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NEW RECORDS OF AMPHIBIANS AND REPTILES FROM BURKINA FASO AND MALI

WOLFGANG BÖHME, HOLGER MEINIG AND MARK-OLIVER RÖDEL

Alexander Koenig Zoological Research Institute and Museum, Adenauerallee 160,
D-53113 Bonn, F. R. Germany

INTRODUCTION

Until 1960, Mali and Burkina Faso (formerly Upper Volta), formed part of French West Africa. The very short list of herpetological activities from that era has been summarised by Papenfuss (1969) who was the first to provide a detailed and exhaustive analysis of the "Mali region", i.e. the central part of the arid West Africa. He suspected that further research would outdate his list rather soon, and subsequent papers by Joger (1981), Schätti (1986), and Lambert & Joger (1994; in press) for Mali, and by Roman (1980) for Burkina Faso (snakes only) proved him to be right. The Alexander Koenig Zoological Research Institute and Museum (ZFMK) at Bonn received in 1983 a small collection of amphibians and reptiles from Burkina Faso, by Harald Meier, which contained some species not recorded from that country until today. Together with some additional new records and voucher specimens collected recently by H. Meinig in Mali and by M.-O. Rödel in Burkina Faso, they form the subject of the present paper.

LOCALITIES

The visited Malian localities are situated in the southern part of the country (see Fig. 1), in the sub-Saharan belt with a vegetation of the Sudan savanna type (dry woodland) with moister areas in the neighbourhood of the Niger and Bani rivers which are accompanied by some gallery forest. The localities Kita and Bamako lie in dense tree-savanna dominated by *Adansonia digitata*, *Kaya senegalensis* and *Bombax costatum*. The natural vegetation type of the localities Ségou, Bla and Bandiagara is a much more sparsely distributed dry forest with *A. digitata*, *Lannea acida*, *Terminalia macroptera* and *Andropogon* grass communities. Most landscapes are affected by intensive agricultural use. Mainly millet and cotton are cultivated, in the area of the inland delta of the Niger river also rice. The annual precipitation varies between 1200 mm in the south (Kita) and 500 mm in the north (plateau of Bandiagara). Most rainfalls occur between June and September. During the dry season in winter practically no rainfall occurs (data from Barth 1986). As the samples from Mali have been collected from December to February, during 2 short surveys concentrating on the mammalian fauna (Meinig, in prep.), the amphibian and snake species are likely to be much more underrepresented than the lizards.

The Burkina Faso material collected in 1983 has been taken in February (H. Meier), whereas the data by M.-O. Rödel were gathered in June and July 1992. These records have been made in the wet season, mostly around Bobo Dioulasso, but also in a locality close to the border to Ivory Coast, and in the northwest of Ouagadougou (see map, Fig. 1). All habitats lie within the Sudan savanna zone. Typically, they have only a sparse vegetation ("savanne herbeuse": Poilecot 1991). More dense vegetation, forming nearly riverine gallery forests were found close to some creeks at Korho and Daroha (both near Bobo Dioulasso). Collecting near Kafolo was done within cultivated land and on an inselberg. The habitat between Korho and Bobo Dioulasso, as well as the area around Daroha is characterised by impressive rocks within a very dry landscape.

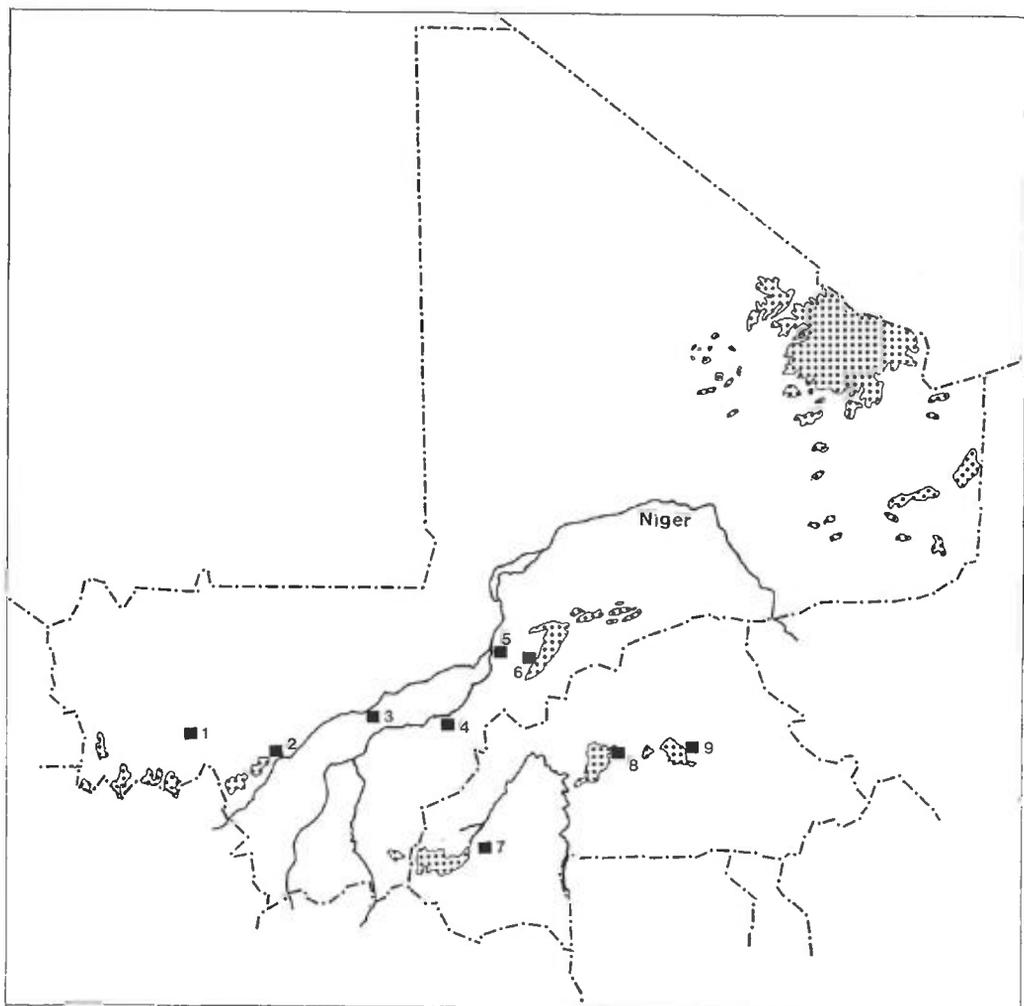


Figure 1. Map of Mali and Burkina Faso showing main localities mentioned in the text: 1 - Kita, 2 - Bamako, 3 - Ségou, 4 - Bla, 5 - Mopti, 6 - Bandiagara, 7 - Bobo-Dioulasso, 8 - Ouagadougou, 9 - Fada N'Gourma. Stippled areas: above 500 m asl.

Drawing by H. Meinig.

SPECIES ACCOUNTS

BF = Burkina Faso, M = Mali

Pipidae

Silurana tropicalis Gray, 1864

BF: ZFMK 38688-696, Bobo Dioulasso, H. Meier, 02.1983

The record of this forest species (Arnoult & Lamotte 1968, Loumont 1984) as far inland in arid West Africa as Bobo Dioulasso is very remarkable. The northernmost West

African populations of this species in Gambia (Gruschwitz *et al.* 1991) and Senegal (Casamance: Böhme 1978) are existing in gallery forests relatively close to the coast. The discovery of very similar sibling species of *S. tropicalis*, which is the only diploid form among its congeners, in the Central African forest block (see Loumont 1984, Frost 1985) stresses the necessity to re-examine also this northern savanna population as to its taxonomic identity. Its occurrence in Burkina Faso has also been proven by B. Schneider who found it at Dérégboué (pers. comm.). The only pipid known to occur in this country was so far:

Xenopus muelleri (Peters, 1844)

BE: Daroha, near Bobo Dioulasso, M.-O. Rödel, 14.06.1992

Found in ponds in sparsely vegetated Sudan savanna (not collected), together with *Phrynobatrachus francisci*, *P. natalensis*, *Dicroglossus occipitalis* and *Hylarana galamensis* (see below).

Lamotte (1967) and Arnoult & Lamotte (1968) recorded *X. muelleri* already from this country, which represents the westernmost outpost of this species in Africa (Frost 1985).

Bufonidae

Bufo maculatus (Hallowell, 1854)

BE: Korho, outskirts of Bobo Dioulasso, M.-O. Rödel, 14.06.1992

Under wooden logs along a creek several specimens in the Sudan savanna (not collected), more specimens heard calling from other places of the creek. The call was typical for this species as known to us from e.g. Ivory Coast (M.-O. Rödel).

Bufo regularis (Reuss, 1834)

BE: Between Korho and Bobo Dioulasso, M.-O. Rödel, 14.06.1992; M: ZFMK 57167, Bamako, H. Meinig, 15.12.1993; ZFMK 57168, Bla, H. Meinig, 16.12.1993; ZFMK 57173, Ségou, H. Meinig, 21.12.1993; Bandiagara, H. Meinig, 23.12.1993; Djenné, H. Meinig, 3.01.1994; Kita, H. Meinig, 9.01.1994.

The specimens observed in June 1992 near Korho, Burkina Faso, were found at the edge of a creek that was already desiccated except some very small remaining ponds. In Mali, this species was found to be most common in cultivated areas, being active also in the dry season, given that there was a little humidity. In February 1995 some pairs were observed spawning in the river Yamé at Bandiagara.

Bufo pentoni (Anderson, 1893)

BE: ZFMK 59509-510, Daroha (outskirts of Bobo Dioulasso), M.-O. Rödel, 14.06.1995; 3 still uncatalogued specimens 80 km NW of Ouagadougou, M.-O. Rödel, 30.07.1992.

Daroha: Immediately following an unexpected swarming of termites in the hottest noon period numerous adult *B. pentoni* appeared in order to feed on them; there was no rain! Fig. 2 C has been drawn after one of these specimens. Fig. 2 A & B have been drawn after tadpoles found in a puddle at the same locality. The specimens of the second locality kept alive now by one of the authors (M.-O. R.), were found at night during a rainy thunderstorm.

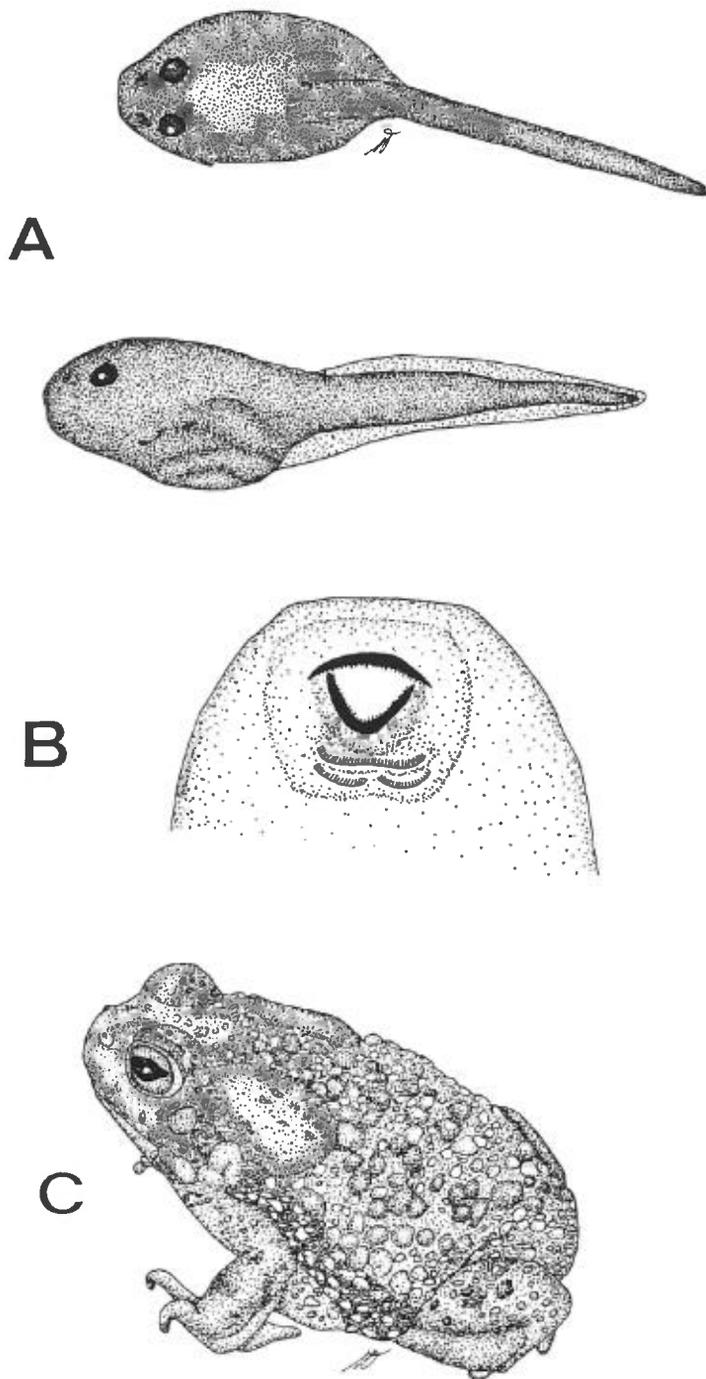


Figure 2. Tadpoles (A: dorsal and lateral views, B: mouthpart) and adult (C) of *Bufo pentoni* from Daroha, Burkina Faso.
Drawing by M.-O. Rödel

Ranidae

Dicroglossus occipitalis (Günther, 1858)

BF: ZFMK 38698-699, Fada N'Gourma, H. Meier, 02.1982; Daroha, M.-O. Rödel, 14.06.1992; M: ZFMK 57180-181, Bandiagara, H. Meinig, 25.12.1993; Djenné, H. Meinig, 3.01.1994; Bamako, H. Meinig, 15.12.1993; Kita, 10.01.1994; between Ségou and Bla, H. Meinig, 15.01.1994; ZFMK 60681, Bla, H. Meinig, 2.02.1995.

This species is extremely common all over Mali and Burkina Faso. In Daroha, adults were observed in June with their spawn. In Mali, it was found in great numbers along the banks of the Niger and Bani rivers. In Bandiagara it was found (December) in little ditches in the dry bed of the Yamé river, in Kita they lived in abandoned wells.

Hylarana galamensis (Duméril & Bibron, 1841)

BF: ZFMK 38700, Fada N'Gourma, H. Meier, 02.1983; Daroha, M.-O. Rödel, 14.06.1992.

The species was observed calling in the latter locality.

Phrynobatrachus francisci (Boulenger, 1912)

BF: near Kafolo/Comoé, M.-O. Rödel, 11.06.1992; Korho, near Bobo Dioulasso, M.-O. Rödel, 14.06.1992; Daroha, M.-O. Rödel, 14.06.1992.

This small-sized sibling of *P. natalensis* (see below) was found calling from shallow ponds during the day, which is also an important field character ("Forme de savane diurne": Lamotte & Xavier 1966). The diurnal activity is confined to the rainy season (Rödel 1995).

Phrynobatrachus natalensis (Smith, 1849)

BF: Daroha, M.-O. Rödel, 14.06.1992

At this locality found in syntopy with the *P. francisci*.

Phrynobatrachus sp.

M: ZFMK 60682, Bandiagara, H. Meinig, 10.01.1995.

This minute frog (13 mm head-body length) has no traces of webs between the toes. Therefore it cannot be referred to the three *Phrynobatrachus* species recorded so far from Mali (Lambert & Joger, in press): *P. francisci* (including *P. monodi*: see Lamotte & Xavier 1966), *P. natalensis* and *P. perpalmatius*.

Ptychadena macCarthyensis (Anderson, 1937)

BF: 80 km NW Ouagadougou, M.-O. Rödel, 30.07.1992.

Ptychadena schubotzi (Sternfeld, 1917)

BF: ZFMK 38701, Fada N'Gourma, H. Meier, 02.1983.

P schubotzi has been redefined by Perret (1981). It is the savanicolous sibling of the forest species *P. longirostris*. Its existence in Mali was discovered by Schätti (1986); the female from Fada N'Gourma is the first record from Burkina Faso.

Hyperoliidae

Afrixalus vittiger (Peters, 1876)

BF: 80 km NW Ouagadougou, M.-O. Rödel, 30.07.1992.

This sibling (not collected) of the forest-dwelling *A. fulvovittatus* (see Perret 1976) was also heard calling at Ouagadougou (M.-O. R.). Despite the general statement in Frost (1985): "Senegal to Ethiopia in savanna", definite records from Burkina Faso are so far lacking (Perret l.c.), so that the above observations represent the first registration of this species in this country.

Kassina fusca (Schjøtz, 1967)

BF: 80 km NW Ouagadougou, M.-O. Rödel, 30.07.1992.

Obviously so far unrecorded from Burkina Faso (Schjøtz 1967, Frost 1985); found in semiarid savanna with a few watering places for cattle.

Leptopelis viridis (Günther, 1868)

BF: 80 km NW Ouagadougou, M.-O. Rödel, 30.07.1992.

Reported from Burkina Faso by Schjøtz (1967) who heard it calling near Yako.

Hemisotidae

Hemisis marmoratus (Peters, 1854)

BF: Halfway between Ouagadougou and Bobo Dioulasso, M.-O. Rödel, 31.07.1992.

Known from several places in Ivory Coast (Lamotte 1967) including the Comoé National Park (bordering Burkina Faso) (Rödel *et al.* 1995 b). This species has obviously not explicitly been recorded from Burkina Faso so far.

Pelomedusidae

Pelomedusa subrufa (Lacépède, 1788)

BF: Korho and Daroha near Bobo Dioulasso, M.-O. Rödel, 14.06.1992; halfway between Bobo Dioulasso and Ouagadougou; M.-O. Rödel, 30.07.1992; M: ZFMK 57191, Wakoro Arrdt, Bla, H. Meinig, 20.12.1993; Ségou, H. Meinig, 01.1994.

Recorded from Burkina Faso already by Papenfuss (l.c.), the species seems to be widely distributed in this country. In Mali, however, only two records have so far been published: Kati (Angel 1922) and Bougouni (Schätti 1986). Our specimens, a mummified juvenile from the edge of a ditch of the Banko river from near Bla, and the Ségou specimen, an adult documented by photographs (ZFMK archives), represent therefore the third and fourth (and also the northernmost) records for Mali.

Pelusios castaneus (Schweigger, 1812)

BF: Near Kafolo/Comoé, M.-O. Rödel, 11.06.1992.

A newly hatched specimen (still kept alive by one of us: M.-O. R.). Ernst & Barbour (1989) listed the West African countries where *P. castaneus* has been recorded. Burkina Faso was not among them. However, Rödel & Grabow (1995) mentioned it from the adjoining Comoé National Park, Ivory Coast. Furthermore, they stress that this species has often been confused with *P. subniger* and *P. niger*.

Crocodylidae

Crocodylus niloticus (Laurenti, 1768)

M: near Bandiagara, H. Meinig, 2.1994.

Nile crocodiles are kept at several places as holy animals in ponds. We found them in three small villages near Bandiagara. Their religious mythical role may be an important factor for their survival in this area.

Agamidae

Agama agama (Linnaeus, 1758)

BF: Korho and Daroha, near Bobo Dioulasso, M.-O. Rödel, 14.06.1992; M: ZFMK 38709-711 and 39027, Fada N'Gourma, H. Meier, 02.1983; ZFMK 57166, Bamako, H. Meinig, 15.12.1993; ZFMK 57172, Bla, H. Meinig, 20.12.1993; ZFMK 57186, Kema Arrdt, Bandiagara, H. Meinig, 31.12.1993; Mopti, H. Meinig, 31.12.1993; Kita, H. Meinig, 9.01.1994.

A. agama proves again to be most widespread and numerous. The specimens observed by M.-O. Rödel lived in rocky habitats, whereas the Malian samples collected and observed by H. Meinig were mostly found in and around human settlements, living also in (hollow) tree trunks; only in the area of the Falaise de Bandiagara was the species also observed in rocky habitats.

Agama sankaranica (Chabanaud, 1918)

BF: ZFMK 39032, near Ouagadougou, H. Meier, 02.1982.

This species is distributed in savannas from Guinea-Bissau to Cameroon (Grandison 1968, Papenfuss 1969, Böhme & Schneider 1987), but has not yet been recorded from Burkina Faso. Our specimen constitutes the first record for this country. The observation by M.-O. Rödel of a ground-dwelling *Agama* different from *A. agama* at Daroha near Bobo Dioulasso indicates the possibility of a much wider distribution of *A. sankaranica* also in Burkina Faso.

Chamaeleonidae

Chamaeleo africanus (Laurenti, 1768)

M: Mopti, H. Meinig, 16.02.1995; Bandiagara, H. Meinig, 02.1995.

C. africanus belongs to those faunal elements that (like also *Mabuya quinquetaeniata* a.o.) range from NE Africa (Red Sea coast) westwards only to Mali, not reaching Senegalese territory (see Böhme 1985).

Chamaeleo senegalensis (Daudin, 1802)

BF: ZFMK 39031, Bobo Dioulasso, H. Meier, 02.1982.

Recorded from several Malian localities (see Papenfuss 1969), this widespread species has obviously not been explicitly recorded for Burkina Faso, wherefore our specimen represents the first documented record.

Gekkonidae

Hemidactylus brooki (Gray 1845)

BF: ZFMK 38702-706, Fada N'Gourma, H. Meier, 02.1982; **M:** ZFMK 57170-171, Bla, 18-19.12.1993; ZFMK 57174, between Ségou and Séwaré, 50 km NE Bla, H. Meinig 22.12.1993; ZFMK 57179, Bandiagara, H. Meinig, 24.12.1993; ZFMK 57190, Bla, H. Meinig, 11.01.1994.

In contrast to Schätti's experience in Mali, our specimens have been mostly found on roughcasted housewalls (see for example Böhme [1978] for Senegalese, and Håkansson [1981] and Gruschwitz *et al.* [1991] for Gambian populations); only one specimen was found under a piece of bark, in dry savanna landscape.

Ptyodactylus hasselquistii (Donndorff, 1798)

BF: ZFMK 38707-708 and 39030, Fada N'Gourma, H. Meier, 02.1982; ZFMK 59512, between Korho and Bobo Dioulasso, M.-O. Rödel, 14.06.1992; **M:** ZFMK 57184-185, Bandiagara, H. Meinig, 26.12.1993; ZFMK 60684, Bandiagara, H. Meinig, 16.02.1995; Kema Arrdt, Bandiagara, H. Meinig, 26.12.1993; Kita, H. Meinig, 9.01.1994.

P. hasselquistii, the West African populations of which are considered to represent the subspecies *ragazzii* Anderson, 1898 (Heimes 1987), can establish strong populations in suitable, i.e. rocky habitats. The Burkina Faso locality is characterised by steep rocks, the species being rather common there and active during the day. In Mali, they were particularly numerous in the rocky crevices of the cliffs of the Falaise de Bandiagara. At dawn they began to emit their characteristic short and very loud calls. They were also found in buildings and ruins and in one instance within a cave (Kita).

The last-named locality extends the known distribution area to the west, Mopti having been the westernmost previously known locality (Heimes 1987).

Tarentola annularis (Geoffroy, 1798)

M: ZFMK 57177-178, Bandiagara, H. Meinig, 24.12.1993.

T. annularis, which proved to be very common in Bandiagara (Plate 1), has an unusual disjunct distribution in West Africa. In Mali, its westernmost localities lie around the "inland delta" of the Niger river, westwards it is lacking except some relict populations in westernmost Senegal (Cap Manuel and some offshore islets). Only in the north, in western Mauritania, some isolated populations are known, which are partly coexisting with the following, otherwise mostly vicariant species.

Tarentola parvicarinata (Joger, 1980)

BF: ZFMK 59568, Bobo Dioulasso, M.-O. Rödel, 13.06.1992; M: ZFMK 57165, Bamako, H. Meinig, 14.12.1993, ZFMK 57189, Bamako, H. Meinig, 7.01.1994; ZFMK 60679-680, Bamako, H. Meinig, 25.02.1995; ZFMK 57188, Kita, H. Meinig, 11.01.1994.

All records of this species in Mali, including the two localities documented in this paper, lie west/northwards of the Niger (see Joger 1980: map). Only the record by Schätti (1986) from Bougouni lies southeast of the Niger and reduces the distributional gap towards Bobo Dioulasso, from where the first record from Burkina Faso can be introduced here (Plate 2). The fact, that this find, along with several more specimens not collected, was made in a hotel of a major city, however, may elucidate the strong capability of this species for a passive transport by man, similarly to the situation in Senegal (see Joger 1980).

The two specimens ZFMK 60679-680 were hatchlings. The collecting date (February) fits with the data known so far on its reproductive cycle (Joger l.c.).

Scincidae

Mabuya affinis (Gray, 1838)

BF: ZFMK 38719, Fada N'Gourma, H. Meier, 02.1982.

This species, which is distributed "from northern Angola along the West-African coast to Senegal (Grandison 1956)" (Hoogmoed 1974), enters the savanna mostly along watercourses/gallery-forests (Hoogmoed 1974, Böhme 1978, Gruschwitz *et al.* 1991), and enters the savanna areas of inland Guinea, Ivory Coast and Ghana (Hoogmoed l.c.). It has, however, neither been recorded from Mali (Lambert & Joger, in press) nor from Burkina Faso. The record from Fada N'Gourma is the first one for the latter country.

Mabuya perroteti (Duméril & Bibron, 1839)

BF: ZFMK 38697, Bobo Dioulasso, H. Meier, 02.1982; M: ZFMK 57169, Bla, H. Meinig, 16.12.1993, ZFMK 60683, Bandiagara, H. Meinig, 8.02.1995.

Böhme (1978) mentioned a reduced activity of adults during the dry season, the juveniles, however, being active just in this period. This annual activity pattern (temporal displacement) lead originally to the description of the juvenile as a separate species: *M. breviparietalis* Chabanaud (see Böhme l.c.). ZFMK 60683, from Bandiagara, is a hatchling fitting this pattern.

Mabuya quinquetaeniata complex

BF: ZFMK 38712-718 and 39029, Fada N'Gourma, H. Meier, 02.1982; Kafolo/Comoé, M.-O. Rödel, 11.06.1992, Korho and Daroha, near Bobo Dioulasso, M.-O. Rödel, 14.06.1992; M: ZFMK 57182-183, Kema Arrdt, Bandiagara, H. Meinig, 26.12.1993, Kita, H. Meinig, 11.01.1994.

Observed to be abundant in rocky environments in June by M.-O. Rödel, found to be rarer in December and January by H. Meinig in Mali, where, however, also the western

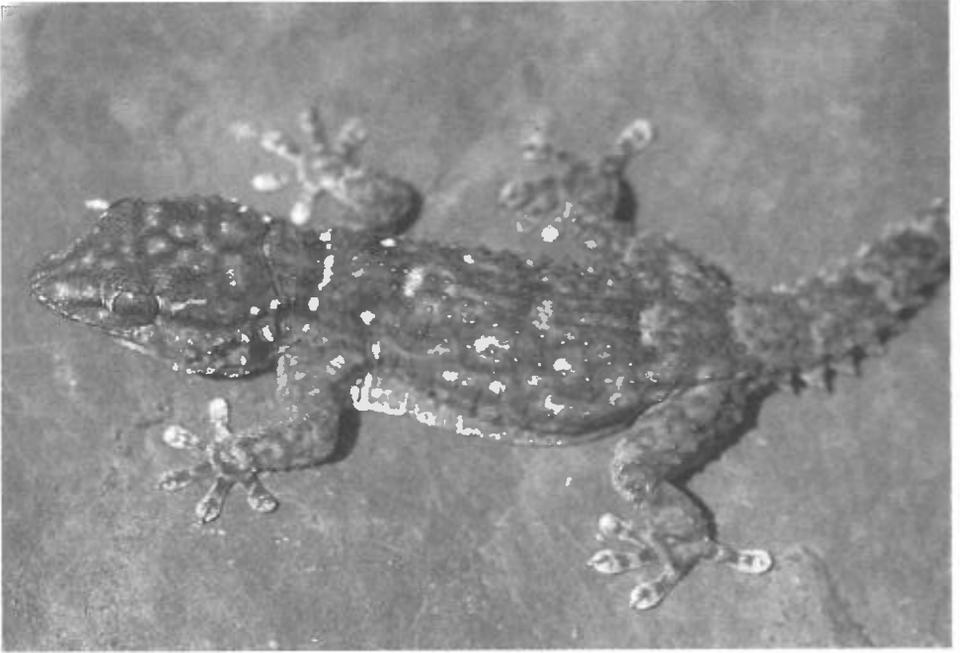


Plate 1. *Tarentola annularis* from Bandiagara, Mali (photograph by H. Meinig).

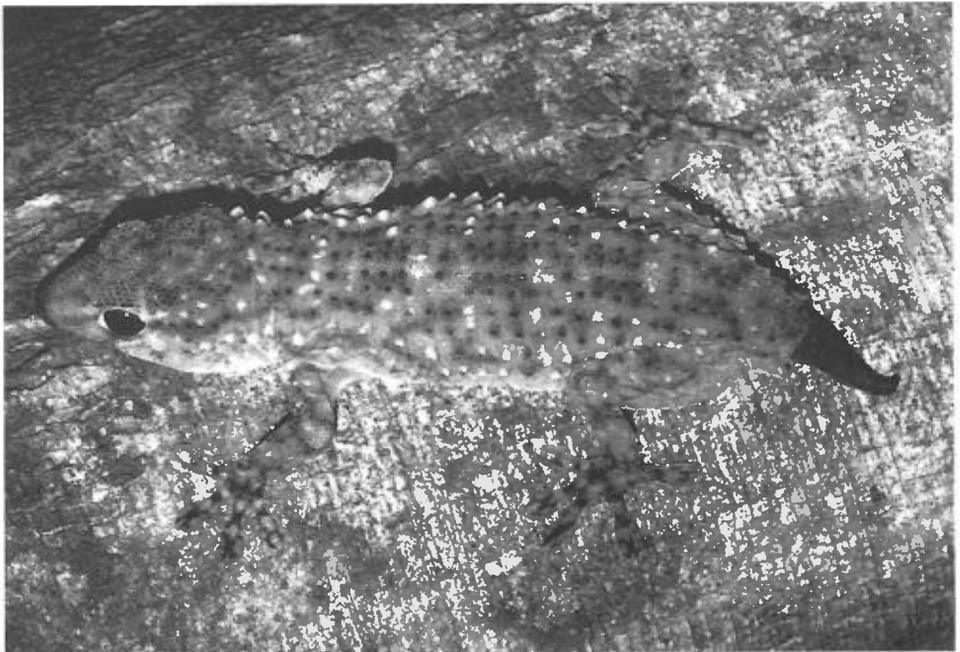


Plate 2. *Tarentola parvicarinata* from Bobo Dioulasso, Burkina Faso (photograph by M.-O. Rödel)

margin of its distribution area is situated. Böhme (1975) found two sibling forms of this complex in northern Cameroon, one of which can be identified with *M. (q.) scharica* Sternfeld, whereas the other one may correspond to *M. (q.) langheldi* Sternfeld. The above-listed vouchers fit the phenotype of *scharica*, but a thorough taxonomic revision of this species complex, which is so widely distributed in Africa, is highly warranted.

Lacertidae

Acanthodactylus guineensis (Boulenger, 1887)

BF: ZFMK 38720 and 39028, Fada N'Gourma, H. Meier, 02.1982; ZFMK 59511, Daroha near Bobo Dioulasso, M.-O. Rödel, 14.06.1992; M: ZFMK 57176, Bandiagara, H. Meinig, 23.12.1993.

In his revision of the genus *Acanthodactylus*, to which Salvador (1982) transferred this species from its original generic allocation *Eremias*, he gave also a complete list of its distributional records known to him. These were restricted to Nigeria and Ghana. He overlooked, however, *Eremias benueensis* Monard from Cameroon which is clearly a synonym of this species, thus extending the distribution eastwards to the latter country. Our records listed above are the first ones west of Ghana, consequently also the first ones for both Burkina Faso and Mali. A first tentative morphometric comparison indicated slight differences in pholidosis of the Malian and Burkina Faso specimens as compared with the values given by Salvador (l.c.). The sample size, however, is still too small to corroborate such differences. Two of us (W.B. & H.M.) are therefore preparing a taxonomic revision of all available material covering the entire species range. The Malian specimen, a female (Plate 3), is distinguished from the Burkina Fasoan (Plate 4), Ghanaian and Nigerian material by a particularly pale colour pattern, which perfectly fits the colour of the light reddish sands of the banks of the river Yamé where it had been caught.

As to the reproductive cycle, M.-O. Rödel was able to observe a couple at Daroha in June during courtship at noon, trying to copulate. The species was at this locality associated with harder soil and even with rocky habitat structures.

Varanidae

Varanus exanthematicus (Bosc, 1792)

M: ZFMK 60685, Bandiagara, H. Meinig, 02.1995.

The Steppe Monitor was found to be widely distributed and not rare in Mali (Papenfuss 1969, Buffrénil 1993). In the area of Bandiagara, one specimen (Plate 6) was caught - and released - at the banks of the river Yamé. The local people regularly eat this lizard, and dry, mummified heads, such as ZFMK 60685, can be found in many rubbish heaps, as well as in the shops of fetish-dealers.

Varanus niloticus (Linnaeus, 1766)

BF: Korho near Bobo Dioulasso, M.-O., Rödel, 14.06.1992.

Despite its wide distribution in the subsaharan savanna belt the Nile Monitor is not documented for Burkina Faso: "Aucune information, mais la présence ...est hautement



Plate 3. *Acanthodactylus guineensis* female from Bandiagara, Mali
(photograph by H. Meinig)



Plate 4. *Acanthodactylus guineensis* male from Daroha, Burkina Faso
(photograph by M.-O. Rödel)



Plate 5. Habitat of *Acanthodactylus guineensis* and of *Varanus exanthematicus* at Bandiagara, Mali (photograph by H. Meinig)



Plate 6. *Varanus exanthematicus* from Bandiagara, Mali (photograph by H. Meinig)

probable" (Buffrénil 1993). The above-listed record has, of course, not been collected, nevertheless it seems to represent the first concrete observation of this species in this country (see e.g. Mertens 1942, Papenfuss 1969, Buffrénil l.c., Ziegler & Böhme in prep.), As we do know records and voucher specimens from all adjacent countries around Burkina Faso (Mertens l.c., Papenfuss l.c., Buffrénil l.c., Ziegler & Böhme l.c.), the new record for the latter is not a faunistic surprise, but merely a simple problem of lacking information.

Leptotyphlopidae

Leptotyphlops bicolor (Jan, 1860)

BF: ZFMK 38721-722, Fada N'Gourma, H. Meier, 02.1982.

This species has already been recorded from Burkina Faso (Bobo Dioulasso, Garango: Papenfuss 1969; Hahn 1980, Hallermann & Rödel 1995).

Typhlopidae

Typhlops punctatus (Leach, 1819)

BF: ZFMK 38723, Fada N'Gourma, H. Meier, 02.1982.

According to Papenfuss (1969), Roux-Estève (1974) and Hahn (1980) this widespread species seemed to be unrecorded from Burkina Faso, it had, however, already been cited by Roman (1969) for that country. Our voucher has to be assigned to the nominotypic subspecies (Roux-Estève l.c., Hahn l.c.).

Boidae

Python sebae (Gmelin, 1789)

M: Bandiagara, H. Meinig, 02.1995.

An exuvia of this snake was found in Bandiagara.

Colubridae

Prosymna meleagris (Reinhardt, 1843)

BF: ZFMK 38726, Fada N'Gourma, H. Meier, 02.1982.

According to Broadley (1980), the savanicolous populations of this species have to be assigned to the subspecies *greigerti* Mocquard, the type locality of which is situated in Burkina Faso (Lobi region). There are several subsequent records from this country (Papenfuss: as *P. m. laurenti*; Roman 1969, Broadley l.c.).

Dasypeltis fasciata (Smith, 1849)

BF: ZFMK 38729, Fada N'Gourma, H. Meier, 02.1982.

This specimen consists only of the head and the anterior part of the body. Light brown in colouration, with a pattern of ill-defined, pale brown spots, it resembles the specimen

from Garango, Burkina Faso, cited by Schätti (1986). It was placed to *D. scabra* by Villiers (1965) but Schätti (l.c.) when discussing his Malian material thought it more likely to represent also *D. fasciata*. Egg-eating snakes are widely distributed in Burkina Faso (Roman 1969).

Dromophis praeornatus (Schlegel, 1837)

BF: ZFMK 38724, Fada N'Gourma, H. Meier, 02.1982.

Mentioned already by Papenfuss (1969) with two localities in Burkina Faso (Dano, Garango).

Psammophis cf. *phillipsi* (Hallowell, 1844)

BF: ZFMK 38725, Fada N'Gourma, H. Meier, 02.1982; M: ZFMK 57175, between Ségou and Sewarté, 158 km SW Sewarté, H. Meinig, 22.12.1993; ZFMK 57187, between Sewarté and Mopti, H. Meinig, 31.12.1993; Djenné, H. Meinig, 3.01.1994; Bla, H. Meinig, 30.01.1995.

Former records of this snake have been listed under the name *P. sibilans* (e.g. Papenfuss 1969, Roman 1969). Böhme (1978) discussed the taxonomy of this difficult complex in West Africa and followed Broadley (1977) in considering *P. phillipsi* Hallowell as a valid, distinct species. He offered some evidence that the savanna populations are easily distinguishable from the form occurring in the rain forest. This view was accepted by Schätti (1986). A thorough revisionary work by Brandstätter (1995) to be published soon corroborated the fact that *P. sibilans* does actually not occur in West Africa. Furthermore he could demonstrate that the forest (i.e. *phillipsi* sensu stricto) and the savanna forms in West Africa are taxonomically distinct, and that the savanna forms require recognition as a distinct taxon (Brandstätter in prep.). Our voucher material agrees very well with the last mentioned form, which is characterised by a striking juvenile pattern (Plate 7) which is successively reduced during ontogeny. Most subadults and younger adults show a very characteristic pair of orange-yellowish dorsolateral stripes which represent traces of the juvenile dress. Another typical feature is a brownish or reddish spotting of the supralabial shields (Plates 7 & 8) (see also Schätti's comment on his Malian specimens). It may be added here that *P. cf. sibilans* sensu Rödel *et al.* (1995a) from the Comoé National Park, Ivory Coast, has also to be assigned to the savanna form of *P. phillipsi*, which seems to occur there in syntopy with the typical forest-dwelling *P. phillipsi*.

This snake shows a great ecological plasticity. In Mali, it was found in cultivated areas (onion fields at Bandiagara, rice fields between Sewarté and Mopti) as well as in the thornbush savanna (between Segou and Sewarté). The specimen from Djenné (not preserved) was found dead on a road near the market place, in the centre of the city.

Elapidae

Elapsoidea semiannulata (Bocage, 1882)

BF: ZFMK 38727-728, Fada N'Gourma, H. Meier, 02.1982.

Rödel *et al.* (1995a) refer to two different types of colour pattern in the West African populations which are currently referred to the subspecies *moebiusi* Werner, 1897. In



Plate 7. *Psammophis* cf. *phillipsi* from between Ségou and Séwaré, Mali, showing still the juvenile colour pattern (photograph H. Meinig)



Plate 8. *Psammophis* cf. *phillipsi* from Bla, Mali, showing already the unicoloured adult dress (photograph by H. Meinig)

contrast to specimens figured by Roman (1969, 1976), Villiers (1975), and Gruschwitz *et al.* (1991) they documented a pattern consisting of black and brownish-grey bands, separated by narrow white stripes. Interestingly, our two specimens, both being juveniles, represent also these two different colour pattern types, ZFMK 38727 showing the first, and 38728 the second type. This argues against an age-dependant variation as suggested by Roman (1976). More material has to clarify this unusual variability and possible taxonomic implications. Generally, *E. semiannulata* is widely distributed in Burkina Faso, as shown by Roman (1969) who, in this first paper published by him, assigned it still to *E. guentheri*.

Naja melanoleuca (Hallowell, 1857)

BF: Korho near Bobo Dioulasso, M.-O. Rödel, 14.06.1992.

According to Roman (1969) this species is restricted to the southwestern portion of Burkina Faso, from where also our observation originates.

Viperidae

Bitis arietans (Merrem, 1820)

M: Bla and between Bla and Bandiagara, 158 km S Sewarté, H. Meinig, 22.12.1993.

Sloughed skins of the puff adder have been found in a cultivated field (Bla) and in thornbush savanna (between Bla and Bandiagara). Schätti (1986) reported this species from Kokungru, where he found a specimen in a peanut field.

FAUNISTIC AND ZOOGEOGRAPHICAL CONCLUSIONS

A comparison of the 42 species of amphibians (16) and reptiles (26) recorded from Burkina Faso and Mali in this paper reflects the extremely different state of knowledge of the herpetofauna in these two countries. For Mali, only one additional frog species (*Phrynobatrachus* sp.) can be added to the faunal list, its specific identity, however, remaining unclear due to its juvenile status; it is only clear that it is none of three species already recorded from Mali. Likewise, only one reptile species can be added to the Malian faunal list through this paper, viz. *Acanthodactylus guineensis*. This lizard is also unknown so far from Burkina Faso, having been collected before only in Ghana, Nigeria and Cameroon. Similarly, the likewise West African endemics *Agama sankaranica* and *Tarentola parvicarinata* were definitely not known from Burkina Faso before. However, also some particularly wide-ranging reptile species like *Chamaeleo senegalensis*, *Mabuya affinis* and *Varanus niloticus* had, although to be expected with great likelihood, not specifically been recorded from this country! In some instances such as *Bufo pentoni*, *Hylarana galamensis*, *Ptychadena macCarthyensis*, and *Hemisus marmoratus* the same may be true, because their vast distribution areas are mostly described in a very general way as e.g. "from Senegal to Ethiopia" or so. In rarer species, however, the published information on their areas of distribution is usually much more precise, therefore, we can explicitly add *Silurana tropicalis*, *Ptychadena schubotzi*, *Afixalus vittiger* and *Kassina fusca* to the faunal list of Burkina Faso. In contrast to frogs and lizards the snake fauna of this country has been surveyed particularly thoroughly, due to the activities of the resident ophidiologist B. Roman in Ouagadougou. However, the state of knowledge in Mali is worse.

As can be seen from the results of the few and short missions reported on here, the discovery of several additional amphibian and reptile species has to be expected in both Mali and Burkina Faso when the faunistic surveying will be intensified. Also the discovery of new taxa is well possible due to the fact that this region represents also an area of endemism. Remarkable and of particular historical-biogeographical importance is the first discovery of forest species (*Silurana tropicalis*, *Mabuya affinis*) so far inland in arid West Africa as Burkina Faso. They elucidate the role of gallery forests as relict sites (possibly also as dispersal pathways?) and may be an indication that the forest fauna relicts are disappearing more slowly than the forest itself.

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REFERENCES

- Angel, F. (1922). Sur une collection de reptiles et de batraciens, recueillis au Soudan français par la mission du Dr. Millet Horsin. *Bulletin du Muséum National d'Histoire Naturelle*, Paris 28: 39-41.
- Arnoult, J. and M. Lamotte (1968). Les Pipidae de l'Ouest africain et du Cameroun. *Bulletin de l'Institut Fondamental d'Afrique Noire* (A) 30: 270-306.
- Barth, H. K. (1986). Mali - eine geographische Landeskunde. In: Winssenschaftliche Länderkunden (W. Storkebaum ed.), vol. 25, 393 pp.
- Böhme, W. (1975). Zur Herpetofaunistik Kameruns, mit Beschreibung eines neuen Scinciden. *Bonner zoologische Beiträge* 26: 2-48.
- Böhme, W. (1978). Zur Herpetofaunistik des Senegal. *Bonner zoologische Beiträge* 29: 360-417.
- Böhme, W. (1985). Zoogeographical patterns of the lizard fauna of the African subsaharan savanna belt, with preliminary description of a new chameleon. *Proceedings of the International Symposium on African Vertebrates*, Bonn (K. Schuchmann ed.), pp 471-478.
- Böhme, W. and B. Schneider (1987). Zur Herpetofaunistik Kameruns (III) mit Beschreibung einer neuen *Cardioglossa* (Anura: Arthroleptidae). *Bonner zoologische Beiträge* 38: 241-263.
- Brandstätter, F. (1995). *Eine Revision der Gattung Psammophis mit Berücksichtigung der Schwesterngattungen innerhalb der Tribus Psammophiini (Colubridae, Lycodontinae)*. Doctoral Dissertation University of Saarbrücken, 484 pp.
- Broadley, D. G. (1977). A review of the genus *Psammophis* in southern Africa (Serpentes: Colubridae). *Arnoldia* 8: 1-29.
- Broadley, D. G. (1980). A revision of the African snake genus *Prosymna* Gray (Colubridae). *Occasional papers of the National Museums and Monuments*, Umtali, 6(7): 481-556.
- Buffrénil, V. de (1993). *Les varans africains (Varanus niloticus et Varanus exanthematicus)*. *Données synthèse sur leur biologie et leur exploitation*. Secrétariat de la Convention sur le commerce international des espèces de faune et de flore menacées d'extinction (CITES), 162 pp.
- Ernst, C. H. and R. W. Barbour (1989). *Turtles of the world*. Smithsonian Institution Press, Washington, 313 pp.

- Frost, D. (1985). *Amphibian species of the world*. Allen Press, Lawrence/Kansas, 732 pp.
- Grandison, A.C.G. (1956). On a collection of lizards from West Africa. *Bulletin de l'Institut français d'Afrique Noire* (A) 18: 224-245.
- Grandison, A.C.G. (1968). Nigerian lizards of the genus *Agama* (Sauria: Agamidae). *Bulletin of the British Museum (Natural History), Zoology* 17(3): 67-90.
- Gruschwitz, M., Lenz, S. and W. Böhme (1991). Zur Kenntnis der Herpetofauna von Gambia (Westafrika). *Herpetofauna* 13: 13-22 and 27-34.
- Hahn, D.E. (1980). Liste der rezenten Amphibien und Reptilien. Anomalepididae, Leptotyphlopidae, Typhlopidae. *Das Tierreich* 101: 1-93.
- Håkansson, N.T. (1981). An annotated checklist of reptiles known to occur in The Gambia. *Journal of Herpetology* 15: 155-161.
- Hallermann, J. and M.-O. Rödel (1995). A new species of *Leptotyphlops* (Serpentes: Leptotyphlopidae) of the *longicaudus* -group from West Africa. *Stuttgarter Beiträge zur Naturkunde* (A) 532: 1-8.
- Heimes, P. (1987). Beitrag zur Systematik der Fächerfinger (Sauria: Gekkonidae: *Ptyodactylus*). *Salamandra* 23: 212-235.
- Hoogmoed, M.S. (1974). Ghanese lizards of the genus *Mabuya* (Scincidae, Sauria, Reptilia). *Zoologische Verhandlungen* 138: 1-62.
- Joger, U. (1980). Eine neue Art der Gattung *Tarentola* (Reptilia, Sauria: Gekkonidae) aus Westafrika. *Amphibia-Reptilia* 1: 137-147.
- Joger, U. (1981). Zur Herpetofaunistik Westafrikas. *Bonner zoologische Beiträge* 32: 297-340.
- Lambert, M.K. and U. Joger (in press). Analysis of the herpetofauna of the Republic of Mali, II. Specific diversity and biogeographic assemblages. In: *International Symposium on Biodiversity of Ecosystems in the Tropics* (H. Ulrich ed.), Bonn.
- Lamotte, M. (1967). Les Batraciens de la région de Gpakobo (Côte d'Ivoire). *Bulletin de l'Institut Fondamental d'Afrique Noire* (A) 29: 218-294.
- Lamotte, M. and F. Xavier (1966). *Phrynobatrachus natalensis* (Smith) et *Phrynobatrachus francisci* (Boulenger): deux espèces de l'Ouest africain difficiles à distinguer. *Bulletin de l'Institut Fondamental d'Afrique Noire* (A) 28: 343-361.
- Loumont, C. (1983). Deux nouvelles espèces de *Xenopus* du Cameroun (Amphibia: Pipidae). *Revue Suisse de Zoologie* 90: 169-177.
- Loumont, C. (1984). Current distribution of the genus *Xenopus* in Africa and future prospects. *Revue Suisse de Zoologie* 91: 725-746.
- Mertens, R. (1942). Die Familie der Warane (Varanidae). *Abhandlungen der Senckenbergischen naturforschenden Gesellschaft* 466: 235-391.
- Papenfuss, T. J. (1969). Preliminary analysis of the reptiles of arid central West Africa. *The Wasmann Journal of Biology* 27: 249-325.
- Perret, J.L. (1976). Identité de quelques *Afraxalus* (Amphibia, Salientia, Hyperoliidae). *Bulletin de la Société Neuchâteloise des Sciences Naturelles* 99: 19-28.
- Perret, J.L. (1981). Le statut de *Ptychadena schubotzi* (Sternfeld) (Amphibia, Ranidae). *Bulletin de la Société Neuchâteloise des Sciences Naturelles* 104: 53-57.
- Poilecot, P. (1991). Un écosystème de savane soudanienne: Le Parc National de la Comoé, Côte d'Ivoire (UNESCO), 346 pp.
- Rödel, M.-O. (1995). *Phrynobatrachus francisci* im Comoé - Nationalpark, Elfenbeinküste: Lebensräume, Aktivität und Nahrung in der ausgehenden Trockenzeit. *Salamandra* 31: 79-92.
- Rödel, M.-O. and K. Grabow (1995). Die Schildkröten und Krokodile des Comoé-Nationalparks, Elfenbeinküste (Reptilia: Testudines et Crocodylia). *Faunistische Abhandlungen Staatliches Museum für Tierkunde Dresden* 20: 133-144.

- Rödel, M.-O., Grabow, K., Böckheler, C. and D. Mahsberg (1995a). Die Schlangen des Comoé-Nationalparks, Elfenbeinküste (Reptilia: Squamata: Serpentes). *Stuttgarter Beiträge zur Naturkunde (A)* **528**: 1-18.
- Rödel, M.-O., Spieler, M., Grabow, K. and C. Böckheler (1995b). *Hemisis marmoratus* (Peters, 1854). (Anura: Hemisotidae), Fortpflanzungsstrategien eines Savannenfrosches. *Bonner zoologische Beiträge* **45**: 191-207.
- Roman, B. (1969). *Serpents de Haute-Volta*. Ougadougou, 22 pp.
- Roman, B. (1976). *Serpents mortels de l'Ouest africain*. Editions et Publications de Pères Jesuites, Le Caire, 60 pp.
- Roman, B. (1980). *Serpents de Haute-Volta*. C.N.R.S.T., Ouagadougou, 131 pp.
- Roux-Estève, R. (1974). Révision systématique des Typhlopidae d'Afrique, Reptilia - Serpentes. *Mémoires du Muséum National d'Histoire naturelle*, Paris (A) **87**: 1-313.
- Salvador, A. (1982). A revision of the lizards of the genus *Acanthodactylus* (Sauria: Lacertidae). *Bonner zoologische Monographien* **16**: 1-167.
- Schätti, B. (1986). Herpetologische Ausbeute einer Sammelreise nach Mali (Amphibia, Reptilia). *Revue Suisse de Zoologie* **93**: 765-788.
- Schiøtz, A. (1967). The treefrogs (Rhacophoridae) of West Africa. *Spolia zoologica Haunienses* **25**: 1-346.
- Villiers, A. (1965). Serpents récoltés au Mali et en Haute-Volta par le Dr Lamontellerie. *Bulletin de l'Institut Fondamental d'Afrique Noire (A)* **27**: 1192-1195.
- Villiers, A. (1975). *Les serpents de l'Ouest africain*. Initiations africaines, Dakar, 195 pp.

NOTE ADDED IN PROOF

In the light of some new findings the Burkina Fasoan records of *Phrynobatrachus francisci* and *P. natalensis* are now regarded *P. c.f. latifrons* Ahl.1924 and *P. c.f. francisci* (Boulenger, 1912) respectively. For discussion see Rödel, M.-O. (in press): *Amphibien der westafrikanischen Savanne*. Edition Chimaira, Frankfurt/M. 300 pp.