

## Ages of Bighorn Sheep Trophies

IN THE LAST ISSUE I DISCUSSED THE HORNS OF PRONGHORNS AND CALLED ATTENTION TO THE FACT THAT THEIR HORN SHEATHS WERE SHED EACH YEAR AFTER THE RUT, BUT NEW HORNS GROW RAPIDLY AND MAY DEVELOP TO MATURITY AT A YOUNG AGE. WILD SHEEP ON THE OTHER HAND GROW THEIR IMPRESSIVE HORNS ON A MORE OR LESS CONTINUING BASIS THROUGHOUT THEIR LIVES AND THEY ARE PERMANENT. THUS THE HORNS ON AN OLD SHEEP REPRESENT THE ENTIRE LIFE OF THAT INDIVIDUAL. HORNS OF WILD SHEEP LIVING IN TEMPERATE OR POLAR CLIMATES TYPICALLY SLOW DOWN OR STOP THEIR GROWTH DURING THE FALL AND WINTER AND IN THE SPRING RESUME GROWTH AT AN ACCELERATED RATE LEAVING A RING OR ANNULUS AROUND THE HORN.

It is well known that one can age the sheep if we can count and interpret the annuli accurately. The horn of a sheep several years old is like a series of empty ice cream cones stacked on top of each other, the outer ones being the oldest and the basal ones the youngest. In a ram the basal cones are progressively bigger and heavier than ones toward the tips. We illustrate by showing a 4 year old ram horn sawed through the center with a band saw (Figure A). The annuli are as distinct in the internal structure as well as on the outside of the horn. Female sheep display the same pattern of annual rings, but in a much reduced way, and their horns generally cease growing in old age.

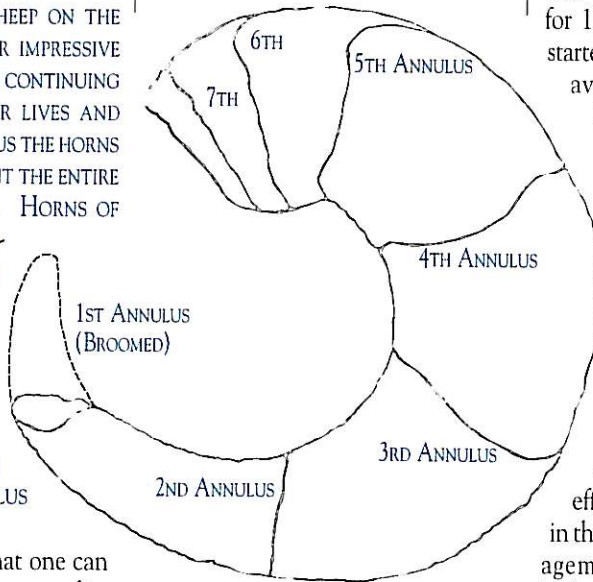
The horns of mature bighorns almost invariably show broken ends of the horns, called brooming and it has been known for many years that this results primarily from fighting with other rams. Canadian wildlife biologists, D. W. Shackleton and D.A. Hutton, studied this brooming in a careful and detailed way. They observed fighting rams at close range in Banff National Park, Alberta, and examined horns on skulls and on liv-

ing rams. The brooming results from the tip of the horn striking the base of the horn of the opponent and the twisting motion of the heads after this contact. Although rams fight

showed a ram with asymmetrical horns where the wide spread side is unbroomed and the horn with natural spread is broomed as usual.

Fifty years ago the record book ram was typically one who had lived for 11 to 12 or more years and had started out life as a healthy, larger than average individual and probably lived in a remote inaccessible mountain range in Alberta. Today, the record book ram is usually much younger, 6 to 9 years old, and may be as young as 5 years. He probably will have come from a herd which has been transplanted by one of the several game departments in the western states. The remarkable success of these transplanting efforts is one of the brightest lights in the history of modern wildlife management. There are many more bighorns roaming the ranges of the west today than were doing so 20 to 30 years ago. Secondly, this has expanded tremendously the opportunity for sheep hunting by big game hunters.

The large number of rams being recently entered in the Club's record program has allowed comparison of growth rates of rams taken in ranges continuously occupied with those from areas when the sheep have been reintroduced to ancestral ranges. I intend to look at the striking, detailed finding from these entries in the next issue of *Fair Chase*.



throughout their lives, the brooming begins when a 3/4 curl has developed at about 4 or 5 years of age. A split occurs which eventually results in breaking the tip off in an outward direction. This continued contact over several years results in a frayed tip and the loss of several inches of horn tip often eroding the first annulus. This may eventually result in a smooth tip in older rams which may resist further loss of horn material. The result is that when viewed from the side even a large mature bighorn ram will rarely show a horn configuration of a full curl (tip displaying a complete 360° curl) but would do so if the tips were not broomed. The thin-horned sheep, Dall's and Stone's, generally have wider spreading horns and in most cases the horn tips do not strike the opponents horns and thus brooming is reduced or totally eliminated. In support of this conclusion Shackleton and Hutton

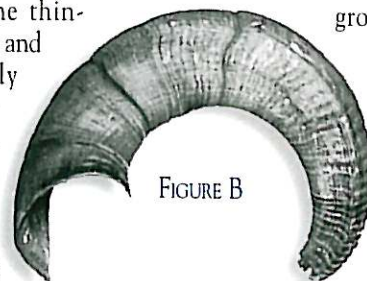


FIGURE B



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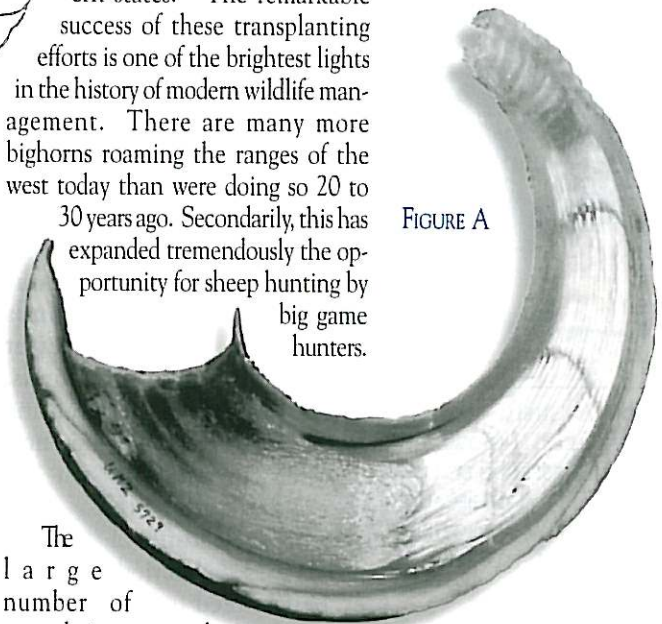


FIGURE A

FIGURE A  
THIS FOUR-YEAR OLD RAM HORN WAS SAWED IN HALF TO SHOW THE ANNULI IN THE INTERNAL STRUCTURE.

FIGURE B  
THE EXTERIOR VIEW OF THE SAME HORN. THE ANNULI ARE VISIBLE FROM THIS VIEW AS WELL.