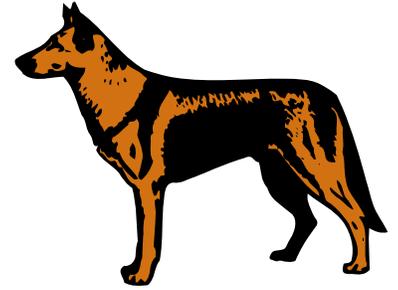




WOLVES, DOGS, HYBRIDS AND PLAINS INDIANS



By Gene Gade

Most scientists believe that dogs are really domesticated grey wolves. The very close wolf-dog relationship is masked by a lot of selective breeding. There are several hundred breeds or varieties of domestic dogs ranging all the way from four pound hairless Mexican Chihuahuas to St. Bernards weighing more than 150 pounds. However, when geneticists study mitochondrial DNA, there is only about a 2% difference between wolf and dog genes. The genetic variance between wolf and dog is not much greater than the variability within wild wolf populations. By comparison, the difference between grey wolves and their other close relative, the coyote, is about 7.5%. The fact that wolves and dogs can still interbreed to produce viable, fertile offspring, opens the question of whether they are even truly separate species.

It is known that domestic canines were present in the early agricultural cultures of the Middle East 12,000 to 14,000 years ago, but it's probable that the man-wolf-dog relationship is far more ancient than that. Wolves and humans have been sharing the same habitats for at least 500,000 years. Some genetic evidence indicates that domestic dogs may have started their genetic divergence from wild wolves as long as 135,000 years ago. (Wayne and Vila, 1999).

Domestication Speculations

There is speculation about whether all domestic dogs came from the grey wolf line or whether some may have been derived from other wild canids. The preponderance of current evidence is that all dogs came from grey wolves. Scientists also wonder whether all dogs are the result of one domestication event, or whether different people at different times and places could have independently domesticated wolves. There is speculation that domestication could have occurred separately at as many as four times and places. For example, some early Middle Eastern breeds (ex. mastiffs and greyhounds), Scandinavian dogs (ex. Norwegian elkhounds),

and Australian dingoes may have been domesticated separately from other more common domestic dogs.

Finally, there is a question as to whether American Indians brought dogs with them from Eurasia, or whether their dogs were domesticated later in the Western Hemisphere. Most experts seem to think that Indians brought dogs with them as they migrated into the New World, and that their dogs were probably domesticated from grey wolves in northeast Asia more than 15,000 years ago. Most of the dogs now found in Asia and Europe are thought to be derived from the same domestication event as American Indian dogs.

The oldest known dog remains in Wyoming are from the Folsom level of the Agate Basin site dated at 10,500+ years. Danny Walker and George Frison of the University of Wyoming examined prehistoric canid material from 18 different Wyoming archaeological sites encompassing at least 10 millennia.

Obviously, there has been extensive selective breeding of domestic dogs in many parts of the world, and frequent back-breeding with the wolf population that has

complicated the wolf-dog gene pool.

In many ways, wolves were pre-adapted to domestication. They live naturally in complex social groups. They are intelligent, highly adaptable, loyal, form pair bonds and hunt cooperatively in packs.

Indian Dogs

Clearly, American Indians have been living with and using dogs for a very long time, but even in this hemisphere, there were great differences among cultures in how they regarded and used dogs. In locales with a surplus economy, dogs were sometimes revered or treated like companions or even pets. In other cultures they were reviled as filthy curs, parasites or tricksters. Some groups ate dogs and considered them a delicacy. Others were repelled by the idea of eating a dog. Harvard Professor, Glover Allen wrote a paper in the 1920's that listed 17 different types of dogs among the tribes of North and South America.

Europeans often described Native American use of dogs in early narratives. A French Priest named Lescarbot recorded in 1618 that the Indians in the upper Great Lakes area had dogs of many colors that were the size and form of foxes. He said they used their dogs in hunting.

However, the hunting cultures generally used dogs for hauling and transportation. Eskimos are famous for using dogs to pull

sleds. Their dogs, of course, were large, had thicker fur and were generally more wolf-like...Huskies, Malamutes, etc.

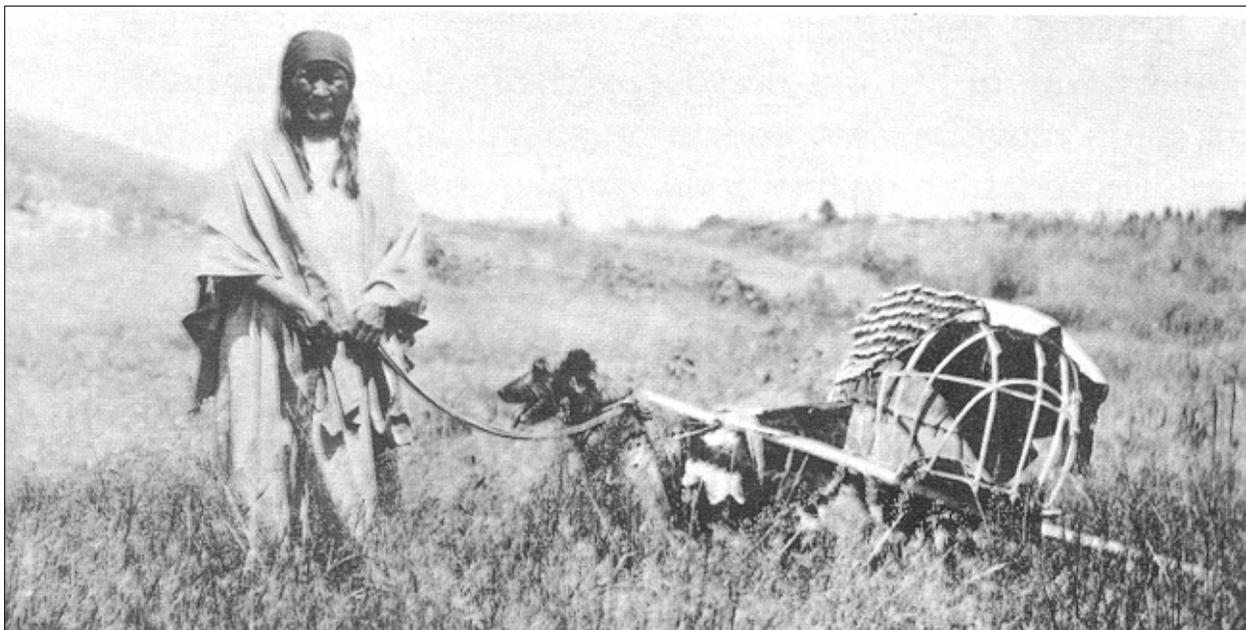
The buffalo hunting Plains Tribes used tools, stealth, ambush and traps to procure bison and other large game. Dogs, with their instinctive tendency to chase large prey, were not desirable in that type of hunting, because they would chase game off. During a communal hunt such as a buffalo jump, dogs were undoubtedly tethered in a camp, preferably miles down-wind and where they could neither be seen nor heard.

Dogs as Beasts of Burden

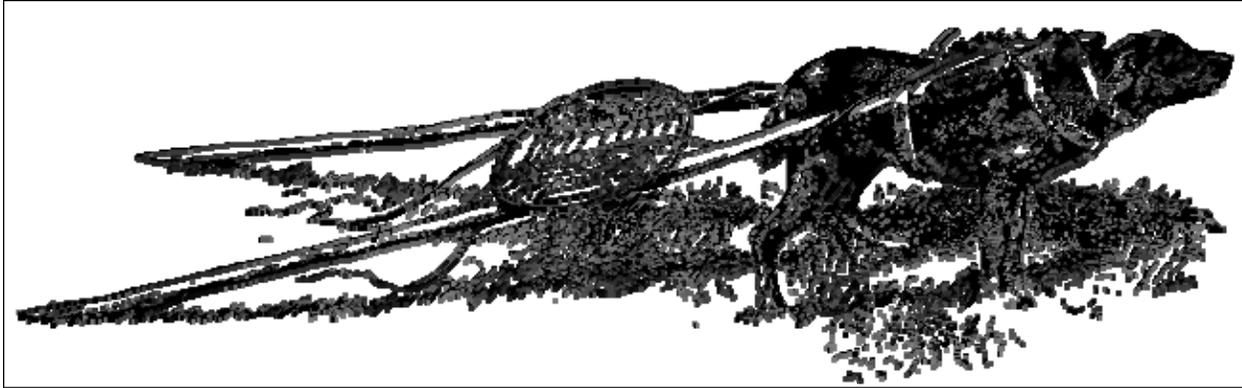
Plains Indians used dogs primarily as beasts of burden. Sometimes they simply strapped pouches like saddle bags on the dog's back. Commonly, Indians attached the forward ends of two poles to a dog with a harness and built a platform to carry goods between the two poles. The trailing end of the poles dragged on the ground behind the dog. These drags or *travois* as the French named them, were used primarily to transport tipis and other material goods.

There is evidence that the dogs used for this purpose by northern Plains Indians were larger than any other breed used by Native Americans—slightly larger than most Eskimo dogs, but slightly smaller than wolves.

In any case, if Indians were using dogs to transport their worldly goods for long dis-



This historic photo of a Plains Indian woman shows how a dog and travois were used to carry important material items (possibly even small children) in the days before horses and wagons.



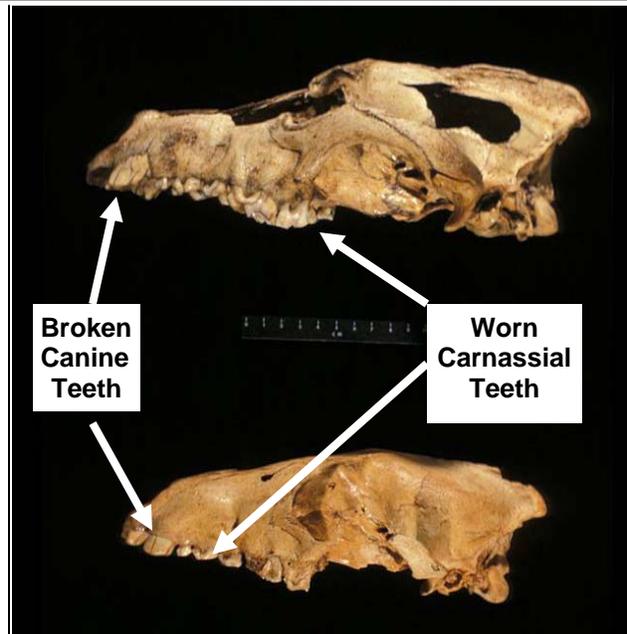
tances across the Great Plains, it seems likely they would want the biggest, strongest dogs they could acquire. Hybridizing dogs and wolves would be easy...just take a female dog ready to breed, tether her on the prairie and let her breed with a wolf. Wolves were never far from Indian camps. There are many documented cases of wolves coming in to Eskimo villages.

The Mystery of Broken Teeth

At least five canine skulls were recovered from the Vore site during the 1970's excavations. Six canid skulls were found at the slightly older Box Elder site near Tensleep, WY. One of the most interesting things about these skulls is that they were very large dogs and nearly of them have canine (fang) teeth that are broken in a similar manner and carnassial (shearing back teeth) that are worn smooth.

Dr. Danny Walker, Assistant State Archaeologist at the University of Wyoming, wrote of the canid skulls from the Vore site, *"...the teeth exhibit the extreme wear that has led previous authors to the conclusion that such canids are dogs 'because no wolf could live long enough to wear his teeth down to this state'...It appears reasonable that a carnivore would have problems surviving with the advanced state of tooth wear shown by this animal."*

Walker concluded that this breaking and wear was *"a direct result of cultural modification...an indication of the domestication of wolves...not a domesticated dog with extremely worn teeth."* The fangs were broken just above the enamel base and use and wear smoothed the broken edges until *"the teeth appear as mere stumps."* Walker believes that



Skulls of Wolf-Dog Hybrids From the Vore site

The top (A) male canid skull is from the Boxelder Creek site and the bottom female skull (B) was recovered during the 1970's excavation of the Vore Buffalo Jump. Both show fangs that were evidently broken intentionally by Indians and shearing teeth that were severely worn. The skulls also have characteristics of wolf-dog hybrids, rather than wild wolves or domestic dogs.

breaking the canines resulted in accelerated wear of the other teeth. Apparently the carnassials were sometimes purposely broken and ground smooth as well.

There are numerous references to the fact that Eskimos commonly bred dogs with wolves. The arctic explorer, Peter Freuchen, observed in 1935 that Eskimos commonly removed the "cutting and tearing" teeth from their dogs by breaking them with hammers and then grinding the rough edges with rocks to prevent the dogs from chewing the seal-skin tethering lines or biting their handlers or others, especially children.

Anatomical Differences

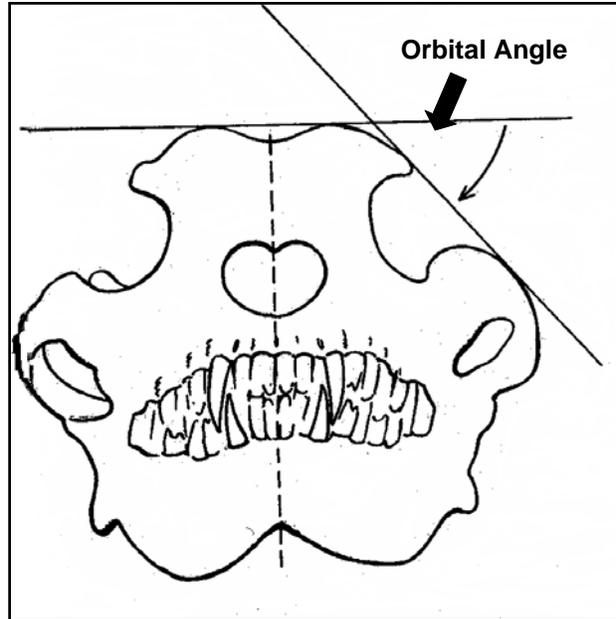
A Russian scientist, N. A. Iljin, extensively studied wolf-dog hybrids in the Soviet Union during the 1930's and 40's. Iljin concluded that the orbital angle (the angle between upper and lower edges of the eye socket and a line drawn across the top of the skull) was the best single diagnostic feature to distinguish wild wolves from domestic dogs.

In wolves this angle measures 40 to 45 degrees whereas in dogs it measures 53 to 60 degrees with wolf-dog hybrid angles somewhere between those ranges. So, wolves have wider, flatter skulls with their cheek bones directed outward and upward compared with dogs. Hybrids basically split the difference with regard to this feature. There are at least four additional skull characteristics as well as differences in other parts of anatomy and behavior that are sometimes used to distinguish wolves, dogs and hybrids.

Walker and Frison examined and statistically analyzed many skull features from 10 different populations of canids. These including 3 types of Eskimo dogs, four other large dog breeds, wolves, coyotes and the possible hybrid skulls from Wyoming archaeological sites. Their evidence strongly suggests that Indians of the Northern Plains were indeed using wolf-dog hybrids and that the canid skulls found at the Vore site were probably from hybrids, bred for maximum strength.

Why hybrid skulls at the VBJ?

Why were the hybrid canines found among the bison bones? Dr. Charles Reher, lead



Studies by Russian N.A. Iljin and many other scientists have identified physical measurements that help distinguish wolves, dogs and hybrids. The orbital angle may be the best single physical feature for differentiating among them.

archaeologist at the Vore site, hypothesizes that, when the butchering was completed in the Vore sinkhole, the humans would have gone to their camp to finish the processing of the buffalo and for thanksgiving ceremonies, feasts and celebrations. The dogs however, might have been rewarded by allowing them to forage among the leftovers in the sinkhole. An older dog with broken or severely worn teeth would be at a serious disadvantage in the fights that would likely ensue. Some were probably killed by other dogs or scavengers and left there. Dr. Reher and his crew discovered their remains several hundred years later.

<h3>The Dog to Horse Conversion</h3> <p>When large numbers of horses became available on the Plains, Indian tribes quickly switched from dog to horse power. Using a similar, but larger travois, a horse could transport from 3 to as many as 8 times as much weight as a dog. Moreover horses could travel farther and faster. Horses also feed themselves by grazing, whereas dogs had to be "fueled" with meat provided by Indian hunters. The photo at right shows a Cheyenne family and horse travois about 1900.</p>	

References: Wolf-Dog Article

- Koler-Matznick, Janice. 2002. The origin of the dog revisited. *Anthrozoos*. 15(2) 98-118.
- Mech, L. David. 1970. *The Wolf: The ecology and behavior of an endangered species*. The Natural History Press, Garden City, NY. 385 pgs.
- Reher, Charles A. and G.C. Frison. 1980. The Vore Site (48CK304); a stratified buffalo jump in the Wyoming Black Hills. *Plains Anthropologist Memoir* 16.
- Walker, Danny and George C. Frison. 1982. Studies on Amerindian dogs, 3: Prehistoric wolf/dog hybrids from the northwest plains. *Journal of Archaeological Science*. 92.125-172.
- Wayne, Robert A. and Carlas Vila'. 2001. Phylogeny and origin of the domestic dog. From: *The Genetics of the Dog*. (Eds. A. Ruvinsky and J. Sampson) CAB International. 14 pgs.

Canine Communication—Body Language

Wolves communicate very effectively through a variety of vocalizations and other behaviors. Domestic dogs have inherited many of these behaviors, but their vocal and body language “vocabularies” are not as complex. Ears, tails, eyes, lips and general body posture are all important. Here are some examples:



A tail held high is an expression of confidence, usually by a dominant male or female



Horizontally stiffly held tail means that the wolf is hunting or going to attack



Wagging the tail in this manner indicates friendly and relaxed attitude.



Tail down indicates relaxation



Half tucked tail and partially arched back indicate submission or humbling to a more dominant animal



Fully tucked tail and highly arched back indicates extreme fear of and submission to a dominant animal



Attacking Position



Defensive; feels threatened



Dominance (top)
Submission (down)



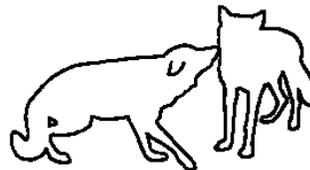
Down wolf is passive & submissive



Playing—Having fun



Running in fear



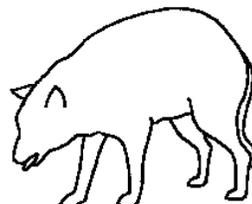
Wolf on left is showing active submission to a more dominant animal



Playing—Crouching with hind quarters elevated



Yearling submitting to a dominant wolf



Wolf is feeling fear, but is also aggressive