Deepest in the heart of Wood Buffalo National Park in Alberta, Canada, stands one of the wonders of the world: a dam that at 2,800 feet long was originally discovered by a researcher looking at satellite images. Compared to the world’s largest man-made dam on China’s Yangtze River, it might not seem like much, but the Alberta dam was built by engineers weighing in at about 60 pounds apiece who chewed the materials to size with their teeth.

The American beaver, *Castor canadensis*, is the largest rodent in North America and along with its European cousin, *Castor fiber*, holds second place for the world’s largest rodent, exceeded only by the capybara, *Hydrochaeris hydrochaeris*, of South America. Adult American beavers range from 23 to 40 inches from nose to base of their tails; broad, flat tails add another foot to their overall length. Anyone who has ever heard the warning slap of a beaver’s tail against the water knows the noise-making value of this appendage. The beaver’s tail also acts as a rudder while swimming and as a prop to maintain balance while perched atop a dam or on land. Beavers possess large front teeth made spectacular by a coating of red enamel. These teeth grow continuously throughout a beaver’s life, and only the beaver’s tree hewing job keeps the teeth from growing too long.

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Both sexes possess glands called castors at the base of their tails. Castoreum is secreted from these glands and used to mark territory. In the nineteenth century, castoreum was in high market demand for use in medicine and perfume. At the same time, tall beaver hats were in fashion for men. The demand for these two commodities led to beavers being hunted and trapped almost to extinction by the middle of that century. As the beaver hat fashion waned and other more easily obtained substances were substituted for castoreum, beaver populations gradually returned to stable levels.

Beavers are social animals that live in lodges grouped together into communities called colonies. Each lodge is generally home to a monogamous couple, their newest kits, and an assortment of yearlings from the previous litter. Beavers mate during the winter and produce two to four kits after a gestation period of about 107 days. A newborn kit weighs 10 to 20 ounces, can swim a day after birth, and is weaned at 2 weeks of age. Kits live in the home lodge until the end of their second year when they go out into the world to build their own lodges. At the age of 3, individuals locate a monogamous mate and start a family. The beaver’s sociability doesn’t extend beyond its community, however. Beavers mix castoreum with mud to form mounds to mark their ponds and food sources and will fight unrelated beavers who venture into their marked territory. Suitable ground for new communities is difficult to find, and some beavers will travel a dozen miles in search of a place to build a new dam. Until the new dam and lodge are built, the newly independent beaver is extremely vulnerable to predator attack.

Water is a beaver’s natural environment, and everything about a beaver’s body is geared toward life spent largely in the water. Its beautiful fur consists of short fine hairs that provide warmth and longer hairs that provide waterproofing. Beavers groom themselves and their companions daily to protect the waterproof qualities of their pelt, using castoreum in the process. Rudder-like tails and webbed hind feet enable beavers to swim 5 miles per hour; superior lungs allow them to remain submerged up to 15 minutes at a time. Transparent eyelids permit beavers to see underwater, and they have the ability to close their ears and nostrils while swimming. In addition, beavers possess an inner lip that prevents water from flowing into the mouth and throat when a swimming beaver carries sticks and other building materials in its teeth. Well-developed front paws enable beavers to handle objects with remarkable dexterity.

Beavers are nocturnal herbivores that subsist mostly on the bark and cambium — the soft tissue beneath the bark — of willow, birch, aspen, poplar, cottonwood, and other trees. They also consume buds, roots, and water plants. Beavers often fell young trees for immediately available food and to encourage regrowth suckers that provide food within easy reach. In areas where winter is severe, beavers stockpile sticks beneath the water to provide food during periods when surface ice prevents them from feeding on trees along the banks.

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Strange Than Fiction

BY: PATTI WOOD FINKLE, DIRECTOR OF MUSEUMS

Werner Wildlife Museum exhibits range from the awe-inspiring 14-foot-tall polar bear to the delicate Rufous hummingbird which is about the length of a child’s index finger. Huge or tiny, they all eventually elicit the same questions from museum visitors: “Where did they come from?” Many of the exhibits were hunting trophies taken because of their size, spectacular antlers, or exotic origins, but just as many came to the museum via alternate routes.

Dan, the black-footed ferret, came to the museum from the National Black-footed Ferret Conservation Center. Following a long, healthy life in a breeding program, Dan died of natural causes. The center donated Dan to the Werner to help educate the public about these remarkable animals that came back from apparent extinction in the 1980s. Local taxidermist John Stevenson is responsible for the beautiful mount that can be seen on the main floor of the museum.

Several decades ago, a local ranger found a bobcat kitten whose mother had died. He took the kitten to Laurie, a rancher’s daughter who bottle fed the little creature until it could eat on its own. The gently nurtured kitten formed fast bonds with the family and contentedly spent her time in the back yard with her good pal, the family dog. According to Laurie’s son, Andrew, Gypsy could have easily left at any time, a fence being no deterrent to a bobcat. Instead, she chose to live on the ranch for 17 years, being no deterrent to a bobcat. Instead, she chose to live on the ranch for 17 years, finally dying of old age. Laurie donated Gypsy to the museum where generations of children have been delighted by her story.

In 1974, a male mountain lion wandered into Casper and holed up under the I-25 bridge near the Ramada Inn. A large crowd gathered to gawk at him and the Casper police, fearing for everyone’s safety, took matters into their own hands and put the lion down. Local taxidermist Lewis Ray took the animal and created the magnificent exhibit that now stands above the office window in the museum.

Two bald eagles grace the northwest corner of the museum’s Wyoming room. The adult bald eagle is a composite specimen, or Franken-eagle, as we like to call him. The body belonged to an eagle that was electrocuted when it flew into a powerline. A rehab facility donated the head of an eagle that died of injuries. An unknown taxidermist pieced the two eagles into a single mount that eventually made its way to the Werner. An unfortunate run-in with a car put an end to the immature bald eagle in the same display. One of the several golden eagles on display drowned in a well after it shattered a foot. All eagles in the Werner belong to the United States Fish and Wildlife Service; the Werner maintains a license to keep these birds on display.

Snowflake, the albino mule deer, lived near Robertson Road just to the west of Casper. Sighted as early as 1999, she died of natural causes on Thanksgiving Day, 2008, and was taken to John Stevenson’s taxidermy shop to be preserved. John says Snowflake was one of the most challenging projects he ever undertook, but his efforts have been greatly appreciated by the many people who come to visit and share their memories of Casper’s most famous deer. Thank you to Brandi Atnip and her family for funding Snowflake’s preservation!

Sage and Cedar are the star attractions of the Wyoming diorama room. These fetal antelope fawns died when a car hit their mother on Wyoming Blvd. A passing motorist stopped to check on the unfortunate doe, realized she was carrying fawns and contacted Casper College to see if the museum would be interested in mounting them. Named by a contest winner in 2015, these babies are two of the newest additions to the museum’s collection and also two of the cutest.

Recently, Casper resident James Holloway contacted the museum with a genuine curiosity: an enormous bee hive that had entombed the body of a squirrel whose nest was built against the tree trunk that housed the hive. Holloway and his wife had watched the bees for years and were horrified when the tree blew down on a cold day three years ago, exposing the heart of the hive. They built a sledge specifically designed to relocate the section of trunk containing the hive to a new place in their back yard. Last fall, the bees relocated themselves, leaving behind the hollow log that had been their home for so many years. When chopping up the trunk, the Holloways discovered the squirrel’s skeleton surrounded by the comb. They donated this interesting artifact to the museum shortly before Christmas. The museum’s staff are currently searching for a way to preserve both the squirrel and the hive. Stand by for future developments.

If you would like to learn more about the Werner’s other storied animals, including the elk that isn’t an elk, the six-toed bear, and the pet bison, stop by and talk to the museum’s staff some time.
of their ponds. Beavers don’t hibernate but remain in their lodges for most of the winter except when swimming beneath the ice to retrieve food caches.

Beavers construct two types of lodges: conical or domed lodges and bank lodges. Domed lodges are located in open water for protection from predators including bear, coyote, lynx, wolves, wolverines, mountain lions, river otter, and various raptors. Constructed of branches, rocks, and mud, each lodge consists of a large living chamber and at least two underwater entrances. The roof peak is left open to allow good air circulation within the structure. The floor of the chamber is padded with woodchips and grass that is cleared out and replaced regularly. Lodge walls are thick, and even when the temperatures outside drop well below freezing, the interior of the lodge remains warm. On very cold days, these structures look like little cabins complete with steaming chimneys, though in the case of the lodges, the steam is from beaver breath and not from a fireplace. Where water is too deep or too swift to build domed lodges, beavers resort to excavating lodges in the banks of rivers and lakes.

Beavers build dams in part to surround their lodges with a protective barrier of water. They choose to dam shallow streams in easily flooded flat areas that have an abundance of woody food plants nearby. Natural features like rocks or stumps form anchors for the dams; man-made culverts and stone walls also attract beaver activity. In a pinch, beavers fell large trees across streams to form a base for their dams. As the waters rise, beavers are able to swim further afield in search of building materials and food. They are skilled excavators as well as builders and have been known to dig canals over 30 yards long in order to have water access to good food and building material sites. Like lodges, dams are constructed of wood, rock, and mud.

The wetland habitats formed by damming and flooding support many species of wildlife, making beaver a keystone species. The stumps left from beavers’ activity attract insects which in turn attract birds. Ponds created by beavers increase habitat for aquatic creatures like fish, amphibians, and water-dwelling insects. In addition, grazing species like moose, deer, and elk make use of the vegetation around the shores of the ponds. Scientists estimate that 43 percent of all endangered species benefit directly or indirectly from beaver habitat.

Though the beaver’s activity is often regarded as destructive, the resulting ponds recharge ground aquifers, remove pollutants from surface water, and reduce damage from flooding. As dams deteriorate and ponds silt in, the area gradually changes from marsh to meadow, benefiting grazing animals and their predators. Beaver ponds provide protection from drought, decrease erosion and streambank damage, and increase opportunities for human activities, including fishing and hunting, water sports, and wildlife viewing.

CALL FOR ENTRIES

Earthworks

For entry forms and guidelines please contact the Werner Wildlife Museum

Deadline for entries:
Wednesday, April 4, 2018, 4:30 p.m.

Artisans will be notified of acceptance by Friday, April 6, 2018, 4:30 p.m.
If you have never seen an animal use antlers or horns in self-defense, you're probably not spending enough time in the field. Even if you have witnessed this phenomenon, you may not have been clear on which animal was using horns and which was using antlers.

Antlers and horns evolved for basically the same reasons: protection from predators, to guard territory and assert dominance, to attract the ladies, and to clear aside impediments to movement and food sources.

Pronghorn use their horns to wrestle each other; big horn sheep compete with each other by crashing their heads together in spectacular displays of aggression. Not only can horns and antlers be used to inflict considerable amounts of damage on a rival but they act as shock absorbers to mitigate the effects of repeated blows to the head. Horns and antlers are generally borne by the males but animal species that evolve in open country, such as the American pronghorn, often produce horned females. Even in species wherein both genders have horns or antlers, males still use these protuberances to attract mates. In the animal world, size counts. Males possessing the most impressive antlers or horns are usually the strongest, best-nourished animals and therefore the most desirable mates. Male members of the deer family are sometimes observed sporting bunches of vegetation on their antlers. While such adornment could be the result of a close encounter with low hanging tree branches, some scientists believe it is a deliberate attempt by the animals to enhance their buckhood.

**Horns**

Horns are found primarily in the bovine family Bovidae, which includes antelope, domestic cattle, sheep, goats, and bison. Pronghorn also have horns and are the only member of their family Antilocapridae. Horns consist of a live bone core covered by an exterior sheath comprised of keratin and protein. The bone is an extension of the skull and remains permanently in place. Rhinoceros horns are a little different, being composed of calcium, keratin, and melanin that softens in the sun and can be shaped by rubbing against the ground. Rhino horns may also regrow after being damaged, depending on how much of the horn is missing.

Most horned animals never lose their horns which continue to grow throughout their lives. Pronghorn antelope are an exception: they shed and regrow exterior sheaths yearly. In the northern part of their range, pronghorn achieve maximum horn size by the time they are 2 or 3 years old. In the southern part of the range where environmental conditions are less extreme, animals may not achieve this milestone until they are 4 or 5 years old. Boone and Crocket records note that the highest scoring trophy antelope throughout North America are 3 years old or younger. Harsh summer drought and winter blizzards in the range contribute to early mortality of antelope; early maturity, including early horn development, makes mating and species survival more likely.

**INTERESTING HORN TRIVIA**

The three-horned chameleon *Trioceros jacksonii* has true horns and uses them in the same way as do bovids. A native of East Africa, this lizard was imported to the USA as a pet and can now be found in Hawaii, Florida, and California.

Giraffes and oryx are born with horns.

The shofar is a traditional Jewish horn made from the horn of a kosher animal such as a sheep or mountain goat and used in religious ceremonies. Traditionally it is forbidden to make shofars from the horns of cattle due to the unfortunate episode of the golden calf in the Old Testament.
The Werner Wildlife Museum hosts three annual visual arts events, all open to Wyoming residents. With the addition of a new winter show in 2018, original work from artists and artisans around the state will be exhibited throughout the museum eight months out of the year.

The newest event in the Werner’s calendar is a winter show of original work by Wyoming artists aged 11 through 17. Though this show is not juried, artists are expected to meet the same standards set for other shows: submissions must be the original work of the artists from conception to completion and must arrive at the museum with appropriate means of hanging, mounting, or otherwise being displayed. The 2018 show is titled “Songs Without Words” and will be on view at the museum through April 6. The show opening will be held in conjunction with an open house from 4-6 p.m. on Thursday, Feb. 8. Artists, their friends and families, and the general public are encouraged to attend.

The juried spring fine crafts show is open to Wyoming artisans who work with natural materials including but not limited to fiber, leather, bone, horn, wood, stone, gems, and metal. Items which visually incorporate more than five percent man-made materials are excluded from the exhibit as are paintings and photographs. The 2018 artisan show is titled “Earthworks” and will be on view from April 12 through July 13. Call for entries begins on Monday, Feb. 5.

The autumn show is the oldest of these events and features arts and fine crafts with themes limited to wildlife and wilderness: no human or human-made images such as fences, buildings, roads, etc., allowed! In 2017, the show became a juried event that featured artists Claudette Mowrey, Joyce Rogers, Sandra England, Tina McCarty, Tori Pike, Melissa Connelly, Melanie Myron, Anna Marie Cavender, Tom Matte, Deborah Matte, Rose Fry, Lisa Shanor, Michele McDonald, David Sneesby, Doris Rohrer, Nova Simons, Lisa McDonald, Cindy Millay, and Kitty Russell. Jurors were Eileen Lemm of the Werner Wildlife Museum, Valerie Innella-Maiers of the Casper College Art Department, and Casper artist Trisha Miller.

Artists and artisans interested in displaying their work at the museum may call 307-235-2108 or email indiahayford@caspercollege.edu for more information. Though the museum staff does not handle sales, staff will put prospective buyers in contact with artists and artisans who are interested in selling their work. No fees are charged by the museum, but donations are always welcome.
Horn versus Antlers ... Continued

ANTLERS

Antlers are found on members of the deer family Cervidae and are composed of bone. Unlike horns which grow from the base, antlers grow from the tip and are shed and replaced yearly. The protrusions on the skull that gives rise to antlers are called pedicles. Deer and moose shed antlers in the fall and early winter; elk shed in late winter. Once the pedicles heal from shedding, a new set of antlers begins to grow. Each new set of antlers, also called a rack, is larger than the previous year’s set until the animal is about 6 or 8 years old at which time antlers begin to regress in size.

From early spring through late fall, fuzzy skin called velvet covers antlers. This skin is supported by an underlying network of blood vessels and nerves. When antler growth is complete in the fall, the velvet dies and the antlers begin to itch. To rid themselves of this nuisance, bucks energetically rub their antlers against trees until only calcified bone remains. These scratching points on trees are called rubs.

According to Wolfgang Pita Thomas, a neuroscientist at Washington University in St. Louis, Missouri, antlers grow up to ¾ inch per day under good conditions with accompanying skin and nerves keeping pace. Antler nerves generate 10 times faster than human nerves, producing several feet of nerves in less than three months. This rapid growth of antlers is achieved at the expense of other bones which contribute nutrients to the new growth, resulting in a condition called “cyclical reversible osteoporosis.” Antler production requires almost as much energy and nutrients as does gestation. Milk production requires three times more energy than antler production.

Atypical antlers are abnormally, sometimes grotesquely, misshapen antlers. Atypical antlers can result following an injury to the pedicle. Sometimes the deformity is repeated each season throughout the buck’s life. Stunted antler growth can also result in male offspring of does that are undernourished during gestation or lactation. Even though these offspring may be fully nourished during the rest of their lives, stunted antler growth is their lifelong fate. This trait will not be passed on to progeny.

INTERESTING ANTLER TRIVIA:

Caribou are an exception to the rule that only males have antlers. Though a bull caribou’s antlers are generally larger and more complex, only three to five percent of the cows don’t have antlers at all. These females are called “polled” or “bald” animals.

Small mammals, including mice and ground squirrels, seek out shed antlers and animal bones as a source of calcium.

Moose antlers weigh as much as 40 pounds. Elk antlers generally weigh only half of that but can grow to a length and spread of 4 feet with each antler sporting as many as eight points.

Antler cells that are transplanted to a mouse’s skull will produce antler-like growths on the mouse’s head. Mousealopes, anyone?

Which brings us to a particularly burning question that should concern all people in Wyoming: how does an animal resulting from a cross between a jack rabbit and an antelope end up with antlers?
WILDLIFE STUDY SERIES at the Werner Wildlife Museum

FEB. 15, 7 p.m.
Stacey Scott, bird expert, “Bird-brained Ideas About Fine-Feathered Friends”

MAR. 22, 6 p.m.*
Todd Jones, agribusiness instructor, “Harnessing Stubborn: Packing with Mules”

APR. 19, 7 p.m.
Jessie Anderson and Terrance Logue, Summer Field Science Camp, “Field Science Through the Ages”

Programs are held upstairs at Werner Wildlife Museum unless otherwise noted. The public is welcome at all presentations. Reservations are appreciated but walk-ins will never be turned away.

* To be held at Werner Ag Pavilion, Casper College campus.