

Short communications

NOTES ON A LARGE ARCTIC FOX SKULL

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A female arctic fox *Alopex lagopus* was found dead on 23 June 1984 in Jämtland, Sweden. Upon measuring her skull, it turned out to be notably larger than reported for arctic foxes in the literature. The body length was at the maximum part of the range. In 1982, a very large male arctic fox was observed in the same area.

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A dead female arctic fox *Alopex lagopus* was found on 23 June 1984 on the northern shore of lake Nedalsjön in Sylane (Jämtland county, Sweden). The female was lying with the anterior part of the body in a small pool about five meters from the lake. She had probably been dead some weeks, but due to cold weather decay had been slow. The fox had no external wounds and cause of death could not be firmly established. It was assumed, however, that she had drowned in Nedalsjön and washed ashore later.

The female was in uniform brown summer pelage, with a few longer white hairs on the body and many black hairs on the tail. Her teats were small and upon a simple autopsy no embryos were found. She was therefore supposed to be non-breeding, and was estimated to be more than two years old judging from her worn lower canines.

Vibe (1967) measured arctic fox skulls from several parts of the species' range. For Scandinavian foxes he found a mean condylobasal length (C1) of 125.5 mm and a mean zygomatic breadth (Zb) of 69.6 mm ($n = 29$). Siivonen (1976) gives a range in C1 of 107–127 mm and in Zb of 58–71 mm. C1 and Zb of Canadian arctic foxes are also encompassed by this range (Bisaillon & DeRoth 1980), and Clutton-Brock et al. (1976) found a C1 of 124 mm.

The skull of the dead female found in Sylane was cleaned and measured in the same way. In all characters measured it was notably larger than the skulls

Table 1. Cranial measurements in mm of a female arctic fox, found dead in Jämtland, Sweden.

Maximum skull length	145.4
Condylobasal length	139.1
Zygomatic breadth	78.9
Total tooth measure (right)	
$P_1 + P_2 + P_3 + P_4 + M_1 + M_2$	62.7
Maximum mandible length	101.6
Crista sagittalis	3.8

examined by the authors referred to above (Tab. 1). In fact, the female's skull measurements were closer to a small red fox *Vulpes vulpes* (Burrows 1968, Siivonen 1976) than to arctic foxes. Furthermore, both Vibe (1967) and Bisaillon & DeRoth (1980) found that most female arctic foxes were smaller than males. The dead female found in Sylane had a body length of about 65 cm, while the length of the tail (including the longest hairs) was about 44 cm. The tail was longer than previously reported for arctic foxes, while the body was at the maximum part of the range (Pedersen 1959, Chesemore 1970, Siivonen 1976). The body may not have been accurately measured as it was difficult to position the carcass properly.

The female reported on here was probably not the only large arctic fox in the area. In a study of arctic fox behaviour in the same area in 1982 (Frafjord 1984), a very large male arctic fox was observed on the Norwegian side of the border. This male was observed chasing a female red fox and it could easily be seen that the arctic fox was the larger one.

Vibe (1967) found that Scandinavian arctic foxes were among the largest with respect to C1 and Zb, while Pedersen (1959) indicated that arctic foxes may have a skull length close to the one measured in this study. It seems that more investigations are necessary to determine the range and geographic variation in the size of arctic foxes, and how these are influenced by the food supply.

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