

NAVAJO SHEEP AND GOAT GUARDING DOGS: A New World Solution to the Coyote Problem

Hal L. Black

When the Spaniards moved into the American Southwest, their intention was to provide the Indians with a somewhat watered down version of Spanish culture, one aspect of which was sheep ranching. Among the Pueblo, their primary target, sheep ranching became important but never replaced farming as the primary means of subsistence. Among the Navajo, however, sheep and goat ranching became the lifestyle and, according to some, Navajo flocks may have surpassed in quality those of the Spanish. Accompanying the Spanish flocks into the western hemisphere were dogs of European origin, described as larger than the indigenous varieties and as keen guardians of the flocks (Lyman 1844). Apparently the Spanish dogs did not persist into the 20th century as a result of inbreeding with Indian dogs, and the resulting mixed-breed dogs came to be used in their place. The Navajo may have used mixed-breed dogs with their flocks since the early 1700's, when they became involved in sheep ranching. Several accounts of the role of Navajo dogs with sheep in the late 1800's are found in Dyk (1938).

In recent years there has been an effort to train, evaluate, and in some cases import into the United States several varieties of large livestock guarding dogs of Eurasian origin (Linhart et al. 1979; Coppinger and Coppinger 1980a, b; Green and Woodruff 1980; Nelson and Nelson 1980). The intent is to use these dogs to help reduce coyote predation on sheep and goats. Since Navajos have for years utilized relatively small mixed-breed dogs for the same purpose, there is the suggestion that they may have a time-tested New World solution to the New World problem of coyote predation. I spent 30 days on the Navajo Reservation in northern Arizona during 1980, herding sheep, observing dog-sheep interactions, and interviewing Navajo ranchers regarding their dog-training techniques.

Study Area and Methodology

By invitation I was asked to visit a ranch near Inscription House, Arizona, operated by a middle-aged couple. I concentrated my activities on this ranch and several others in the general vicinity as opportunity and cooperative attitudes allowed. A typical 24-hour visit to a ranch consisted of my accompanying the herder for the evening and morning activities with the flock. I recorded the dialogue between the herder and me using a pocket-size tape recorder. Data



One of the five dogs that killed a coyote in July, 1980. This flock is seldom accompanied by a herder.

recorded included: number of dogs, age, sex, if neutered, weight, color, presence or absence of tail, and the number of sheep and goats. I recorded all observations of several behaviors including barking, playing, exploratory behavior, fighting among dogs, interspecific grooming, and reactions of dogs to tape recordings of coyote howls.¹ When not herding I remained at the corral and continued to record occurrences of the above-mentioned behaviors.

The Dogs

Navajo livestock guarding dogs are best described as typical mixed-breed. The average number of guard dogs accompanying the seven different mixed goat and sheep flocks I studied was three. The 16 I was able to weigh ranged from 15 to 60 pounds. There were approximately equal numbers of males and females and five of the males examined had been castrated. All but two working females had borne litters. The two barren females had not been neutered but neither had ever been pregnant. Tails had been partially cut off on seven of the 16. All the dogs were wary of strangers and four belonging to one rancher were not handled even by their owners and would best be described as semiwild. There was no evidence of selective breeding, and in spite of nearly equal sex ratios most ranchers said they preferred males to females when given a choice.

Guard dogs were not housed in shelters other than those of their own making, which usually consisted of self-

¹The author is an associate professor of Indian education and zoology at Brigham Young University, Provo, Utah 84602.



Three dogs of a four-dog group that have been with the same flock for nearly 5 years.

excavated depressions in the soil near the base of corral fences or within the corrals. They were fed once a day on table scraps or dog food, depending upon the attitude and economic status of the individual rancher. They were fed at the corral or called to the house for their meal. Those fed at the house returned to the corrals and flocks without commands.

Females with puppies which are born and housed at the corral are allowed to remain there until weaning, when they are again expected to accompany the flock. Most ranchers said that puppies learned best how to "take care of the sheep" from an experienced mother. New whelps are raised at the corral in physical, olfactory, and visual contact with the sheep and goats. There was no mention of attempts to separate the dogs from the ewes during lambing season. One family said they preferred to raise and train new whelps with lambs when possible. Children are discouraged from playing with puppies or bringing them to the house. Young dogs that stray from the corral to the house are chased back with shouting and stone throwing. On one occasion, I was told that dogs would be tied at the corral until they were less inclined to wander. One elderly man living near Navajo Mountain, Arizona, reported he once raised a pup by nursing it on a goat. Initially the goat had to be restrained, but later it would allow the pup to nurse at its choosing. A dog that did not learn to stay with the sheep was, again depending upon the attitude of the owner, destroyed, allowed to convert into a house dog, or given away.

Some dogs were given names to which they would more or less respond. If a dog lingered at the corral or near the herder the command "sheep" ("dibe") was given along with gesturing with the arm in the direction of the sheep. This was usually adequate to move the dog to its chores.

Dog-Sheep Interactions

The better guard dogs are with the flocks 24 hours a day. There are occasional sallies to nearby water, to chase a rabbit, ground squirrel, or lizard. Hundreds of instantaneous scans of the flocks seldom failed to find all or most of the dogs in attendance. With the exception of rabbit chases, the greatest distance between a guarding dog and the majority of the herd seldom exceeded 15-20 yards. As temperatures increased, both dogs and livestock sought shade and would frequently bed together, often in physical contact beneath trees.

While mingling with the sheep and goats in the corrals, six

different dogs were seen to groom with their tongues adult sheep around their eyes, nose, ears, and perineum. The sheep remained passive during this grooming, but one ewe oriented her head as if to facilitate grooming. One 18 lb, 4-year-old female dog that had been raised with sheep and goats regularly sat and slept on the back of a large ram. Goats and sheep on three occasions threatened to butt a nearby dog, but the threat was terminated before actual contact. On these occasions the threatened dog would roll on its back in a typical canine appeasement gesture. The dogs gave no evidence of dominance over the livestock. On one occasion, however, a dog growled and snapped at an adult ewe that tried to eat from the dog's food dish. I never saw a dog chase, bite, or perform any undesirable behavior toward sheep or goats regardless of age or size. In general, I would characterize the relationship between the dogs and the flocks as one free from aggression.

Dog-Coyote Interactions

At night while seated in my vehicle, I broadcast (for 4 to 5 sec.) tape cassette recordings of coyote howls to corralled sheep and goats as well as the attending dogs. Eleven dogs on three different ranches were involved in this test. All dogs responded by running several yards toward the general direction of the sound while barking, growling, or whining. There was considerable variation in the amount of time dogs would continue to bark after exposure, but an average of three to four minutes was typical. One small female dog, after hearing the coyote howls, would regularly bark intermittently for 15 to 20 minutes outside the corral.

One flock studied consisted of 60 sheep and 20 goats. Four dogs, ranging in ages from 4 to 6 years, were born at the corral and have remained with the flock continuously since then. Their owner reported that since these dogs have been with the sheep only one lamb has been lost. He also reported once owning a mixed-breed German Shepherd cross that regularly killed coyotes, stray dogs, cats, porcupines, rabbits, and rodents and functioned well as a guard dog. When it was about 10 years old, it began to kill sheep and was shot.

Another rancher who operated a mixed herd of primarily goats reported the following incident. He was returning after dark with his flock to the corral when his three dogs attacked a coyote and began tearing it apart.

A middle-aged Navajo man who lived in Monument Valley reported that his five dogs whose weights were about 25 lb



Navajo guard dog with the flock on open rangeland.

killed a coyote in July, 1980. These dogs were the most unapproachable of any that I observed. They were somewhat thin and wary of intruders. The dogs were called from the corral to the house in the evenings for feeding and would then return to the corral about 100 yards away. They were observed to leave the corral area shortly after day break and accompany the sheep and goats to water about one-half mile away. They did this without the presence of a herder. The rancher said that he seldom herded the sheep but left that to the dogs.

One rancher told me that his current dogs were worthless and would probably run from a coyote. Several ranchers reported that current dogs were inferior to former ones they had owned. Four reported that their dogs were as good as any they had owned. Regardless of the esteem in which their dogs were held, they were considered necessary to the ranching operation.

Discussion

The Navajo of the American Southwest have retained the old Spanish practice of training dogs to live 24 hours a day in intimate contact with their sheep and goat flocks. There are, however, several ways in which the Navajo have modified the Spanish practice, partially perhaps in response to environmental and cultural constraints. Mixed-breed dogs of variable shape and sizes are used rather than large pure-bred varieties. Navajos could have learned by observation the Spanish methods of training guard dogs, or they could have been intentionally trained when serving as shepherds of Spanish flocks. It is also possible that since Navajos had dogs prior to the introduction of sheep, they simply derived their own recipe for training and maintaining them with their newly acquired flocks. An interesting example of an Anglo attempt at training livestock guarding dogs, using a technique like that of the Navajo, is given by Bendure (1948). As with the Navajo, Bendure apparently used mixed-breed dogs and simple procedures.

The Navajo, while concerned and appreciative of the value of his dogs, remains physically and perhaps emotionally detached from them. Human involvement with the dogs seems to be minimal, unlike that suggested for would-be trainers and owners of Old World guard dogs (Linhart et al. 1979). Of course, it would make sense to be friendly or at least in control of a potentially dangerous large dog of 100-140 lbs. With small to medium size dogs, threatening gestures seem adequate to discourage a would-be attack. Navajo dogs appear to be largely unconcerned as to who is labelled their owner. They could be transferred to new flocks with little difficulty. Navajos seem to promote the dogs as the sheep's best friend and as man's friend only indirectly and only as necessary. Throwing rocks or sticks, and few overt signs of affection are all acceptable methods for encouraging the dogs to remain with the flock. This is not unlike the situation in some parts of Eurasia.

None of the dogs I observed showed any obnoxious behavior such as biting or chasing sheep of any age. This was the case, in spite of constant exposure to sheep and lambs even in lambing sheds. While not proven, I suspect that small to medium sized mixed-breed dogs are subordinate to sheep and goats. This apparently does not affect their effectiveness in encounters with strange dogs or coyotes.

Navajos are economically justified in keeping several (as many as five) small to medium size dogs with their flocks, dogs who do some foraging on their own and require rela-

tively small amounts of food. The diverse behavior of a group of social, mongrel guard dogs presents to a would-be intruder, whether dog, or coyote, an unpredictable adversary. As noted above, one dog continued to bark at coyote howls 15 to 20 minutes after the other three members of this guarding group had returned to sleep. Many different eyes, ears, noses, and dispositions provided by social mongrels seem to be effective as far as Navajos are concerned.

As I have read the recent articles on the training techniques and performances of the several breeds of Old World guard dogs and compared them to what I have observed among the Navajo, I feel forced to draw an analogy, though tentative, of the relative merit and justification of the Old World guard dogs as coyote deterrents versus the use of mixed-breed dogs. It is simply: "Why buy a Seiko-Quartz if a Timex will do." A Timex can be found at any store, is inexpensive to buy and maintain, is disposable, the instruction manual is small, and more importantly it tells time. I have read nothing in the literature regarding the behavior of the Old World breeds that I have not seen exhibited in the mongrel dogs used by the Navajo. I suspect that the large predators of the Old World (wolves, cats, and bear) have created the need for the traditional Old World livestock-guarding-dog recipe. In the New World, the Navajo guard dog may be the best recipe for coyotes.

¹Tape recordings of coyote howls were provided by Jerran T. Flinders, Dept. of Botany and Range Science, Brigham Young University.

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Readers interested in guard dogs for livestock will find the following LETTER TO THE EDITOR helpful.

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Dear Danny:

Re: Your comments about ranch dogs in the August issue of *Rangelands*.

I do not have a story on stock dogs, but I thought you and *Rangelands* readers might be interested in sources of stock dog information and training. We had a need for such information a couple of years ago and located several sources. This type of literature was almost impossible to locate, but after many checks with libraries, bookstores, and publishers, we were able to acquire six different books. Locating this literature would not be an easy task for the ranching and farming public and I thought you and *Rangelands* readers might appreciate the shortcut to the sources of stock dog

literature summarized as follows. I would consider any and all of the books valuable to the stock dog owner and/or trainer.

Allen, Arthur N. 1965. *Border collies in America*. Arthur N. Allen, Rt. 3, McLeansboro, Illinois 62859. USA. 56 p.

This book contains much academic information on Border collies as well as training for sheep handling on the ranch and in trials.¹ It is easy to read with clear informative pictures. A good book.

Author not stated. No date. *Dogs of Australia*. (An official publication of the Kennel Control Council. Melbourne, Victoria.) Humphrey & Formula Press. Pty. Ltd. Bayswater, Melbourne, Victoria, Australia. 128 p.

This book discusses in detail the breed characteristics and training of numerous Australian dogs including many stock dogs. Included are the dingo, Australian cattle dog, border collie, Australian shepherd, and many others. All well illustrated by pictures. A good book.

Holmes, John. 1978. *The farmer's dog*. The Anchor Press, Ltd. Tiptree, Essex. Great Britain. 162 p.

This book is very detailed on the training and utilization of the Border collie. Included are good pictorial illustrations. An excellent book.

¹*Trials and trialing* is an organized contest of the handling and overall ability of the stock dog doing its work. These contests in this region are sometimes held at county fairs, etc. Apparently in some areas they have special trials not necessarily associated with other gatherings. In analogy, we might relate to these trials as being comparable to bird dog trials except, of course, in these trials the objective is to contest the stock dog and its handling of stock.

Longton, Tim, and Edward Hart. 1976. *The sheep dog: Its work and training*. Davis and Charles, Inc. North Pomfret, Vermont 05053. USA. 124 p.

This book is written primarily for the Border collie in sheep work. It includes much information on dog management, training, and trialing. An excellent book.

Means, Ben. 1970. *The perfect stock dog*. Ben Means, Rt. 1, Box 23, Walnut Grove, Missouri 65770. 24 p.

This book is written primarily for training of the Border collie for farm and ranch work without consideration for trialing, etc. It has a few pictured and diagrammed illustrations and is written in the language of the country boy with special emphasis on training a "using cow dog." A good book written for the country boy trainer and user.

Mills, A.R., and S.F. Herbert. 1964. *A practical guide to handling dogs and stock*. A.H. and A.W. Reed Ltd., 51 Whiting Street, Artarmon, Sydney, New South Wales, Australia. 125 p.

This is a very detailed book on the training and utilization of the basic stock dog. It does not have illustrations. An excellent book.

Most paramount in all dog training and utilization is the training of the man.

R.L. Dalrymple
Pasture & Crops Specialist
The Samuel Roberts Noble Foundation
Ardmore, Oklahoma

A Rangeland Parable

Steve Nelle

(This is a fictional analogy that tells an old story in a slightly different way.)

Three masters each had a worker doing labor for them. The first master worked his worker continuously, day and night, giving him little or no rest and inadequate food. Since the worker was overworked and underfed, he soon began to work off of his limited fat reserve. The worker lived and worked off of these reserves for a short while until they were used up. As the master continued to work him, he became weaker and weaker until the worker finally collapsed. The master tried to work him still more until the worker soon died.

The second master likewise overworked and underfed his worker until he too had to work on his limited fat reserve. As this worker became too weak to work he also collapsed. But the master had pity on the worker and allowed him to rest and eat. After a prolonged recovery period the worker eventually regained enough strength to begin work again. He was, however, still in a weakened condition and was not able to perform to his potential.

The third master worked his worker hard each day from sunup until sundown. This master fed the worker well, gave him breaks and allowed him to rest at night. This master got many years of dependable service from the worker who remained strong and healthy all of his life.

The first master allowed a once-productive worker to die by over-working him. The worker would have given him years more work if the master had given him an occasional chance to rest.

The second master, even though he spared the life of his worker, lost much productive work from him, and impaired his ability for future work.

The third master sacrificed a small amount of initial production by allowing his worker to rest. This short-term sacrifice was, however, far outweighed by the long-term productivity the master got from his worker over long years.

So take heed, you masters of the range. Take care of the hardest worker on your ranch, your grassland, and it will serve you faithfully forever.—**Steve Nelle**, Laredo, Texas