

1-1-2000

What are the Elephants of West Africa?

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Recommended Citation

Groves, C. P. (2000). What are the Elephants of West Africa?. *Elephant*, 2(4), 7-8. Doi: 10.22237/elephant/1521732177

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studied specimens or found records of the genus from Senegal, Guinea, Guinea-Bissau, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin and Nigeria. All are clearly *P. porcus*, despite the fact that some of the records are apparently from north of the forest zone proper, perhaps (as Grubb suggests) in gallery forest. There is no sign that *P. larvatus* extends into West Africa; in fact, there are no indications that it extends west of about the Garamba region of north east DRC.

The African buffaloes are traditionally all placed in a single species, *Syncerus caffer*, because there is no doubt that the large black savannah buffaloes and the small red forest ones commonly interbreed where their ranges meet, despite being dramatically different (Grubb, 1972). The horns of the East and South African black race (*S. c. caffer*, the Cape Buffalo) sweep out in a wide curve and meet to form a bony "casque" on the forehead, whereas those of the Red Buffalo (*S. c. nanus*) turn simply upward and have only the slightest indication of a "casque". There are two supposedly intermediate races: one from the West African savannah (*S. c. brachyceros*), larger than *S. c. nanus*, often partly or completely black when mature (as, in fact, are a few specimens of *nanus* too), and with more spreading horns; and one from Chad, Sudan and Ethiopia (*S. c. aequinoctialis*) which is essentially a smaller version of the Cape Buffalo. In fact, as Grubb shows, the two are not fully intermediate; *S. c. brachyceros* is essentially a larger Red Buffalo and overlaps with it in its characters, while *S. c. aequinoctialis* is barely if at all distinct from the Cape Buffalo. There is actually a sharp break between them in the Shari River district, southeast of Lake Chad, 15-27°E, 3-12°N, with very little overlap of characters; while in northeastern DRC (in the Garamba region), and in the Central Rift Highlands, typical forest Red Buffaloes come into close contact with big Black Buffaloes with little sign of interbreeding (in the Rift region) or none at all (in Garamba). These sharp breaks are why Grubb refers to "incipient speciation", and it seems clear that today it would be more reasonable to recognize two species, *S. caffer* and *S. nanus*. As in the Bushpig case, the East and South African savannah species does not extend into West Africa; instead, the Red Buffalo (more decisively than the Red River Hog, it would seem) extends out from the forest onto the savannahs West of Lake Chad.

Elephant, Volume 2, Number 4, pages 7-8
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WHAT ARE THE ELEPHANTS OF WEST AFRICA?

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As well as the elephant (*Loxodonta*), three other large mammal species or species-groups have distributions covering both the rainforest bloc and the savannah bloc in Africa: buffalo (*Syncerus*), bushpig (*Potamochoerus*), and bushbuck (*Tragelaphus scriptus* group). The studies of Peter Grubb (1993) have thrown light on how these three species respond taxonomically to this diversity of habitats.

The simplest case is *Potamochoerus* (Grubb, 1993). The Bushpig (*P. larvatus*) is widespread in savannah (or, more strictly, bush) areas from Ethiopia through East Africa into Angola and the Cape; it thrives in Madagascar, where it was introduced in pre-colonial times. The Red River Hog (*P. porcus*) is found in the rainforest zone, from the Democratic Republic of the Congo (DRC, formerly Zaire) through West-Central Africa on through West Africa. The ranges of the two species are mapped by Vercammen *et al.* (1993). Grubb could find no indication of interbreeding between them, though their ranges came close around the Sudan-Congo border and in the Central Rift Highlands where the forest ends and the savannah begins; in fact, *P. larvatus* is found in forested areas in the latter region. In West Africa, he

The case of the Bushbuck (*Tragelaphus scriptus*) is yet more complex (Grubb, 1985). Small red bushbuck with white stripes and spots (*scriptus* group) extend throughout the forest bloc and north into the savannah/bush country of West Africa, Chad and Sudan north as far as the Bahr-el-Ghazal. Large sexually-dichromatic bushbuck (males chestnut to dark brown, females redder), with few white markings (*sylvaticus* group), inhabit the savannah/bush country of East and South Africa. The ranges of the two appear to interdigitate in southeastern Sudan, Uganda, and northeastern DRC, with little or no sign of interbreeding. The situation is complicated because there are bushbuck in Ethiopia and in the eastern coastal forests (from Somalia into Tanzania) which are different yet again. Probably the species *T. scriptus* ought to be divided into several species. Be that as it may: the important point is that in all three species, we have a rainforest and a savannah/bush species, which may or may not interbreed, but in any case sparingly and not panmictically. But in West Africa, it is the forest species, not the expected savannah species, which occupies the savannah/bush zone. In the bushpig and bushbuck, the interloper extends into the Sudan; in the buffalo, only to the longitude of Lake Chad.

The fourth savannah/forest group is, of course, the African Elephant. Papers in this volume demonstrate that the Forest

Elephant is a different species, *Loxodonta cyclotis*, from the Bush Elephant, *L. africana*, and that there is some interbreeding between them in the Central Rift region but not, or not detectably, in the Garamba region of northeastern DRC. It is worth asking: what is the case in West Africa?

In the Grubb/Groves craniometry dataset, material from West Africa comes from the following localities: Sierra Leone - Liberia border: Gola (7-8°N, 11-12°W); Liberia: Cavally River (6°N, 8°W); Ivory Coast: Guiglo (6°40'N, 7°28'W), Daloa (6°56'N, 6°28'W), Bouaflé (7°01'N, 5°47'W); Ghana: Nandom (10°57'N, 2°43'W); Togo: Sokodé (8°59'N, 1°11'E); Nigeria: Abeocuta (7°10'N, 3°26'E).

From some of these localities we have fairly respectable samples. In Discriminant Analyses, they were always entered as Unknowns, but every one of the specimens was firmly confirmed as *L. cyclotis*. At least two of the localities (Nandom and Sokodé) are well to the north of the forest bloc. It is worth asking, is the African Elephant analogous to the other three species? Is the Bush Elephant restricted to savannahs east of Lake Chad? And does the Forest Elephant take its place in the savannahs of West Africa?

The answer is no. The elephants are different. We simply have to accept that the Grubb/Groves dataset is in this instance, unrepresentative. Books on East, South and Southwest African wildlife abound, each of them full of pictures of elephants; but it is unexpectedly difficult to find information on West African elephants. The exception is the book in French by Pierre Pfeffer (1989).

Pfeffer is well aware of the differences between the two elephants, although he regards them, in accordance with tradition, as subspecies of just the one species. He notes (Pfeffer, 1989, p. 26) that the relationship between them is by no means simple and gives the following information. In Ivory Coast, between Gagnoa and Sinfra, he found Bush Elephants "mélanges" (intermingled) with elephants showing Forest characters. In northern Togo, in full savannah, he saw clear Forest Elephants. Most recently, in southern Burkina Faso near the Ghana border, he saw groups of plump, short-legged elephants with round ears, coexisting but not interbreeding with much larger, more slender elephants with big triangular ears. He goes on to describe the two and give a few more details on their distribution and, above all, give photos of elephants with the places where they were photographed. He illustrates Forest Elephants in the north of the Central African Republic (Pfeffer, 1989, p. 12) and in Niokolo Koba National Park, Senegal (p. 169), and Bush Elephants at Nazinga and elsewhere in Burkina Faso (pp. 8, 17, 60, 124), in the north of the Central African Republic (pp. 32, 56-57, 62, 77, 88), and in Waza Reserve, northern Cameroon (pp. 110, 136-137), as well as in Chad and East Africa. But he also illustrates an intermediate elephant photographed at Fosse aux Lions, northern Togo (p. 27).

In contrast to the situation with buffalo, bushpig, and bushbuck, savannah elephants (*L. africana*) do extend into the savannahs of West Africa where, it seems, they generally coexist with *L. cyclotis* and occasionally interbreed with them. Sikes (1964) comparison of Nigerian forest and bush elephants led her to conclude that they were sub-species. In fact, Haltenorth and Diller (1977) refer to them as 'eco-types'.

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