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Raising and Training a Livestock-Guarding Dog

We'll review the basics of guarding dog behavior and the methods of starting a pup with sheep. We'll discuss problems you might encounter with guarding dogs, and we'll suggest some solutions.

Our suggestions apply to any of the traditional Old World breeds— Anatolian Shepherd, Great Pyrenees, Komondor, Kuvasz, Maremma, and Shar Planinetz—because basic behavior is the same among them. Furthermore, the methods are widely accepted; the Navajo of the American Southwest have used them to train dogs for guardian duty for 200 years.

Training a guarding dog is a different process from training a dog for obedience trials, hunting, or herding. Training a livestock-guarding dog is primarily a matter of *raising the dog with sheep* (figure 1). The process involves both supervising to prevent bad habits from developing and establishing limits of acceptable behavior that are compatible with your operation.

Successful training produces an adult that's trustworthy with sheep, attentive to sheep, and protective of sheep. And we'll note that these factors build on one another: Protective

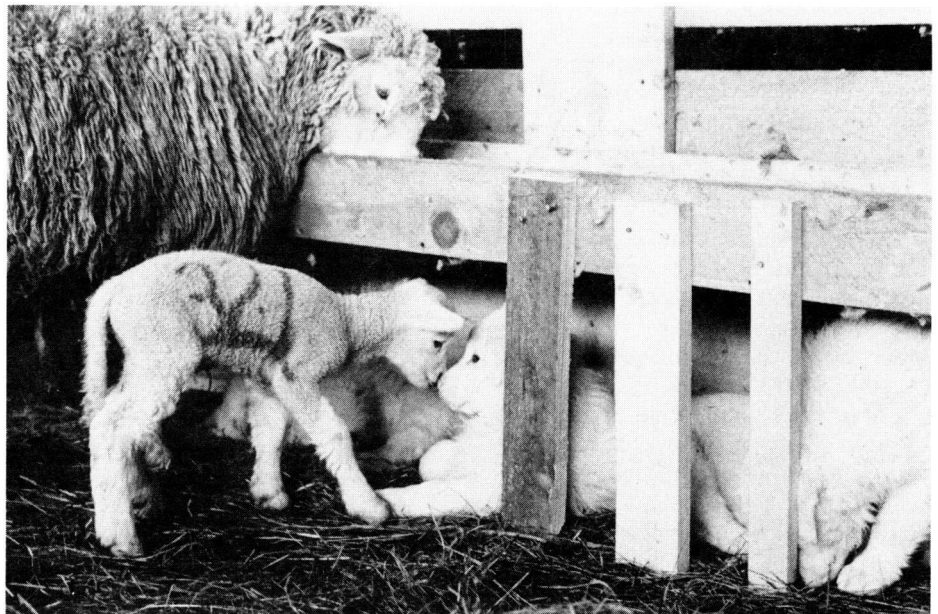


Figure 1.—These 8-week Maremma pups are being raised in the lambing barn. The vertical boards nailed to the feed trough give pups a place to escape from a ewe that may butt. Sniffing nose-to-nose is the start of social bonding. Note the similarity of the interaction between this lamb and pup to the ram and adult dog in figure 2b.

behavior is mainly the result of really trustworthy and attentive behavior.

Training may incorporate specific goals for your operation. Perhaps your dog must not jump fences, must

adjust to rotational grazing, or must avoid antipredator devices. You'll also need to decide where you want your dog to work and which sheep you want it to protect.

Basic guarding dog behavior

Livestock-guarding dogs have traits that distinguish them from other breeds. They tend to retain puppylike characteristics throughout their adult lives—licking the muzzle of an adult, food begging, play wrestling, following parents or littermates, staying near a home or den site, barking when something new or strange approaches, and absence of predatory behavior.

The frequency of display of these behaviors varies among dogs, but it can be encouraged and reinforced in a dog through learning and positive experience. Your dog will direct many of these behaviors toward the sheep as if they were littermates or parents.

Livestock-guarding dogs also tend to follow a routine. Establishing an acceptable routine for a growing pup will help to set the pattern of adult behavior. A well-established pattern or routine is often difficult to change.

For example, a pup that never learns to jump a fence may never become a fence-jumper as an adult. However, if fence-jumping becomes an established routine, it's difficult to correct.

Trustworthy. The absence of predatory behavior is the basis of trustworthiness. Livestock-guarding dogs are selected to display investigatory and submissive behaviors that do not threaten sheep or other livestock.

Approaching sheep with ears back and squinted eyes, avoiding direct eye contact, and lying on the back are called *submissive behaviors* (figure 2). Sniffing around the head or anal areas is called *investigatory behavior*. Both are desirable behaviors, signs that your dog has the right instincts and is working properly.

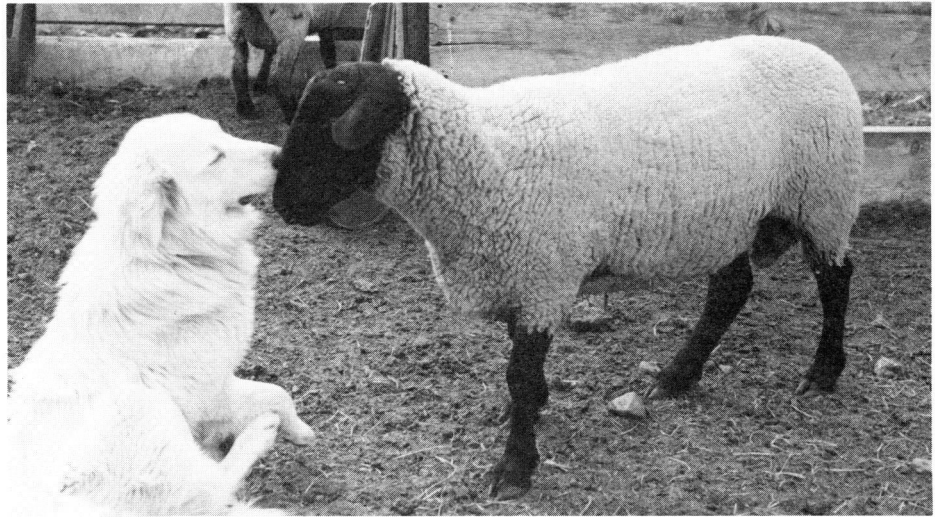


Figure 2a.—These three different submissive poses of an adult Maremma allow sheep to investigate, and each one fosters dog-sheep bonding. Here, eyes are squinted and ears are back; forepaw and rear leg are raised. The dog is prepared to roll over on its back as in figure 4a.

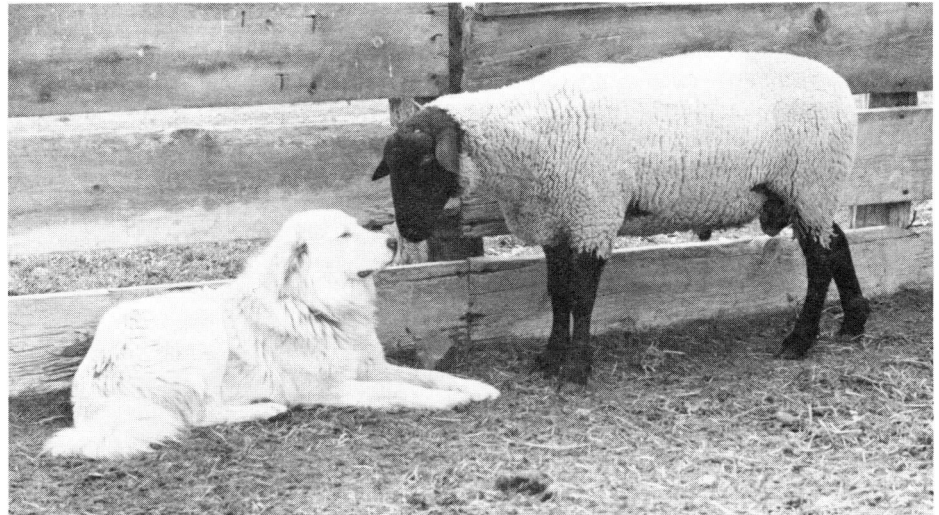


Figure 2b.—Eyes are squinted and ears are back in this nose-to-nose sniffing.



Figure 2c.—Again with squinted eyes and ears back, the dog avoids direct eye contact with sheep.



Figure 3.—This is a display of approach-withdrawal behavior. There's real uncertainty here: The dog's hackles and tail are raised in a posture of dominance or aggression, but his ears are back and he avoids eye contact with the intruder—postures of submission. The dog

circles between sheep and intruder. Will this display become aggressive? The chance that it *might* is enough to ward off most predators. Note how calmly the sheep are feeding in the background.

Attentive. The attraction of a guarding dog to a homesite and to surrogate littermates is the basis of attentiveness. Flock guardians are selected for their ability to follow other animals. Following a moving flock and sleeping and loafing among the sheep are signs of attentiveness to sheep.

A dog that retreats to the flock at the approach of a stranger is showing another good sign of a sheep-attentive dog. Researchers have shown a direct correlation between attentiveness to livestock and a reduction in predation. Therefore, success depends on training your pup to follow sheep.

Protective. The basis of protectiveness is your dog's ability to react to deviations from the routine. Consequently, flock guardians are selected for their ability to bark at new or strange activities.

Typically, a young pup will respond to a new or strange situation by rushing out and barking with tail raised over its back. It will retreat to the sheep or homesite, if challenged, with tail between its legs. This is called approach-withdrawal behavior (figure 3).

A predator—let's say a coyote—usually avoids the threatening approach-withdrawal behavior of a guarding dog. Attacking a predator, which is generally unnecessary, rarely occurs.

Interactions with potential predators often involve complex behaviors that are difficult to interpret. Approach-withdrawal behavior may quickly shift to an aggressive display of dominance or a hasty retreat to the sheep. It might be coupled with defense of food or maternallike defense of a young lamb.

The distance of the approach toward strange activity increases as the dog matures. The distance a dog travels varies with individuals but rarely extends beyond the boundaries of the property. Because protective behavior develops as a result of good trustworthy and attentive behaviors, it doesn't require specific training.

Raising your pup

Social bonds. During the first year, training should emphasize socializing your dog with sheep to form social bonds. Social contacts made shortly after weaning are believed to be important for correct social contacts as adults.

Young pups confined with sheep are more likely as adults to prefer sheep to people or other dogs. Similarly, lambs that are raised with a dog will show an attachment as adults to the dog with which they were raised. An important point is that the sheep-dog bond involves training both sheep and dog.

Rearing your pup with sheep. From the start, it's important to keep your dog with sheep and to avoid contact with your house, with people, and with other dogs—including littermates.

Pen your newly weaned pup with six or more sheep for 8 to 16 weeks (until it's 5 months old) near water, bedding ground, or other points where the sheep gather (figure 4). Possible pen locations are a lambing barn, lamb creep, night corral, or pasture.

One Texas rancher started a new pup in a welded-wire pen under a shade tree in a pasture. He kept six sheep in the pen at all times, rotating sheep several times a week to give all flock members an opportunity to meet the dog.

He kept food, water, and shelter for the dog and sheep in the pen. He placed a salt lick outside the pen to draw other flock members near the dog. He let the pup out to exercise several times a week.

At 5 months, he left the pup on its own during the day and penned it at night. At 8 months, the pup was loose all day. The pen became a homesite for the dog and a gathering point for the rest of the flock. The rancher continued to pen the young dog when he was off the ranch for a day or two.

This system worked well for the rancher because he expected the dog to stay in pastures several miles from the house without constant shepherding.

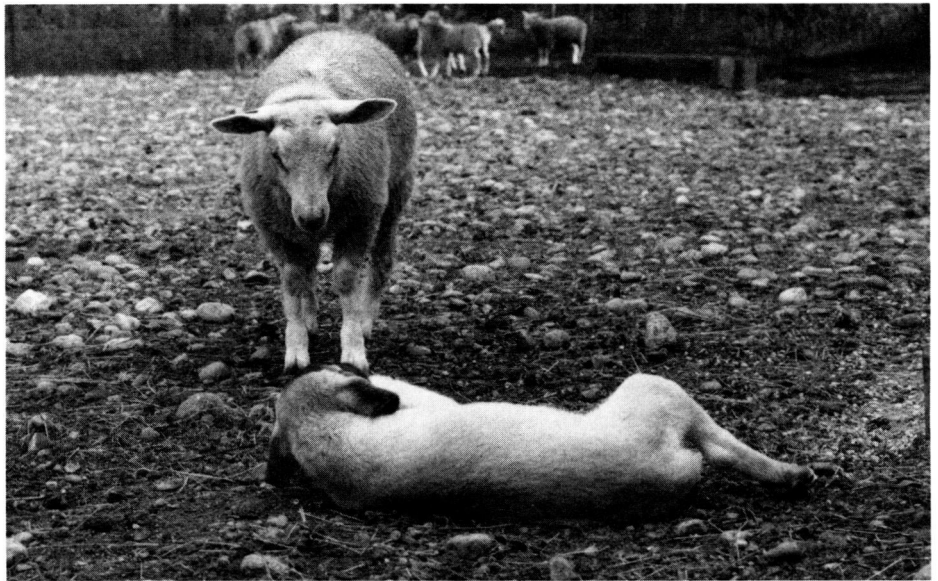


Figure 4a.—At 16 weeks of age, this Anatolian pup is in a well-fenced dry lot with ewes. The pup's submissive posture allows sheep to investigate.

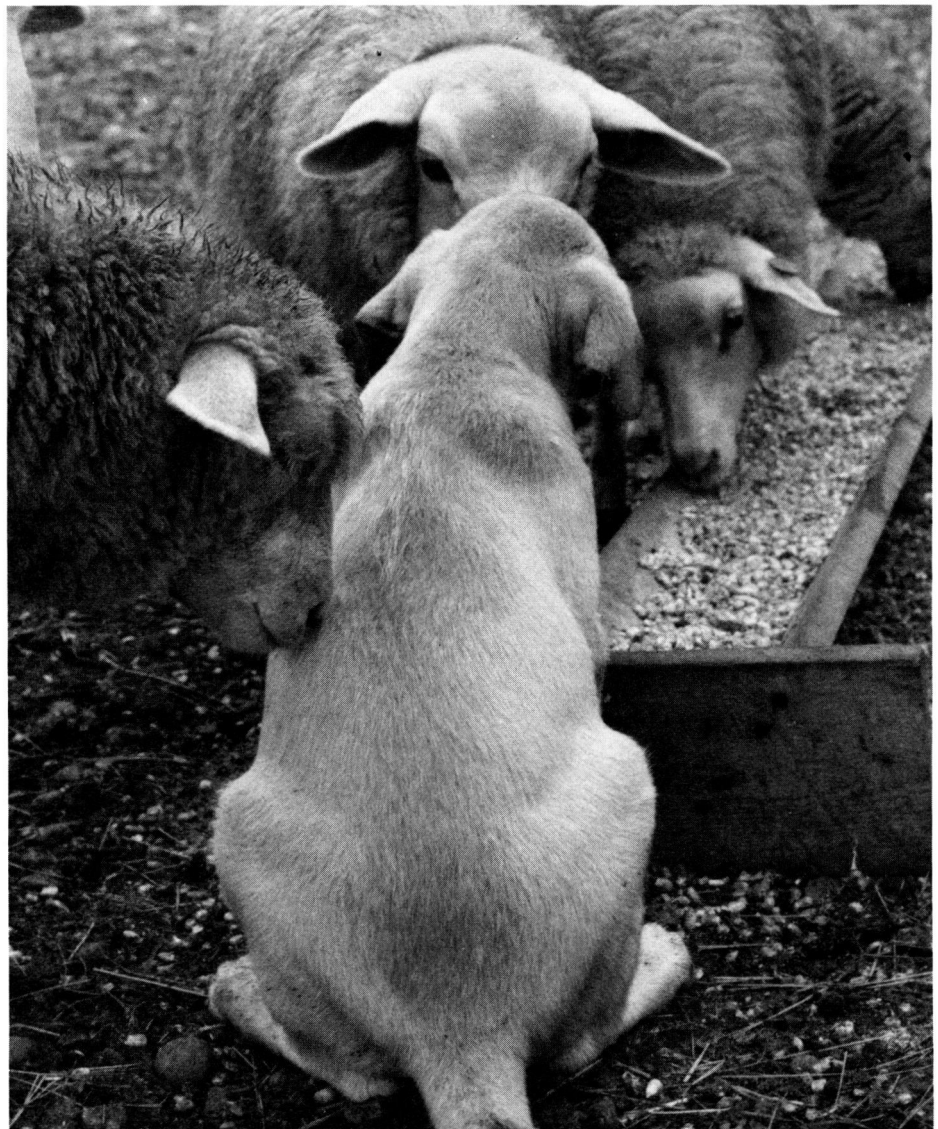


Figure 4b.—The pup's sitting posture is another aspect of submissive behavior, this time with a touch of curiosity—what are those sheep eating?

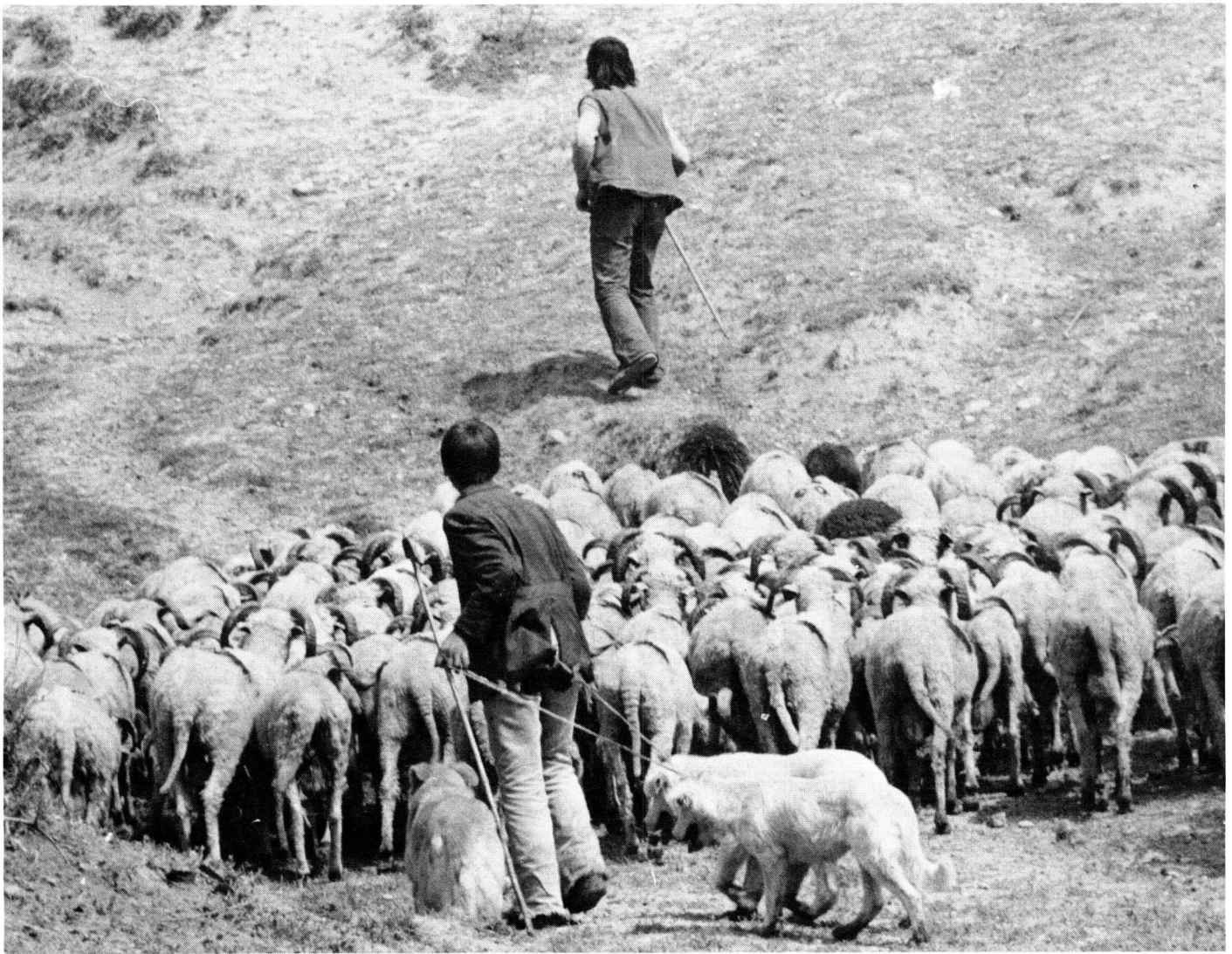


Figure 5.—At 6 months of age, these Shar Planinetz are being taught to follow the flock in a range operation in Yugoslavia.

Use your own judgment about when to leave your dog unpenned without supervision. Normally, it can occur between 6 and 8 months of age. A good sign that you can leave your dog alone is that it stays with the sheep rather than following you as you leave the pasture.

It may be a mistake to leave a 4- or 5-month-old pup alone in a distant pasture, even if the pup is trustworthy and attentive (figure 5). Such a young pup doesn't have the size and strength to defend itself from marauding predators, and a bad experience at that age may prevent its development into a good guarding dog.

Spooky sheep. Confinement of a pup with sheep in a small area promotes the pup's interaction with spooky sheep. You might corral the

pup with the flock at night or follow the example of the Texas rancher.

An alternative is to raise the sheep with replacement lambs that you plan to incorporate into the main flock. Once the dog has made a bond with one group of sheep, other sheep tend to follow.

It's not a good idea to raise the pup with a flock of market lambs—and then expect your dog to be attentive to older spooky ewes when you sell the lambs. In one early trial, a pup was trustworthy and attentive toward the market lambs with which it was raised. When the pup was 6 months old, the rancher sold the market lambs and placed the dog with the ewe flock. The ewes fled, which in turn triggered a play chase from the dog.

Herding dogs. Keep the duties of your herding or pet dogs separate from those of your guarding dogs. A guarding dog that plays with other dogs reinforces the dog-dog bond rather than the dog-sheep bond.

However, *introduce* your herding dog to your guarding dog so the guardian doesn't act aggressively toward the herder. Sometimes, a guarding dog will act aggressively toward *your neighbor's* herding dog, even though it's friendly toward *your* herding dog.

Aggression of a guarding dog toward either herding dogs or intruding dogs will likely depend on differences in age, sex, familiarity, and individual temperament. Antagonistic displays tend to occur most often as a result of competition between dogs of the same sex and age.

Patting. Pat your dog only with deliberate planning because patting reinforces the dog-human bond. The more you pat the dog, the more it will seek human attention. *Some* dog-human bonding is needed because family members and hired help need to interact occasionally with the dog—when, for example, you need to take health exams or rotate pastures.

It's appropriate to pat the dog at feeding time or during checks of sheep, but do it in the middle of the pasture or within the pen. Patting your dog through the fence, over a gate, or at the house reinforces frequent visits to these locations.

Don't pat your dog or feed it at a steady location unless you want it to be there. Obedience training isn't appropriate—it tends to increase social bonding to people.

Materials. Portable panels (3½ × 5 foot) made of welded wire (6-gauge, 4-inch squares), with angle iron frames, are handy for making a training pen. Four panels make a good-sized pen for an 8-week-old pup housed in a lambing shed. Six or eight panels should handle an older pup penned in a pasture. Panels fit easily into the back of a pickup, and you can move them when you rotate pastures or move camp.

A corral made of electric fence and placed near the barn or in a pasture makes an effective training pen. The corral should consist of two or three strands of wire, with the top wire knee-high. You can use electric net fences in the same manner. An electric wire offset from a woven-wire fence discourages a pup from learning to sneak through an existing fence.

A doghouse could make a good homesite and feeding station for your dog. It can double as a salt lick for the sheep if you add a tray on the back of the house. The doghouse then becomes a socializing point for both dog and sheep. You can easily move this homesite from one pasture to the next

if you build it on skids, go-cart wheels, or a trailer frame.

Problems—and some solutions

The first step in diagnosing a behavioral problem is to relate it to one of the three basic behavioral attributes: trustworthy, attentive, or protective. Experience shows that most problems relate to one of these three categories, so we present them here in that order. Then we discuss two special situations, rotational grazing and antipredator devices.

Not trustworthy. Occasionally, a dog will injure or kill a sheep. Most injuries or killings are correctable. They usually have one of these causes: play, injury to a sick or odd sheep, injury to a newborn lamb, or stalking.

Play. Pups, especially from 5 to 10 months old, may start playing with sheep the same way they play with littermates. They usually outgrow disruptive play behavior by 12 to 18 months.

Typically, a young dog will run around a sheep in a circle and stop quickly—front paws extended, rear end raised with tail wagging, and head lowered as in a bow. Ears may be cocked up and forward. If the sheep runs, a play chase often follows.

Sometimes, the dog grabs wool or nibbles on the sheep's ears as it runs alongside. Experienced sheep generally don't run from the play approach of a young dog. Sheep also don't run if the dog is prevented from chasing.

Corrective behavior is mandatory when chasing occurs: The problem can become serious as the sheep develop fear and the dog's success reinforces further chasing. You might throw a stick in the dog's direction to divert its attention or spank the dog and give it a firm "No!"

A dangle stick is a useful training tool for playful pups that are left unattended with the flock. This is a board, stick, or tire section (18 to 30 inches long) that dangles from a hook attached to the dog's collar. Snap the stick to the collar with a swivel hook.

The stick should hang 3 or 4 inches above the ground when the dog stands upright. The device allows the dog to eat, drink, and display submissive and investigatory behaviors. But when the dog tries to run, the stick gets tangled about the legs. This provides immediate discipline and prevents a playful chase.

You can use this device on a playful pup for 3 to 4 weeks. Remove it in stages—first, remove the stick but leave the dangle chain; then, remove the chain when all playful behavior stops.

Another contribution to play behavior may be excess energy caused by improper feeding. A pup that's fed excess calories can either store them as fat or burn them in play activity.

If a pup is playful and fat, reduce its energy intake (but not the quantity of food) by selecting a chow that's low in fat and carbohydrates. Tests indicate that overactive dogs placed on a diet of cooked oats for 2 weeks show reduced play. A diet of cooked oats is high in fiber and creates a feeling of fullness without providing excess energy.

Sick or odd sheep. On rare occasions, a pup or older dog may injure or kill a sick, weak, or odd sheep. This behavior is so far unexplainable. Sheep with severe cases of foot rot or those weakened by internal parasites or other medical problems may be attacked by otherwise trustworthy dogs.

There are documented cases of dogs chewing on dead scrotal sacs or tails that remain following castration or docking with rubber bands. Sheep whose heads are caught in woven wire fences or feeders have also been injured.

Trustworthy dogs that display unusual behavior toward sick or odd sheep normally don't become generalized sheep-killers. Treat or remove the sick or odd sheep—don't remove the dog from guardian duty.

Newborn lambs. Several guarding dogs made mistakes during their first exposure to lambing. Typically, the injurious behavior occurred to the firstborn lambs of the season.

Supervision is required during your dog's first exposure to lambs. Tie or pen the pup if necessary. Discipline prevents a young dog from making further mistakes (those same dogs were trustworthy with newborn lambs in later years). Eating afterbirths is normal, and it won't lead to injurious behavior to sheep.

Stalking. An uncorrectable problem is frequent stalking in a crouch with lowered head, like a Border Collie. This response to sheep is an inborn trait of herding dogs. Training can't prevent the display of such inborn characteristics. Stalking behavior is virtually nonexistent in the Old World guarding dogs. If it does occur, replace the dog.

Not attentive. The most common problem here is a dog returning to areas of human activity, around the house or the barn. Wandering off the property is generally associated with investigatory activity at a nearby house or ranch, or sexual behavior.

Very few dogs are attentive 100% of the time, and most of them sleep during the day. Summer heat may reduce attention toward sheep.

Human activity. If your dog's bond is greater to your house or barn than to the sheep, look for one or more of these causes: You've patted or played with the dog. It's attracted to house dogs. Sheep don't accept the dog.

You can avoid these problems by strictly following the training routine described in "Raising your pup," page 3.

Some curiosity toward areas of activity like corrals or barnyards can be expected—alertness is the basis of protectiveness. A dog that isn't primarily responsive to the activity of sheep may be less effective.

However, dogs attentive to people *can* be effective in these situations: where a shepherd is constantly present; within an electric fence; or where pastures surround house and barn.

Wandering may be associated with an attraction to human activity or with sexual activity of both males and females. Neutering your dog between 6 and 12 months of age can prevent unwanted wandering associated with sexual activity in both sexes. Neutering doesn't appear to affect other qualities of guarding dogs.

Summer heat. Large dogs, especially if they haven't shed their winter coats, may have difficulty dissipating excess heat during summer months. Your dog may retreat beneath a barn or dig a hole in cool dirt—and show no interest in sheep.

Brushing out underfur and shearing long-coated dogs may help. Provide plenty of cool water. Seek veterinary assistance if the dog's temperature rises above 102°F.

Not protective. Consistency in your training for trustworthiness and attentiveness will contribute to protectiveness. Most protectiveness problems are associated with poor attentiveness. Your dog's protectiveness also depends on its aggressiveness, and on factors like density of predators and flocking behavior of sheep.

Aggression toward predators depends on age and sex, and it varies among individual dogs. Displays of dominance associated with aggression may not appear until your dog reaches 18 months.

Don't punish a young dog for not acting aggressively toward a pack of older strays. An attentive dog that's only moderately aggressive can still be an effective guarding dog by alerting a

shepherd with barks or by diverting the attention of the predator to itself rather than to the sheep.

Scattered sheep. A single dog may have difficulty protecting large numbers of widely scattered sheep, especially where predator densities are high. In this case, you might either keep sheep flocked to maximize the dog's effectiveness or add a second or third dog for reinforcement. Adjusting the number of dogs in a sheep operation must be done on a case-by-case basis.

Other factors

Rotational grazing. Moves to new quarters may upset your dog's routine. You should anticipate this and incorporate your moves into the training. The transition is easier if you move a doghouse or pen (homesite and feeding station) with the dog.

Walking your dog around the perimeter of a new pasture is a good method for introducing new surroundings. Sometimes, you may have to tie your dog in a new pasture for 1 to 3 days before it adjusts to the new location.

Antipredator devices. Don't use ejector devices or poison baits in pastures when a guarding dog is present. If ejector devices must be used in the vicinity of your pasture, you'll need to teach your dog to avoid them.

One method is to bait the device with scent and fill the capsule with red pepper and hot sauce. Your dog will associate the scent with the unpalatable taste. Remember to retrain your dog each time you use a new scent.

Raising a second or replacement dog

Sheep producers find that raising a second or replacement dog is easier than raising their first dog. Sheep producer and sheep have more experience the second time around.

The sheep producer has the added convenience of using an older dog as a "teaching" dog. A pup that has an older dog to follow may be left unsupervised at an earlier age than a pup that's raised alone with sheep.

Through 16 weeks of age, it's a good idea to keep your replacement pup near the watchful eye of a shepherd. Pen the pup with sheep in a barn, corral, or pasture as we described in "Rearing your pup with sheep," page 4.

By 16 weeks, you can let the pup follow the older dog and benefit from the older dog's supervision. Producers find that replacement pups direct playful energy toward older dogs rather than sheep and that experienced sheep are less skittish around a new dog when a familiar one is also present.

You'll want to consider starting a replacement when your first dog reaches 2 to 4 years of age because it takes 1½ to 2 years for a guarding dog to mature.

Fatal accidents are high in young dogs 6 months to 2 years old and low in the middle years (2 to 6). If you have two dogs on your ranch, separated in age by 2 to 4 years, your odds are the best that you'll always have a guardian with your flock.

More assistance

There's no way to anticipate the full range of good and bad behaviors your dog may exhibit. Don't hesitate to call on your county Extension agent if you have questions about the behavior or management of your dog. If you need further assistance, one of these three research stations will likely have an answer:

Guarding Dog Project
Dept. of Fisheries and Wildlife
Oregon State University
Corvallis, OR 97331
phone (503) 754-4531

Livestock Guarding Dog Project
New England Farm Center
Hampshire College
Amherst, MA 01002
phone (413) 253-7065

Guarding Dog Project
USDA Sheep Experiment Station
Dubois, ID 83423
phone (208) 374-5306

For further reading

1. *Publications available from the New England Farm Center (address in last section); enclose 50¢ for each copy.*

Coppinger, L., and R. Coppinger, "Livestock-guarding Dogs," *Countryside Journal*, April 1982, pp. 68-77.

Coppinger, L., and R. Coppinger, "Livestock-guarding Dogs That Wear Sheep's Clothing," *Smithsonian*, April 1982, pp. 65-73.

Coppinger, R., and L. Coppinger, "Protecting the Flock," *Sheep*, July 1981, pp. 14-17.

Coppinger, R., J. Lorenz, J. Glendenning, and P. Pinardi, "Attentiveness of Guarding Dogs for Reducing Predation on Domestic Sheep," *Journal of Range Management*, 1983, 36(3): 275-279.

2. *Publications available from the USDA Sheep Experiment Station (address in last section); no charge for single copies.*

Black, H., and J. Green, "Navajo Use of Mixed-Breed Dogs for Management of Predators," *Journal of Range Management*, 1985, 38(1): 11-15.

Green, J., and R. Woodruff, *Guarding Dogs Protect Sheep from Predators*, USDA Agricultural Information Bulletin 455, 1983, 27 pp.

Green, J., R. Woodruff, and T. Teuller, "Livestock Guarding Dogs for Predator Control: Costs, Benefits, and Practicality," *Wildlife Society Bulletin*, 1984 12(1): 44-50.

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