Weather and food supply in the weeks leading up to velvet stripping can make a real difference in a buck’s rack. Photo by John R. Ford

the finish. Let's discuss the last of these.

One of the misconceptions about antlers is that they're preformed in cartilage, which then is replaced by bone. The reality is that the antler is formed as a group of growth fronts, aligned at the growing tips and radial surfaces. If we remove a velvet antler and cut it first longitudinally and then in cross-section, we can see how it works.

Longitudinally, there's a small growing tip on each tine or beam. It's represented by cartilage (chondroblasts), followed immediately behind by specialized cells that create bone-like tissue (osteoblasts). Cartilage-creating cells form the antler tip but then quickly are destroyed by special cells (chondroclasts). This creates opportunity for the bone-formation cells.

A cross-section of the body of the antler shows the same thing happening on the outer edges of the beam. So there are two fronts of growth: the antler tips and the beam itself. If we measure the temperature of the growing antler, it's much warmer at the tips, where there is active growth. Cells produce heat as they grow, and you literally can feel the heat generated in growth areas.

The same thing is happening with such critical minerals as zinc and selenium. We've taken plugs from velvet antlers over their entire length, and the concentration of zinc and selenium is highest at the growth fronts. These nutrients and others, such as copper, magnesium and manganese, are the unsung heroes of antler growth. Most of the antler ultimately will be calcium and phosphorus, but the amount of demand for a particular nutrient is not a true measure of its importance.

The physical condition of a buck when he casts his antlers is a big determinant of initial antler growth. If he holds his rack until late March, he's obtained abundant nutrients during late summer, plus those carried over through the rut and winter. So he's set for a better start.

In years with even rainfall over the warm season, the average diameter of

FINISHING STRONG

Each spring, walking among the freshly emerged trillium and mayapple, I'll see the hint of an antler tip sticking from the leaf litter. The moment I touch the antler, it's as if I've opened a link to the buck that so cavalierly dropped it a month earlier. There you are, I'll say to myself. So this is where you ended up!

The antler then is deposited in a stack with many others found in years past. It's a monument, I guess, to the old guys and wannabees that have grown up and died at our Texas research facility. And it stands like a white pillar greeting all who come to visit.

A whitetail antler is a simple, elongated cone, broad at the base and tapering to its tip. But only under perfect growing conditions can it realize its true potential.

During the growing season, right after a significant rainfall event there's a corresponding spurt of plant growth. And in turn, there's a spurt in antler growth. The demand an antler has for the essential nutrients is satisfied by new plant growth.

Antler growth occurs in at least three stages: initial growth; interval growth; and

ABOUT THE AUTHOR

Dr. Kroll is founder and director of the Institute for White-tailed Deer Management & Research in Nacogdoches, Texas.
Out here, the world is mine. Breathe it in, and taste heavy earth on my tongue. I embrace hours of solitude.

And then, a snapping twig, A rustling in the leaves. I know in my bones it's time. I will persevere. No matter what happens, I will emerge victorious.

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