

## Short Note

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# The first historical record of a rhinoceros in Togo

**Abstract:** A rhinoceros horn was presented to the French governor by the tribal chiefs of Togo in 1941. This nasal horn, referable to the black rhino *Diceros bicornis*, most likely originates from this West African country. No rhinoceros remains have been recorded in Togo thus far, which provides a good opportunity to update the historical distribution of all three African rhino species (*Diceros bicornis*, *Ceratotherium simum*, and *Ceratotherium cottoni*).

**Keywords:** black rhino; *Diceros bicornis longipes*; nasal horn; West Africa.

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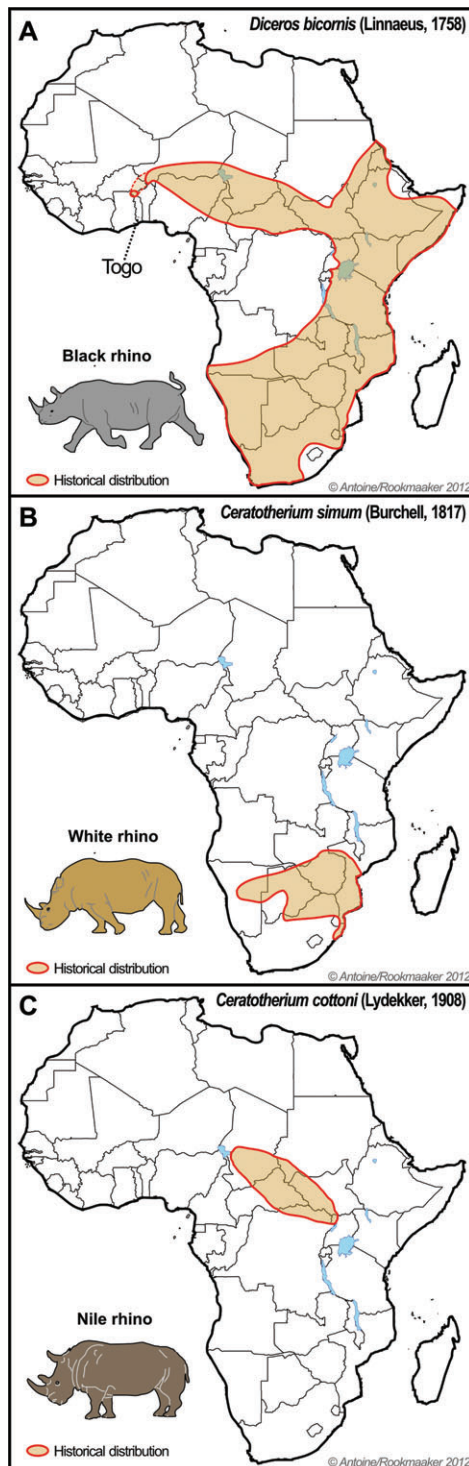
Rhinoceroses are among the most endangered mammalian species today, with three species [*Rhinoceros sondaicus* Desmarest, 1822; *Dicerorhinus sumatrensis* (Fischer, 1814); and *Diceros bicornis* (Linnaeus, 1758)] listed by the International Union for Conservation of Nature (IUCN) as Critically Endangered, one (*Rhinoceros unicornis* Linnaeus, 1758) as Vulnerable, and only one [*Ceratotherium simum* (Burchell, 1817)] as Near Threatened (<http://www.iucnredlist.org/>). Before hunting and poaching nearly led to their eradication in the 20th century, these megaherbivores were prominent elements of Cenozoic terrestrial ecosystems in Eurasia, North America, and Africa (Prothero 2005, Geraads 2010, Antoine 2012).

Three closely allied two-horned rhinoceros species are currently recognised in Africa, i.e., the black rhino (*Diceros bicornis*), the white rhino (*Ceratotherium simum*), and the Nile rhino [*Ceratotherium cottoni* (Lydekker, 1908)], recently elevated to specific status (Groves and Grubb 2011, Groves and Robovsky 2011, Rookmaaker 2011). None of these have ever been recorded in Togo (Figure 1). In fact, the closest occurrence might have been in the extreme south-western part of Niger (a distance of

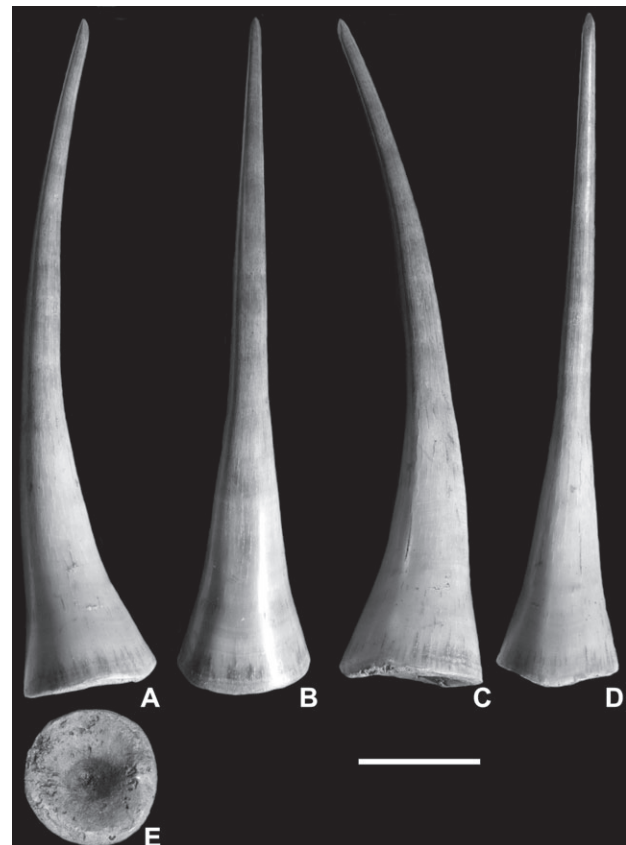
about 300 km from the nearest border), where tracks were seen in 1853 and locals had a name for the rhinoceros in the 1930s (Rookmaaker 2004). Any possibility of a rhinoceros living or having lived in this part of West Africa is therefore of much interest (Figure 1). A rhinoceros in Togo would most likely belong to the western subspecies of the black rhinoceros (*Diceros bicornis longipes* Zukowsky, 1949), which was declared extinct by IUCN at the end of 2011 (Lagrot et al. 2007, Emslie 2011).

The first reference to a rhinoceros in Togo came to light when one of us (POA) was asked by the French government to authenticate a rhino horn kept in a private collection for certification in February 2012. The current owner had evidence that the horn was a present to Michel Lucien Montagné (1886–1942), the French governor of Togo ('Commissaire de la République Française au Togo') from 23 October 1936 to 16 March 1941 (Napo Kakaye 2010: pp. 121–122). On the day of his departure, the chiefs representing all the tribes and councils of elders of Togo, and a crowd of 600,000 people gathered near the stadium of Lomé to pay tribute to his governance (Napo Kakaye 2010: pp. 135–145). During the ceremonies, the chiefs presented Montagné with a rhinoceros horn. Lucien Montagné passed away in 1942, and never returned to Africa in the intervening time, which leaves no doubt as regards the circumstances and date for the concerned gift.

The corresponding horn (TOG-12-01; Figure 2) currently weighs 1.535 kg. Its preserved anatomic length is 610 mm; its base was at least 118 mm wide and 113 mm long (sagittally). It forms an elongate cone, circular to oval in cross section and curved upwards and backwards, with a bilateral sagittal symmetry. It is flared at its base and much sharper in the 50 apical centimetres, with a small and oblique postero-dorsal facet due to wear at its tip (Figure 2A). The base is circular (Figure 2E). Such morphological features are consistent with a nasal horn of a black rhinoceros, *Diceros bicornis*. The base was cut with a saw and worked with a grater, but vascular prints corresponding to its insertion on nasal bones are still visible in places (Figure 2E). Its outer surface was polished post-mortem. Its colour is fawn to greyish, with a dorsoventral alternation of darker/lighter horizontal bands, the light bands being broader than the darker ones (Figure 2B).



**Figure 1** Historical (ca. 1800) distribution of the three surviving species of rhinoceros in Africa. (A) The black rhino, *Diceros bicornis*; (B) the white rhino, *Ceratotherium simum*; and (C) the Nile rhino, *Ceratotherium cottoni*. Given the function of Michel Lucien Montagné (French governor of Togo, 1936–1941) and the respective ranges of rhinos in Africa, the horn illustrated in Figure 2 most likely belonged to *Diceros bicornis longipes* and originated from northern Togo. Widely reworked from Rookmaaker (2004).



**Figure 2** The black rhino horn presented to Michel Lucien Montagné in Lomé, Togo, on 16 March 1941 (TOG-12-01). (A) Left lateral view. (B) Anterior view. (C) Right lateral view. (D) Posterior view. (E) Ventral view. Scale bar, 100 mm.

About 20 paired bands are visible, either corresponding to seasonal/annual growth, as hypothesised in the extinct ice-aged woolly rhino *Coelodonta antiquitatis* (Blumenbach, 1799) (e.g., Fortelius 1983, Kirillova and Shidlovskiy 2010), or related to differences in the rate of melanin during horn growth and ‘caused by changes in keratinisation due to external factors’, such as food availability, as observed in extant white rhinos (Hieronymus et al. 2006: pp. 1175). It is certain that the horn belonged to an adult individual. According to Kirillova and Shidlovskiy (2010), its individual age would be estimated at approximately 20–25 years at death.

It could be argued that the horn was obtained by the chiefs through trade. While there is obviously no way to totally exclude that possibility, it may also have been a horn that had once belonged to a rhinoceros that lived in Togo (Figure 1).

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## References

- Antoine, P.-O. 2012. Pleistocene and Holocene rhinocerotids (Mammalia, Perissodactyla) from the Indochinese Peninsula. *C. R. Palevol.* 11: 159–168.
- Emslie, R. 2011. *Diceros bicornis* ssp. *longipes*. In: IUCN 2011. IUCN Red List of Threatened Species. Version 2011.2. www.iucnredlist.org. Downloaded on 27 March 2012.
- Fortelius, M. 1983. The morphology and paleobiological significance of the horns of *Coelodonta antiquitatis* (Mammalia: Rhinocerotidae). *J. Vert. Paleont.* 3: 125–135.
- Geraads, D. 2010. Chapter 34 – Rhinocerotidae. In: (L. Werdelin and W.J. Sanders, eds.) *Cenozoic mammals of Africa*. University of California Press, Berkeley, CA. pp. 675–689.
- Groves, C.P. and P. Grubb. 2011. *Ungulate taxonomy*. Johns Hopkins University Press, Baltimore, MD. pp. 1–416.
- Groves, C.P. and J. Robovsky. 2011. African rhinos and elephants: biodiversity and its preservation. *Pachyderm* 50: 69–71.
- Hieronimus, T.L., L.M. Witmer and R.C. Ridgely. 2006. Structure of white rhinoceros (*Ceratotherium simum*) horn investigated by X-ray computed tomography and histology with implications for growth and external form. *J. Morphol.* 267: 1172–1176.
- Kirillova, I.V. and F.K. Shidlovskiy. 2010. Age estimation of individual age and season of death in woolly rhinoceros, *Coelodonta antiquitatis* (Blumenbach, 1799), from Sakha-Yakutia, Russia. *Quat. Sci. Rev.* 29: 3106–3114.
- Lagrot, I., J.F. Lagrot and P. Bour. 2007. Probable extinction of the western black rhino, *Diceros bicornis longipes*: 2006 survey in northern Cameroon. *Pachyderm* 43: 19–28.
- Napo Kakaye, L.N. 2010. Histoire politique et administrative du Togo: regard sur un nationaliste de la première heure. L'Harmattan, Paris. pp. 324.
- Prothero, D.R. 2005. *The evolution of North American rhinoceroses*. Cambridge University Press, Cambridge, UK. pp. 218.
- Rookmaaker, L.C. 2004. Historical distribution of the black rhinoceros (*Diceros bicornis*) in West Africa. *Afr. Zool.* 39: 63–70.
- Rookmaaker, L.C. 2011. A review of black rhino systematics proposed in *Ungulate Taxonomy* by Groves and Grubb (2011) and its implications for rhino conservation. *Pachyderm* 50: 72–76.