DISCUSSION ON THE GENUS OXYRHOPUS (WAGLER, 1830) IN FRENCH-GUYANA

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■ INTRODUCTION

This extraordinarily complex genus is compound of sorts and has a great diversity of markings. Two species are reported in French-Guyana and a third kind will be described here. In the *Oxyrhopus petola* group, two populations are distinguished, and I will connect *Oxyrhopus melanogenys* with another. I will also give a new identification key.

■ PRESENTATION OF THE GENUS *OXYRHOPUS* WAGLER, 1830

The genus *Oxyrhopus* is related to the genera *Clelia* and *Pseudoboa*, which are also present in French Guyana. This genus includes six groups that total about twelve species (Peters en Orejas-Miranda, 1986), of which three appear in French-Guyana. They are classified as rear-fanged Colubridae, with a divided sperm groove (Chippaux, 1987).

Oxyrhopus is present in the most parts of the north of South-America. The head is oblong and separate from the neck; the eye is small with a round to slightly vertical pupil. The body is small. The head scales are of a classical type, with one loreal scale and two pairs of throat scales. The dorsal scales are smooth, with two apical pits and in 19 rows. The anal scale is undivided, but the sub-caudals are divided. The ventral scales are laterally keeled. These species have caused big taxonomic problems because they have been the subject of misleading classifications that have led to several mistaken identities.

Their preferred food includes, depending on the species, lizards, small mammals, snakes and perhaps frogs. These snakes live on the ground and are semi-burrowing and active during the night and at twilight.

■ PROBLEMS

At present, Chippaux (1987) mentions two kinds of Oxyrhopus in French-Guyana: *Oxyrhopus for-*

mosus (Wied, 1820) and *Oxyrhopus petola* (Linnaeus, 1758) for which he suggests the following key to identification.

Preocular touches the frontal scale
.....***Oxyrhopus petola***
Preocular divided from the frontal scale by the supraocolar
.....***Oxyrhopus formosus***

In contrast to *Oxyrhopus formosus* the identification of *Oxyrhopus petola* does cause some problems. Chippaux (1987) mentions in his work already the problem of the intricate variations in the chest marking of one single species or of a complex of sorts.
My research in the field enabled me to catch about thirty snakes of the genus *Oxyrhopus*, which all had smooth dorsal scales in 19 rows and two apical pits; the ventral scales were laterally keeled. The anal scale was undivided; the sub-caudals on the contrary were divided. Based on the present identification key (Chippaux, 1987, 102) these animals had to be identified as *Oxyrhopus petola*. Nevertheless, although the essence of the characteristics appears plausible, these snakes show great variations on their undersides regions. Some of the samples described as *Oxyrhopus petola* could very likely belong to a third species. Bailey (in Peters and Orejas-Miranda, 1986, 229) makes a re-division in the group *melanogenys* for species that have an arrangement of black and white bands corresponding to the order 'black-white-black-white-black', a mark that corresponds with those of my samples.
Based upon the definition suggested by Bailey, I assume that it concerns an *Oxyrhopus* that is closely related to *Oxyrhopus melanogenys* (Tschudi, 1845), a species not yet seen in French-Guyana. Because of this, I continued my research in this direction.

■ METHOD

Oxyrhopus melanogenys (Tschudi, 1845)
Sphenocephalus melanogenys (Tschudi, 1845, 163;)
Tachymenis bitorquata (Günther, 1872, 19;)
Oxyrhopus tergeminus (Jan, 1870: plche 1, fig. 3 and 4;)
Oxyrhopus melanogenys (Boulanger, 1896, 105; Pérez-Santos and Moreno, 1988, 261; Campbell and Lamar, 1989, 290, fig. 504. Pérez en Moreno, 1990, 270;)
Oxyrhopus aff. Melanogenys (Zaher and Caramaschi, 1992, 807.)

■ STUDIED MATERIAL

French-Guyana, Route Nationale 1, PK 254, PK 253, PK 235, PK 235,5, PK 233,4, PK 222, PK 220,7, PK 125; CD 9, PK 9, PK 15,5, PK 17, PK 20,3 the road from P. Isnard, PK 12 and PK 18, the road from Kaw, PK 42 and around Camp Patawa. I only mention the localities of the samples I examined for this purpose. Further the col-

lection Chippaux from OSTROM at Cayenne, specimen NR 64.

Proceeding from the belly region it is possible to divide the entire in two easy to distinguish groups, which causes a strong unity and stability that excludes simple variation in colour. Not the individual is the issue, but the populations who have pure characteristics to everyone. Based on the given "'belly criterion" the following classification is possible:

■ The first group, that includes five species, consist of animals from which the belly region is marked by an alternation of red and salmon-coloured bands on a black background; the belly region is equable mother-of-pearl-white, a permanent present and characteristic quality: in this case it concerns *Oxyrhopus petola* as described and shown in the iconoclasm (Chippaux, 1987, 102; Campbell and Lamar, 1989, fig. 506; Pérez-Santos and Moreno, 1990).

■ In the second group, consisting of the twenty-four collected snakes that I caught or were run over on the road, the belly region is complete different that of *Oxyrhopus petola* from the preceding group, but with a clear resemblance, which reminds of another species, even more of a simple variation of colour from *Oxyrhopus petola*. The belly, remarkable, shows a trio of black bands wherein find themselves very small white bands (one scale row before the white) that don't touch. More or less big, orange irregular bands (1 till 3 scale rows) that sometimes touch, especially on the last part of the body, order the three bands. The black bands are 5 or 6 times bigger than the white. The succession of the bands is in general as follows: orange-black-white-black-white-black-orange. The head is black with a half-moonlike, yellow mark, situated after the parietals, which extends into the neck. The eye is black up to dark-orange. The ventral side of the last part of the body is always marked by irregular white and orange rings or spots on a black background. The rest of the belly is white up to yellowish, thinly stippled with orange-like and black-grey dots. This particular detail goes in the direction of the remarks from Zahler en Caramaschi (1992, 807) concerning the description of the species. Therefor I stick to the suggested name *Oxyrhopus aff. Melanogenys*.

Comment

By a few specimens the orange bands, as sometimes the white, are more vague at the beginning of the body. They become only visible again at the end, sometimes in the form of simple dots. Other individuals are almost quite melanistic, but the yellow, half-moonlike spot is always there, as the mark on the belly. The population of *Oxyrhopus* unquestionable recalls the mark of *Micrurus hemprichii*. Lastly: because this criterion is seldom used, I have observed that these two populations do not have the same nourishment-spectrum. It seems interesting to say something more about that.

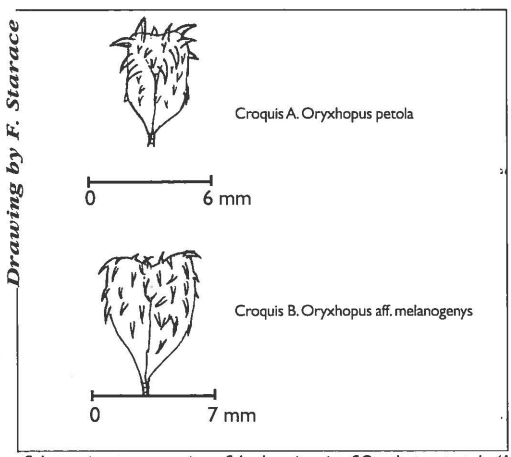
The individuals of the first group that are kept in captivity, take young mice without problems,

while the ones of the second group categorical refuse such prey. At there turn the snakes of the second group do take lizards. Among the captive specimen three have vomited their lizards, among which a *Cnemido-phorus lemniscatus* and a *Leposoma guianense*, a small digger-animal. After a few days I also have noticed in the droppings of the animals in captivity the presence of scales and not of hair; this nourish-characteristic justifies the isolation of the species *Oxyrhopus petola*. It is likely that this specie is ophiofage and that small snakes are part of the nourish-spectrum from this snake.

I have the in this manner constituted group gone in for a profound examination based on characteristic features. Some results of this inquiry are worth mentioning. The head scales don't make it possible to make a good distinction between the two sorts. Nevertheless, a few distinctions can be noticed, mainly in the region of the nasal scales, the temporal scales, the throat scales and counting lesser for the loreal scales.

By *Oxyrhopus petola* the nasal scales are divided in two parts of equal size; the temporal formula is 2+2 and the anterior throat scales are a little bigger than the posterior The loreal scale is rectangular and twice as long as high.

In *Oxyrhopus aff. melanogenys* the nasal scale is also divided, but the part that touches the loreal scale is clearly smaller than the part that touches the rostral scale; the temporal formula is always 2+3 and the throat scales are strikingly equal of size. The shape of the loreal scale varies:



Schemetic representation of the hemipenis of Oryxhopus petola (A) and Oryxhopus aff. melanogenys (B)

rectangular (only one and a half as long as high), square or triangle. As part of the research into the characteristics I also was engaged in the shape of the hemipenis (subject of big interest at the systematic of animals), with the number of ventrals, the subcaudals and the percentage of it that the tail has with regard to the rest of the body in order to find a reliable way to distinguish the two populations of each other. The examination of the hemipenis of two males of equal length has produced the following result: the shape and projections differ, what surely makes a distinction between the two species *Oxyrhopus*. By *Oxyrhopus petola* the bulged hemipenis is cylindrical, the sperm groove is divided, (two-lobbed hemipenis), and the thorny projections are of average length. The thorny little cups specially appear at the top of the hemipenis and have more space between them than those of

Oxyrhopus aff. melanogenys (see rough drawing A).

The hemipenis of *Oxyrhopus aff. melanogenys* is broader and pear-shaped; the sperm groove is divided (two-lobbed hemipenis); the thorny projections are, compared with the before mentioned animal of the same size, smaller, more numerous and stand closer together (see drawing B).

Besides this found bipartite it is possible to compare as distinctive mark – and not as a simple variation – the number of ventrals and subcaudals. In *Oxyrhopus aff. melanogenys* the ventrals vary from 180 till 197; the subcaudals from 72 till 91. These data I collected by studying 12 specimen; I had more of these animals then of the other kind. The tail forms 20,4 till 25% of the body, the average on the basis of 7 species is 22,5%.

Remark: the males possess more subcaudals (more than 85) than the females (lesser than 75); The proportion tail – body is therefore easy to use as sexual determination; the tail forms 20 to 21% in all by females and by males more than 24%.

By *Oxyrhopus petola* the ventrals and the subcaudals are more numerous; the ventrals add up to 207 and 212 pieces and the subcaudals vary from 111 till 114 (two species). The tail forms 26,5 till 26,77% of the body (average 26,6% by three species).

Supporting on these differences, it is possible to draw up a new determination key that reckons with the number of ventrals and subcaudals and the marking as characteristic element:

1 preocular separated from the frontal scale by the supraocular; orange body
.....***Oxyrhopus formosus***

2 preocular touches the frontal scale
.....**3**

3 more than 205 ventrals; more than 100 subcaudals;
marking characterised by an alternation of red and black bands;
belly region all pearly white
.....***Oxyrhopus petola***

4 lesser than 200 ventrals; lesser than 100 subcaudals;
marking characterised by trio's; sometimes vague melanism; white up to yellowish belly, abdomen always stippled with orange and black dots
.....***Oxyrhopus aff. melanogenys***

I always caught *Oxyrhopus aff. melanogenys* in the east and west of Guyana and on the edge of primary and secondary wood and in the savannah, where this specie lives on the ground and in the brushwood.

Photo by F. Starace

Oryxhopus petola, male

■ CONCLUSION

The populations of *Oxyrhopus* from Guyana represent species that differ strongly from each other by marking, but an examination has given this the lie to on account of characterised merits. As for *Oxyrhopus petola* it seems certain that we are dealing with two clearly different sorts of *Oxyrhopus*.

On account of the extraordinary complexity of this genus it seems sensible to me, in view of the appeared criterions, to make a distinction between these two populations and connect one with the *Oxyrhopus melanogenys*. Although I don't have enough data, I suggest considering this species as *Oxyrhopus aff. melanogenys*, in order to define the real identity of this population.

The area of distribution of this sort encloses the Amazon basin of Brazil, Peru, Bolivia and Equador.

An extension of this group in the direction of French Guyana belongs to the possibilities.

More searching research, in particular based on a profound study of a bigger number of specimens, will undoubtedly allow the work here presented by me to refine; I invite other researchers to take over this discussion.

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Photo by F. Starace

Oryxhopus petola, ventral side.

Photo by F. Starace

Oryxhopus aff. melanogenys, a male showing the orange banding only on the last part of his body.

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Photo by F. Starace

Oryxhopus aff. melanogenys (right) and O. petola (left).

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Photo by F. Starace

Oryxhopus aff. melanogenys, ventral side of a female

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