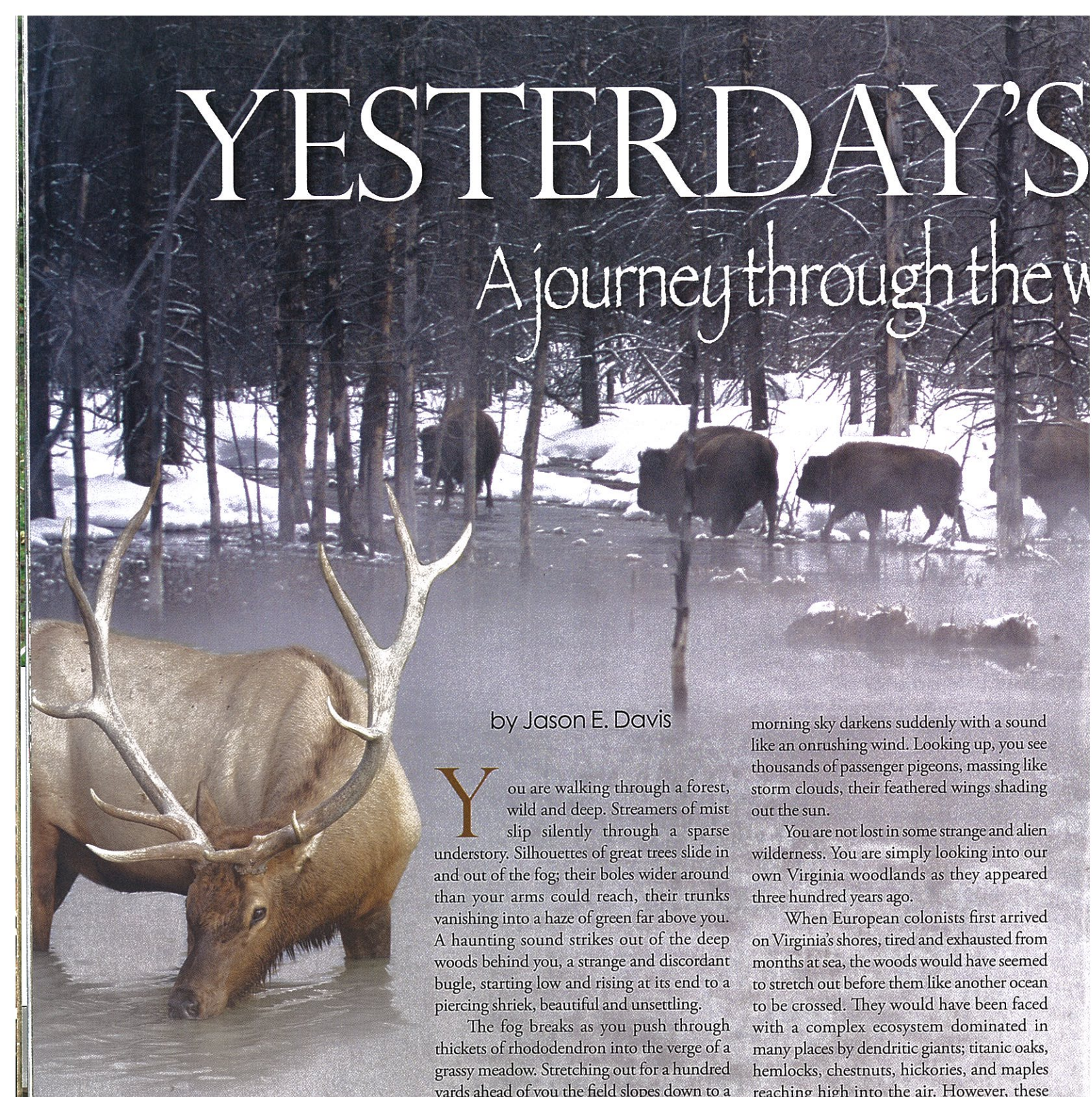
YESTERDAY'S

A journey through the w



by Jason E. Davis

You are walking through a forest, wild and deep. Streamers of mist slip silently through a sparse understory. Silhouettes of great trees slide in and out of the fog; their boles wider around than your arms could reach, their trunks vanishing into a haze of green far above you. A haunting sound strikes out of the deep woods behind you, a strange and discordant bugle, starting low and rising at its end to a piercing shriek, beautiful and unsettling.

The fog breaks as you push through thickets of rhododendron into the verge of a grassy meadow. Stretching out for a hundred yards ahead of you the field slopes down to a reed-fringed pond, a beaver lodge peeking from the still water at its far end. A herd of shaggy brown bison have stopped to drink, their massive horned heads and muscular shoulders lowered as they lap at the water. The slender shadows of wolves dance between trees at the meadow's far edge. As you stand in silence watching this feral scene, the bright morning sky darkens suddenly with a sound like an onrushing wind. Looking up, you see thousands of passenger pigeons, massing like storm clouds, their feathered wings shading out the sun.

You are not lost in some strange and alien wilderness. You are simply looking into our own Virginia woodlands as they appeared three hundred years ago.

When European colonists first arrived on Virginia's shores, tired and exhausted from months at sea, the woods would have seemed to stretch out before them like another ocean to be crossed. They would have been faced with a complex ecosystem dominated in many places by dendritic giants; titanic oaks, hemlocks, chestnuts, hickories, and maples reaching high into the air. However, these woodlands were not entirely ancient, nor were they entirely unbroken. Though primeval forests supported a great number of old-growth trees, they were also a dynamic and ever-changing patchwork of microhabitats, supporting plants of many ages and types. Toppling trees brought light to miniature meadows; rivers wandered in their beds,

Background photos: Elk ©John Ford; Bison ©Jack Mills

LANDSCAPE

oodlands of Virginia's past.

spawning floodplains, swamps, and marshes; lightning-spawned fires burned through forests, rendering them into ash-fertilized grasslands. The primeval forests were vast and dense, but far from still.

Though modern forests are a far cry from their ancestors, the growth patterns of those ancient woods still reveal echoes today. The woods we hike through in the 21st century are the direct descendants of those early forests, though most of our woodlands are immature, fragmented, and less diverse in native species than they once were. By laying groundwork of species, prehistoric forests have influenced the layout of our modern woodlands. Why is there a clearing in the woods behind your house? Perhaps an ancient fire burned there, permanently altering the soil chemistry. Why is there a stand of white oak in that river bend? Two hundred years ago a squirrel may have buried acorns in the soft soil there. The repercussions of such small events can carry on for centuries.

European colonists and settlers logged out much of the Eastern seaboard in their quest for building supplies and fuel, in many places entirely denuding the landscape by the turn of the last century. Almost all of the trees you've seen in your lifetime are relative teenagers, still with hundreds of years of growth in their future. The agricultural practices of the early settlers still influence our woods in many ways. For instance, by logging out slow-growing hardwoods, timber harvesters may have helped to foster the spread of fast-growing pine trees, leading to a pine-rich and more homogenous modern forest.

Of course, more than trees lived in the woods of yesteryear. Even a casual observer would have seen the trails of elk cutting through fields and tracing fine lines over the hills and mountains. Small herds of woodland bison would have grazed in meadow openings and at the forest's edge. Both of these species were hunted to extinction in this region, disappearing entirely from Virginia by the late 1800s.

It wasn't just these seemingly exotic and impressive species that were hunted into obscurity. Even the now-familiar white-tailed deer and wild turkeys were once all but driven extinct by over-harvesting. By the 1930s, the

nationwide population of white-tailed deer was estimated to be less than 300,000, while the population of wild turkey hovered around a mere 30,000. Whitetails and turkey were carefully managed and in some cases even reintroduced during the latter 20th century, allowing them to recolonize their old stomping grounds. Even today such reintroductions continue, as witnessed by the Department's successful establishment of elk into Buchanan County in just the last few years.

The woods of our past would have been full of many species that unfortunately cannot be so readily returned. Gray-blue passenger pigeons and golden-headed, emerald-bodied Carolina parakeets would have chirped and strutted in the trees. Herds of deer, bison, and elk were hunted by predators like the Eastern cougar and the gray wolf. These species vanished entirely from Virginia's woodlands, in part due to direct hunting and in part because the habitats and food sources on which they depended were depleted and destroyed.

A walk through pre-colonial Virginia might have surprised you not only in the species that you saw, but also in the species that you didn't see. Many of our most familiar species are actually aliens to our shores. Such introductions, often accidental, can have

Background, a dead American chestnut killed by blight, ©Bill Lea. Inset, the gray wolf was once an active predator on the Virginia landscape.

long-lasting impacts on the nature of a forest and the entire landscape (see William Funk's feature in the Jan/Feb issue). House sparrows and starlings, now among the most common birds in our state, were only introduced here in North America in the late 1800s. Familiar plants like kudzu, tree of heaven, princess trees, and even apple trees were all absent before humans brought them, intentionally or not, from Asia, Africa, and Europe.

Humans have a long history of changing our environment, and the pre-colonial woodlands of Virginia were a far cry from being truly untouched by human hands. Before the arrival of European settlers, Native Americans had already spent thousands of years modifying their forest homes through hunting, farming, and fire. Native Americans used fire to clear land for agriculture and houses, and to clear thickets and encourage the growth of grasses to support populations of bison and elk. Such burning may have also had unintentional effects on our forests today, discouraging the growth of fire-sensitive species such as American beech, and increasing the amount of verge and forest borderland.

Like these earlier inhabitants of Virginia, humans today continue to alter our natural world both intentionally and unintentionally. Deforestation, pollution, and a warming climate are certainly global issues, but are by some measures no more dramatic than the accidental importation of invasive species and parasites. Chestnut blight was accidentally brought over from Japan in the early 1900s, and had all but entirely removed the stately tree from our woodlands by 1940. Similarly, the hemlock woolly adelgid, a parasite native to Asia, was first reported near Richmond in 1951. Since then, it has been found throughout the eastern United States, attacking and killing eastern and Carolina hemlocks across more than 50 percent of their range.

The seemingly omnipresent and vaguely annoying brown marmorated stink bugs that we find crawling lazily on our walls are also aliens here. Though they are now beyond plentiful, they were first reported in the United States only in 1998, likely a stowaway on packing crates from Asia. Their voracious feeding habits lead them to prey on many of the very fruits and vegetables that we imported over the last few centuries, as well as native species such as pecans and elderberries.

Destruction brings change, and no living environment ever stays the same for long. Life is always in motion, and the beautiful, complex, amazingly intricate mixture of species that make up our wilderness is always shifting and changing. By altering the landscape with roads and houses, with farming, hunting and industry, we have opened new pathways for transformation and adaptation.

Today, populations of white-tailed deer are booming as they feast on our lawns, gardens, and roadside edges. The deer in turn provide a walking feast for coyotes, helping them to spread into the Southeast and assume the mantle of dominant predator, in place of the long-departed wolf. Species like robins and dandelions thrive wherever we mow our lawns. New studies have shown that spiders living in urban areas often grow larger than their rural kin, possibly due to a diet rich with the many insects that city life supports. Similarly, recent research suggests that cliff swallows nesting near busy highways have rapidly evolved shorter, more maneuverable wings to help them dodge traffic. The natural world is never still.

Humans have an unprecedented power to change our environment, to remake and reshape it, whether at will or by accident. Our actions and choices today will set the paths that future forests will follow. The shape of the forest to come will echo the decisions we make, as much as today's forest reflects the ghosts of wilderness long past.

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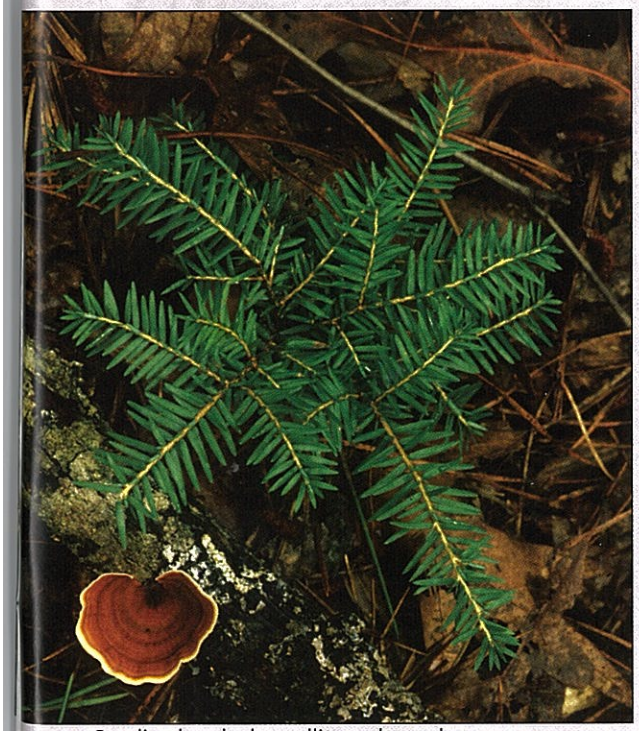

Carolina hemlock seedlings, shown here.

The woolly adelgid, a parasite native to Asia, has attacked our hemlocks and left a path of destruction over 50 percent of the tree's range.