

Correspondence

Comments on: C. Arivazhagan and R. Sukumar (2008) Constructing age structures of Asian elephant (Elephas maximus) populations: A comparison of two field methods of age estimation. Gajah 29: 11-16.

The above paper makes some interesting points: Method of ageing ungulates is taken on African experience as the degree of tooth eruption and from (Laws 1975), However, these refer to African elephant populations only in dry vegetation areas but not to the data of African elephant populations in wet areas, for the simple reason that large-scale culling was mostly in the dry savannah areas. This is the main source of information. The same degree of variation in Indian elephants can be anticipated as well, such as for example, between elephants in wet Periyar and dry Singhbhum forest. This should be kept in mind before any generalisation is made and African experience indiscriminately applied to the Asian conditions. Of course, we have no scope for large-scale culling for collection of data, as Laws *et al.* aided by parks in Africa had. Besides, one has to keep in mind the different structure (serration) of the molars in African and Asian elephants.

Non-destructive methods have been recognised in the paper based, again, on African “experience and methods and it is claimed that such field techniques are most applicable to the endangered Asian elephant” (Sukumar 1985, 1989). The saddest omission in the literature cited is Milroy (1922, 2002), who discusses the morphological signs of identifying Asian elephants. Skull size, ear size, extent of upper fold of the ears, depigmentation of ears, temporal and buccal depression, and tusk thickness (for males) here again depend on limited field data; for example, few of the present elephant researchers have cared to observe, analyse and measure thousands of domesticated elephants one saw in the annual Sonepur fair which used to be a veritable school for students of Asian elephants. Skulls size of maknas at least look conspicuously larger than that of tuskers verifiable however only on death and tusk thickness alone may not be a sufficient indicator offered by the data gathered from

South India where maknas are few compared to tuskers. Some are thick-tusked from the start gaining girth with age, some are thick from the beginning and becoming massive with age – they are conceptualized under different names by elephant men in N. E. India.

Again the upper fold of the ears is not a safe indicator as the upper part of the ear sometimes starts folding even in animals as young as 8 to 9 years. See, for example, the photo of two cows on the covers of the last no.s of Gajah. What is more diagnostic is the folding *and flattening* of the upper fold of the ear. Further it is the hardening of the ear cartilage, as Milroy (1992) points out, that is more significant, which can, not only be seen but also heard even in dense cover. Time and again I have detected the presence of a large male in the presence of a herd from the metallic sound of the ears flapping.

Precise measurement of height by using photogrammetry, (science of measuring size at a distance by photography) was used by Iain Douglas- Hamilton (1975; 62-63). This was replicated by Sukumar (1989; 224-225). Douglas-Hamilton’s and Sukumar’s works were pioneering efforts for which they had to improvise their own instruments. However, a common surveyor’s instrument “Theodolite” (10-12 thousand INR) or a improved digitized version “Total Station” (10-12 Lakhs INR) may be more conveniently used. Then the results obtained by personalized instruments can be checked and verified by a third party. Ear size nor de-pigmentation are conspicuous indicators for wild Asian elephants. Wild elephants have the colour of the state of their last wallow, unless the data used are from the private and govt. stables.

The four major height classes as laid down are perfectly acceptable with some modifications. “Adult” here only indicates height classifications.

Calf	3' - 4'	
Juvenile	4' - 6'	
Subadult	6' - 7'	(5 ½ - 7 ft – female 6-8 ft – male; in Arivazhagan & Sukumar)
Adult	8' +	(>7 ft female >8 ft male; in Arivazhagan & Sukumar)

Maturity differs with sex. This height group is now accepted in most govt. elephant censuses in India. At present capture by mela shikar is only permitted between 5' and 7' height classes, and this appears to be a fairly accurate classification of age-structure by age / height.

In northeast Indian elephant lore accepted by elephant men, tusks are classified into 12 types, each conceptualized and given a different name which is descriptive, so also back shapes into 3 or 4 categories, tail according to length into 4 categories and tail brushes including cut tails (Lahiri-Choudhury 1996). This was photocopied and used for elephant census in North Bengal in the early 2000 with photographs, line drawings, and legends and descriptions translated into regional languages. Classification of height categories into six [is unnecessary], unless one intends to examine the lives of divergence in a family under close study in a given period of time, as in the case of Boadicea's Family Tree (Douglas- Hamilton 1975; p. 275). While full of admiration for the work of Douglas-Hamilton and Sukumar, without a clear management objective or focus, research may soon become *recherche* and become an attempt to throw "pseudo-light on non- problems" (Kingsley Amis, *Lucky Jim*). It is time to remember that survival of a species depends on its proper management. "Species survival commission's" concern should not only be iconic species in isolation.

References

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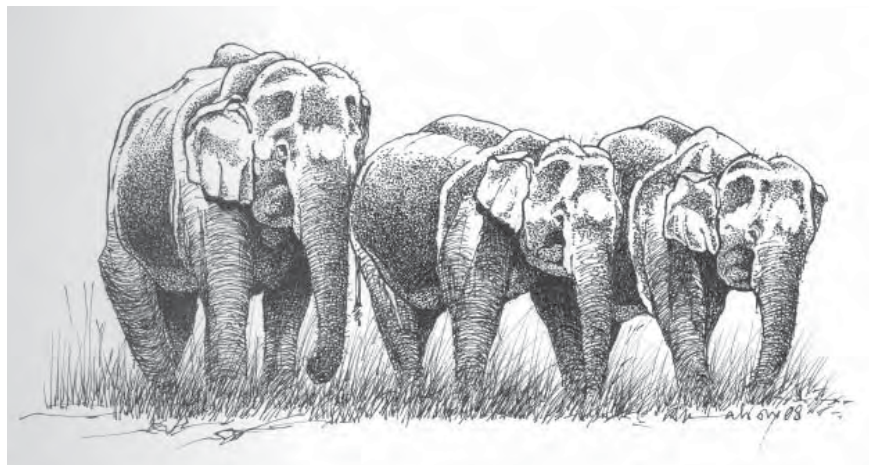
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Drawing by Arnab Roy