

Note on the maximum length of *Kinixys erosa* (SCHWEIGGER, 1812) (Chelonia, Testudinidae)

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Summary

70 years after SCHMIDT, we describe the new record of length for *Kinixys erosa* (375 mm). Human predation seems to explain the rarity of animals reaching such a great length.

Key-words : Testudinidae, *Kinixys erosa*, Zaïre, length.

Résumé

70 ans après SCHMIDT nous décrivons le nouveau record de taille pour *Kinixys erosa* (375 mm). La prédation humaine semble expliquer la rareté d'animaux atteignant une grande taille.

Mots-clefs : Testudinidae, *Kinixys erosa*, Zaïre, taille.

Kinixys erosa is an African forest tortoise widely distributed in West and Central Africa.

There are little informations about variation of its carapace length ; only SCHMIDT (1919) stated : "the average size of an adult is probably between 200 and 230 mm", but his sample does not exceed 21 specimens. The literature (Table 1) indicates a maximum carapace length for this species of 323 mm ; this is confirmed by SCHMIDT (1919), LOVERIDGE and WILLIAMS (1957), VILLIERS (1958) and WERMUTH and MERTENS (1961). This record is held by a supposedly male tortoise collected by SCHMIDT in November 1914 in the region of Banalia, North of Stanleyville, Belgian Congo (now Kisangani, Zaïre). SCHMIDT's specimen is now American Museum of Natural History (New York) number 10,023. Its width and height are 236 and 122 mm respectively. No larger specimen has been described since that time.

The herpetological collections of the Institut Royal des Sciences Naturelles de Belgique (I.R.S.N.B. - Brussels) contain two large specimens (n° 1780 and 1781) measuring 327 and 324 mm (width : 223 and 225 mm ; height : 130 and 133 mm respectively) however these two carapaces derived from animals which died in the Antwerp Zoo in 1932. The largest wild specimens (n° 5470, a and b) come from the road Boma-Matadi (Southwestern Zaïre, October 20 1948) and measure 276 and 260 mm (width : 170 and 174 mm ; height : 91 and 96 mm).

The largest specimen in the collections of the Musée

Royal de l'Afrique Centrale (M.R.A.C. - Tervuren) derives from Cameroon (n° 7318-R42, March 17 1973), its shell is 290 mm long (width : 190 mm ; height : 100 mm).

Within the framework of a zoogeographical study in the lowland rain forest of Zaïre, one of the authors (M.C.) collected 166 carapaces of *Kinixys erosa*. The natives are fond of its meat, and this tortoise is frequently seen on the local markets where our specimens were bought.

Except for the two largest, all specimens were collected between January 1981 and December 1982 around Kisangani (Northwestern Zaïre) (Fig. 1 shows the studied area). Most of this collection is now in the Musée Royal de l'Afrique Centrale (Tervuren, Belgium).

The length of the carapace in our sample ranged between 145 and 375 mm. The means were 208.6 mm for the males (N=87 S.D. = 27.4) and 195.6 mm for the females (N=79 S.D. = 17.4). Fig. 2 shows that 95% of our specimens had a length comprised between 160 and 250 mm.

We do not know at what length a *Kinixys erosa* reaches its sexual maturity ; we can only say that all our specimens have a fully ossified plastron and ridge. Specimens smaller than 130 mm had only a partially ossified shell and were omitted from our sample.

Three specimens were larger than 250 mm (Fig. 2). Work number 5394 was donated to M. COLYN by a local chief in June 1982, it came from a specimen killed in February 1975 in M'Boye (00° 05' S 23° 49' E). Its dimensions clearly exceed all those previously recorded: length 375 mm, width 254 mm and height 139 mm (Fig. 3). The second specimen came from Loase-Simba in the High-Lopori (00° 26' S, 23° 10' E). This specimen (number 5395) had been smoked and has lost its epidermal scutes. The length of the bony carapace is 283 mm (width : 220 mm ; height : 125 mm).

The third specimen (number 5802) came from Babusoko (00° 04' S, 25° 17' E), between Kisangani and Ubundu, in the Lualaba-Lomami region, also on the left bank of the Zaïre river, and was caught in February

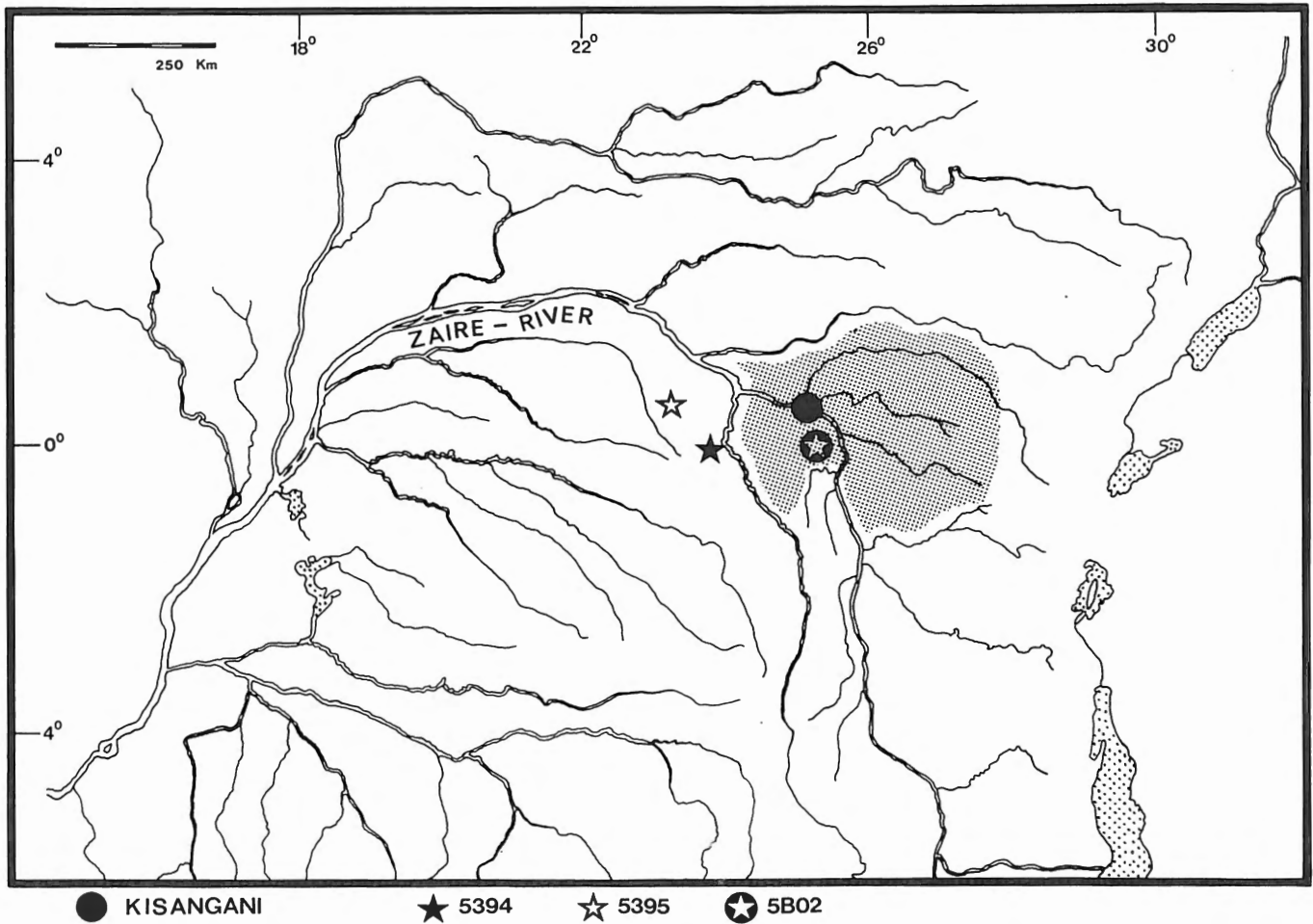


Fig. 1 : Map of the studied area (stippled) and localities of our three largest specimens.

1982. It measures 309 mm (width : 204 mm ; height : 118 mm) (Fig. 3).

The aim of this report is to note the existence of new length records for *Kinixys erosa* and to document the length variability in this species.

The available samples come from the two banks of the Zaïre river (97 specimens from the left bank and 69 from the right bank). However, the largest specimen collected on the right bank measures only 223 mm ; 13 out of the 97 specimens from the left bank (13.4%) were larger.

Age is very important in animals that may show continuous growth. We do not know this parameter for our specimens, making it difficult to decide whether the difference in the length observed between the two populations (left bank \bar{X} =206.8 mm, right bank \bar{X} =195.4 mm, $t=3.42$, $P=0.001$) is actually significant. In the area under study, the left bank is scantily populated and weakly exploited. The right bank is much more densely populated. Here, *Kinixys erosa* is overhunted, and native hunters say that they have never seen specimens greater than approximately 230 mm (in fact they did not believe it possible to find specimens reaching 300 mm and more).

Consequently, the smaller size of specimens of *Kinixys erosa* on the right bank of the Zaïre river may well reflect human predation and deforestation : both factors would reduce the chances of the tortoises to reach a substantial age and perhaps to attain a great length.

Table 1 : maximum length of *Kinixys erosa* shells found in the literature.

Length in mm.	References.
183	SIEBENROCK (1916)
210	BOETTGER (1887/1888)
230	BOULENGER (1889)
230	LOVERIDGE (1937)
240	LAURENT (1964)
270	SIEBENROCK (1907)
275 (13 inches)	PRITCHARD (1967)
280	VILLIERS (1958)
more than 300	VILLIERS (1962)
323	SCHMIDT (1919)

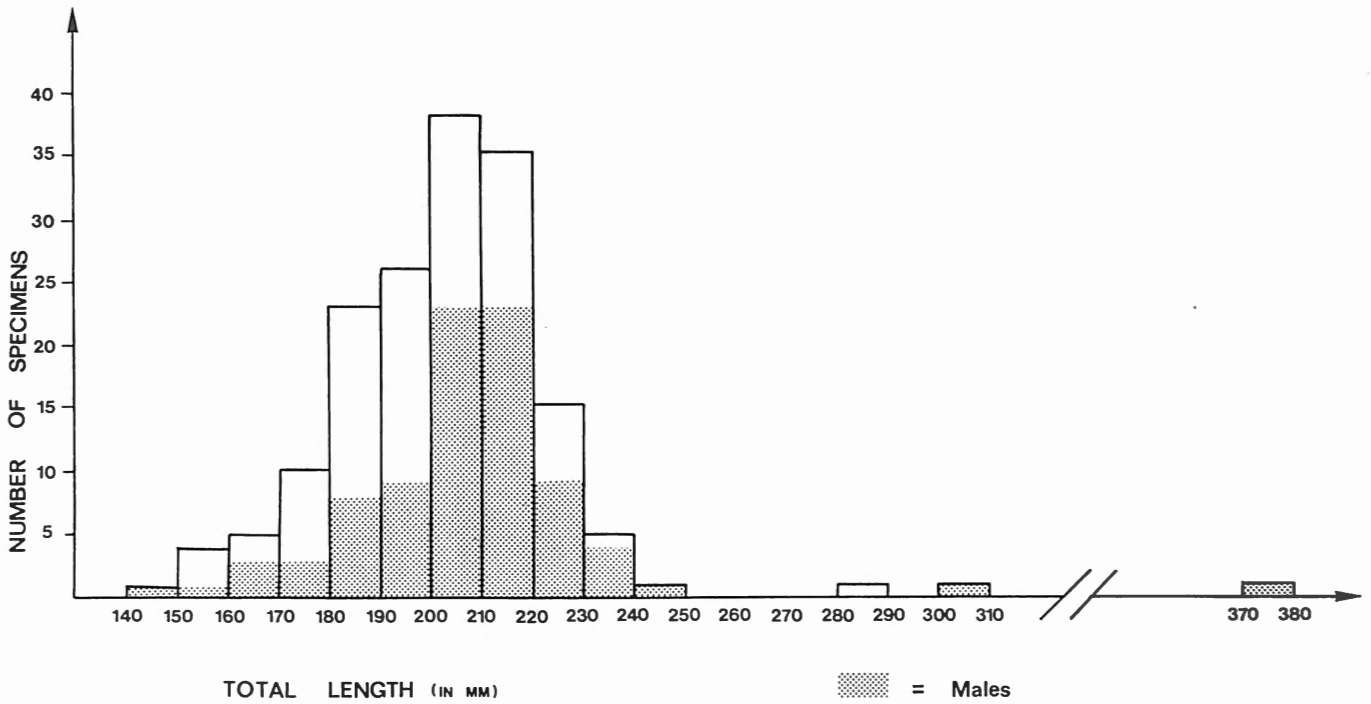


Fig. 2 : Histogram to show distribution of specimens by sex in each carapace length size class for a population of 166 *Kinixys erosa* collected around Kisangani (Zaire) (males = stippled ; females = blank).

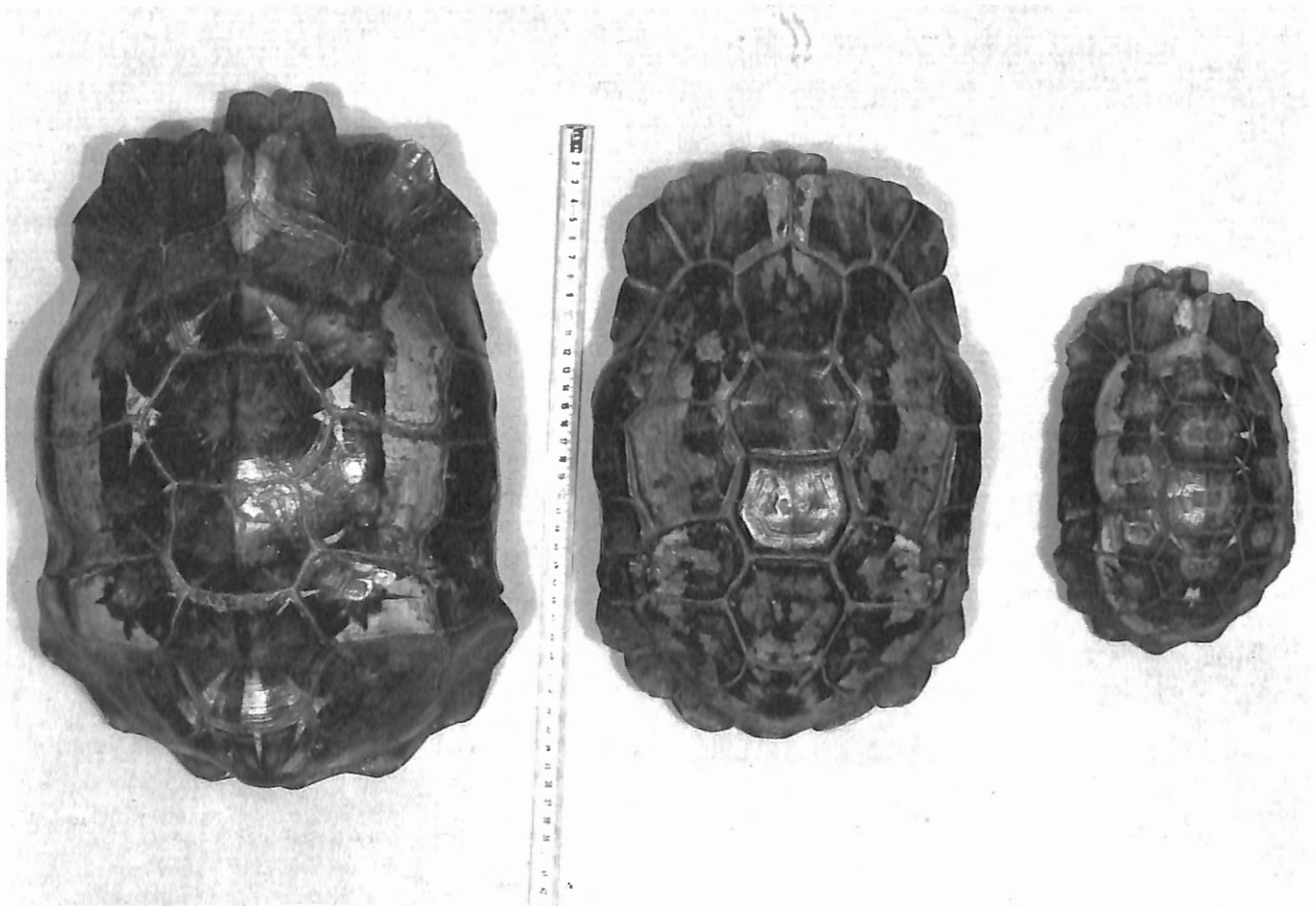


Fig. 3 : From left to right : *Kinixys erosa* n° 5394 (375 mm), n° 5802 (309 mm) and a medium sized specimen (217 mm).

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