

(2) In August, 1994, I was able to measure the partial skeleton of a rhino found dead in Lam Dong in 1978, and now displayed in a glass case in the Ministry of Forestry building, Hanoi.

(a) The skull showed the features of *Rhinoceros* as opposed to *Dicerorhinus*, for example: nuchal surface slants forward; outline of nuchal surface, in rear view, widens markedly inferiorly; dorsal outline deeply concave; subaural fusion of postglenoid and posttympanic. In addition it showed the following feature diagnostic of *R. sondaicus*: premaxillae free from maxillae

(b) The skull showed features which tend to characterize the Vietnamese subspecies *Rhinoceros sondaicus annamiticus* (Groves & Guérin (1980, *Géobios*, 13, 2:199-208):

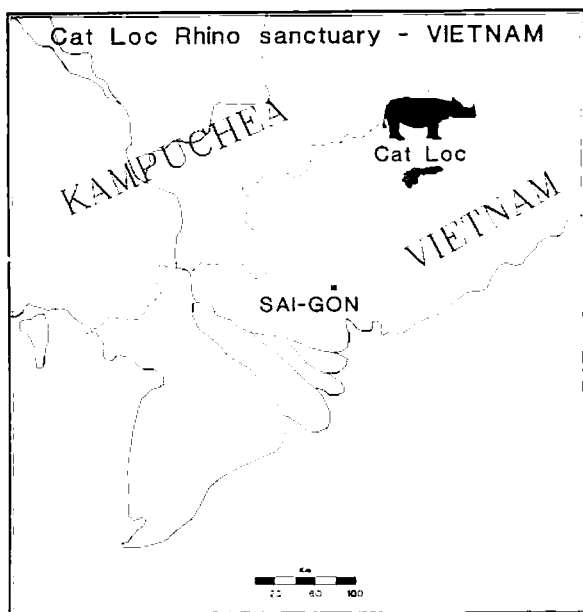
- Antorbita width 204, cf. subspecies means:

<i>annamiticus</i>	217.7 (n=3)
<i>inermis</i>	198.8 (n=5)
<i>sondaicus</i>	187.3 (n=15: Java)
	188.8 (n=5: Sumatra)

- Ratio width to height of occiput 175.6, cf.:

<i>annamiticus</i>	181.0 (n=4)
<i>inermis</i>	165.0 (n=4)
<i>sondaicus</i>	186.0 (n=16: Java)
	176.0 (n=5: Sumatra)
	171.0 (n=4: Malaya)

Unfortunately the maxillary alveolar ridge was missing, so the low facial height of *annamiticus* could not be checked.



## A Comment on Haryono et al.'s Report

Schenkel & Schenkel-Hulliger assigned age/sex categories to the Ujung Kulon rhinos using Indian Rhino standards. This was of course a "faut de mieux" strategy, and I have never been entirely convinced about it. The biggest Javan rhinos would be about equivalent in size to Indian females (about 1500 kg): the fully mature Indian male weighs >2000 kg, a figure equalled among rhinos only by *Ceratotherium simum simum*. Hoogerwerf always maintained that age measurements would be a little lower; footprints of 24-25 cm would belong, according to him, to animals of 2-3 years old (whereas the Indian female Nanda in Basel Zoo, used to set the standards by the Schenkels, already had a forefoot diameter of 26 cm at 2 years, 8 months). The Cat Loc census would, if this were correct, record two full adults, and probably 1-2 subadults, plus 4-5 young. The age ration is still odd, but not quite as odd as before.

Possible explanations: (1) Haryono et al. report that 10 were poached since 1981. I'm not sure whether one could suppose that adults predominated in this total; they do not give the dates when the poaching incidents took place but, if some had been only shortly before their census in 1983, this might account for the shortage of full-sized adults. (2) The well-documented phenomenon of an expanding population breeding at younger ages than one at carrying capacity?

The Schenkels assumed that, like the Indian rhino, the Javan rhino is sexually dimorphic so that the largest footprints would be those of males. This is definitely not correct. Hoogerwerf thought that females are the larger sex; Guérin agreed with him. I am not so certain about that, but my craniometric data show clearly that there is no male hypermorphosis such as occurs in the Indian rhino; to all intents and purposes the two sexes are the same size.

Nothing is known about whether the female of *R.s. annamiticus* is/was well-horned or not; but on the analogy of the other two subspecies, it might be supposed that decent horns in females are vanishingly rare. I would suppose that females got shot for the same reason as African poachers shoot dehorned rhinos: they want to eliminate an unproductive set of tracks.

*Submitted by Colin Groves*