

VELVET-ANTLERED FEMALE MOOSE (*Alces alces*)

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ABSTRACT: Three records of velvet-antlered female moose of three different subspecies are described; all three appeared to be fertile.

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According to Goss (1983) antlered females occur in four genera of Cervidae; *Rangifer*, *Capreolus*, *Odocoileus*, and rarely in *Cervus*. By definition, antlers are renewed annually and are bare (generally dead) protuberances of pedicles. Thus, the only female cervids that normally produce antlers are *Rangifer*. Antlered females from the other genera noted are usually hermaphrodites or have adrenal tumors (Donaldson and Doult, 1965; Mierau, 1972). On the other hand, normal females from these genera occasionally have velveted antlers which can become perennial appendages and as such are not true antlers. Goss (1983) also states that antlers have not as yet been reported in females of *Alces*. That is not correct; Seton (1953) reports that 2 female moose with velvet-antlers were shot in 1900. One was taken in the Yukon and the other in the state of Maine.

In recent years, 3 velvet-antlered female moose of 3 different subspecies have been taken by hunters. On 18 October 1982, near Lesser Slave Lake in northern Alberta, a hunter killed a 3-year-old female moose (*A. a. andersoni*) carrying a single velvet-antler. The cow was with a calf and a bull at the time she was shot. The hunter reported that the moose appeared to have normal reproductive organs. In addition, the presence of the calf at the kill site was suggestive that the calf belonged to the velvet-antlered cow.

That fall I examined the complete head when it was donated to the Alberta Fish and Wildlife Division. The head had the characteristic brown snout of a female moose as described by Mitchell (1970). The fresh or live velvet-antler extended from a poorly

developed pedicle that is typical of velvet-antlered *Odocoileus* (Wishart, 1985). The velvet-antler had three points and was not palmated, in contrast to the large nodular velvet-antlers (perukes) of castrate moose (Wishart, 1980). The main beam of the velvet-antler measured 34 cm in length and had a 13 cm base. There was no corona and the juncture with the pedicle was not clearly distinguishable. The skull is stored in the Fish and Wildlife museum in Edmonton.

On 7 September 1983, a female moose (*A. a. alces*) with velvet palmated antlers was killed at Tällasen, Drängsmark, Sweden (Karlsson, 1983). The right and left velvet-antlers each had five points and projected from very poorly developed burrs. This moose also had normal female reproductive organs.

An adult female moose (*A. a. gigas*) with a poorly developed velvet-antler spike was shot by a hunter in early September, 1983, on the Kenai Peninsula, Alaska (T. Spraker and C. Schwartz, *in litt.*). They report; "There is no obvious separation or apparent base to the antler. It appears to be a bony growth of the skull. It is not smooth and has the appearance of a very porous bone. The antler was velvet covered at the time the moose was shot. The antler is a single spike, 9.0 cm in length with a 7.5 cm base." They also report that "This cow was accompanied by a calf when killed." The unusual presence of velvet-antlers in females generally does not interfere with their reproductive potential (Goss, 1983; Wishart, 1985).

The growth of velvet-antlers in females may be induced by short-term increased levels of circulating androgens, possibly from

the adrenals, or by injury to the inductive periosteum of the frontal bone (Bubenik, 1983). In *Odocoileus* there is evidence that velvet-antlered traits in females may be heritable (Mierau, 1972).

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