use it as a bangle around the ankle of the baby. This bangle is believed to suck out sickness: “like the *dibomina* can go out of the water, the sicknesses can go out of the body”. We were also informed in Diangui that the fat of *dibomina* (as well as that of other snake species, mainly *Python sebae* Gmelin, 1788), collected in the course of cooking can be used to treat sprains by direct application on the skin. This latter use is also current by the Pounou at least in the area of Mouila (Bignoumba, pers. comm., Oct. 2001). In southern Republic of Congo, the fat of *G. ornata* is applied on the skin in order to facilitate the removing of a thorn or a splinter (V.M., pers. obs.). Magic uses.- At Boussimbi, Diangui and Iboundji, *dibomina* is used by fishermen for two

kinds of “vaccinations”, one securing excellence in swimming ability, the other securing high fishing success. The head of a *dibomina* is burnt and its ashes sprinkled on incisions made with a razor blade on the wrists for “fishing vaccination”, and on the wrists and the upper parts of the feet for “swimming vaccination”. Vaccinated people are believed to never drown and/or catch more fish than unvaccinated fishermen. In Diangui, some Massango use the *dibomina* as a totem. This totem is hereditary and is transmitted to a chosen member of the next generation through the father, the mother, the grandmother or the maternal uncle. The transmission is accompanied by the divulgence of a secret ritual to the designated heir. This consists in taking the head and heart of a *dibomina* killed the same day, mixing it raw with the fresh leaves of a small shrub called *ikalou* in Massango, and putting this mixture in a black loincloth. (The word *ikalou* also means acrobatics, due to the fact that this plant is also used in magic to reverse undesired situations). This small bag is deposited in the house beneath the place where the nets are stored and in contact with the nets. The smell produced by the rotting pieces of *dibomina* mixed with *ikalou* is supposed to be very attractive for the fish. Being impregnated with this smell the nets are believed to be more efficient. The fishermen also put this small black bag into their gamebag when they go to fish. If they use a net they rub the black bag against the net before putting it into the water; if they use a hook they simply keep the black bag in their hand. It is forbidden for a person whose totem is the *dibomina* to eat this snake species. Bite cases and treatment.- *Grayia ornata* is reputedly non-aggressive in all villages visited. It bites so rarely that in Diyanga a special meaning is even attributed to a bite case: the bitten person is accused of incest with a sibling of the opposite sex. In all local villages, although it is known that the bite is not life-threatening, all cases have to be treated and the same remedy is applied everywhere. It consists of taking a handful of rotten wood found in the river, chewing it and spitting it at the place on the body where one has been bitten. By the Nzebi of Itsiba, being bitten by the *dibomina* is not regarded as an unfortu-

nate event. On the contrary, it is believed that the bitten person will be protected for life against bites by other snakes, for *G. ornata* is regarded as the “grandfather of all the other snakes”. Indeed, “snakes feel that [if] a person has already been bitten by the *dibomina* – why should they bite somebody who has already been bitten by their grandfather?” and “if today all snake species are able to swim, it is thanks to their grandfather *dibomina* which was the first to do it.” A Massango proverb, current in the area of Iboundji, says “*Gnogh a se fou ghou mambe dibomina reghile*” (*gnogh* = snake; *a se* = not; *fou* = to die; *ghou* = in; *mambe* = water; *reghile* = to precede), and literally means “Snakes can not die in the water, since the *dibomina* preceded them there”. It refers to the fact that one must always take notice of the experience of the elders. An old man of Diangui explained to us that when snakes enter the water they have to consult the *dibomina* in order to know the life in the water and its dangers; “*de même tous les hommes qui vont en forêt devraient consulter les Pygmées Babongo qui étaient là les premiers; le dibomina est le pygmée de l’eau*” [“in the same way all men going in the forest should consult the pygmies who were there the first; the *dibomina* is the pygmy of the water”].

DISCUSSION

Grayia ornata shows two distinct colour patterns: the common crossbarred colour phase and the rare longitudinally striped phase, the latter phase having not been encountered in the course of our study. Among others, Spawls and Branch (1995: 56) have noted the extreme similarity between the crossbarred colour phase of *G. ornata* and the sympatric aquatic cobra *Boulengerina annulata* (Buchholz and Peters, 1876). Since we did not collect the latter species in the investigated localities, and were therefore unable to show vouchers to the locals, the possibility of confusion between the two species cannot be ruled out. It is also possible that the two species receive distinct names among the Babongo, Massango, and Nzebi ethnic groups. At Doumvou (Basse-Banio Dpt, Nyanga Province) the Loumbou villagers give *B. annulata* and *G.*

ornata distinct names (V.M., pers. obs., July 2001). Knoepffler (1966: 9) noted that both species were systematically confused by local people in Ogooué-Ivindo and Woleu Ntem. At Boussimbi, Diangui and Iboundji, the *dibomina* is distinguished from the *nguéné*, a species we unfortunately did not collect at those localities, but which seems likely to be *B. annulata*. In those places it is said that the *nguéné* (*nguénié* in Pouvi) is highly venomous, and a belief exists concerning bite cases: when one has been bitten, one should stay at the same place without moving as the snake will come and bite a second time; it is then still forbidden to move as the snake will come a third time and bite again, but this time in order to get its venom back since it should think that it has needlessly bitten a piece of deadwood. We were told the subtle differences between the *dibomina* and the *nguéné*. 1.) a head not distinct from the neck versus a diamond-shaped head, 2) black rings interrupted on the belly versus rings completely encircling the body, 3) black rings indistinct on the tail versus distinct tail rings, 4) numerous small squares on the head versus only five squares, and 5) remaining slim as adults versus growing thick-bodied. Syntopy of both species does not seem to occur very often. *B. annulata* seems to be found mainly in large and medium rivers (Trape and Roux-Estève, 1995: 43), although Knoepffler (1965: 244) recorded that the species is found in forest stream bank holes where the silurids, frogs and crabs stay. This latter place is also typical for *G. ornata*, according to the villagers and our own observations, although large rivers are also sometimes occupied by *G. ornata*. For instance we examined a large beheaded female which was sold at Kango (Komo Dpt, Estuaire Province) on 30 Oct. 2001; it had been caught by net in the Komo River and the fisherman said that it was very common in this large river.

Since all the *dibomina* brought by villagers to us were *G. ornata*, all the food, medicinal and magic uses cited above concern this species. Where *G. ornata* and *B. annulata* are confused in some of the visited localities, observations of locals on natural history could be based on both species. Pauwels et al. (2000) made a compila-

tion of the known prey of *G. ornata*, which appears to be strictly piscivorous. *B. annulata* is also known to feed only on fish (Chippaux, 1999: 204; Spawls and Branch, 1995: 56). Records of prey such as frogs, shrimps and small rodents have been documented for neither species. It would be very interesting to verify that one or both can indeed feed on such a wide variety of prey types. The closest species to *G. ornata*, *G. smithii*, is known to prey on frogs and fishes (Pauwels et al., 2000).

CONCLUSION

The present report highlights the significance of *Grayia ornata* in local food habits, traditional medicine and folklore of the Babongo, Massango, and Nzebi ethnic groups in the Massif du Chaillu. Interesting observations by locals on the natural history of the *dibomina* suggest a complex involvement of this snake in the trophic chain as predator and as prey, and should be confirmed by future field studies. The distribution of *G. ornata* is closely associated with that of the Central African rain forest. Protection of this rain forest will help not only to save this snake and many other species, but also to preserve those unique, most often neglected and unrecorded, ethnozoological links which are an integral part of the culture and traditions of the forest peoples.

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