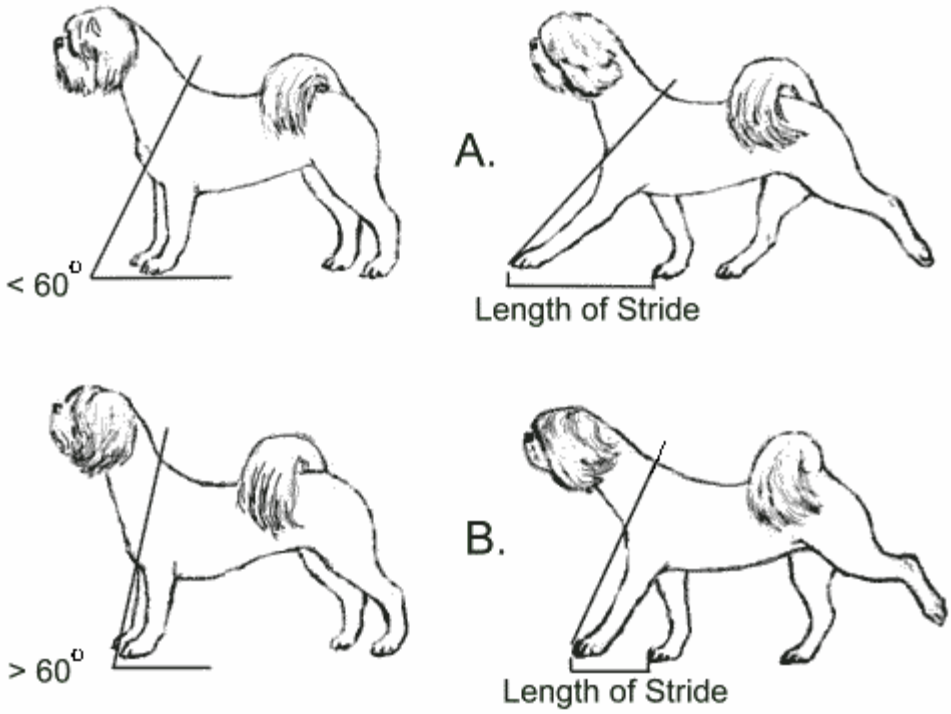
Angulation and Movement in the Lhasa Apso

by Catherine Marley, M.D.

Good movement is very much like good art or good music: you can't describe it, but you know it when you encounter it. Analysis of angulation and movement in the Apso is greatly complicated by coat. Having some shaved ones around the house, I've made some observations I'd like to share with you.

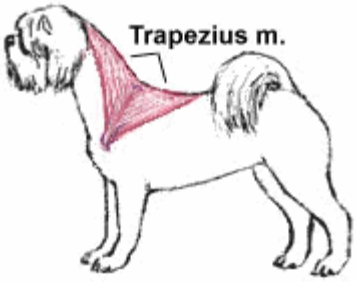


First, let's examine the diagrams above. "A" is our ideally angulated Apso. The shoulder blade is set on the body at 50 to 60 degrees relative to the ground. It articulates with the upper arm at about 100 degrees and is angled to the neck at a similar angle. Maximum reach depends on the shoulder angulation. In maximum extension of the forelimb, the shoulder blade rotates an additional 10 - 15 degrees by contraction of muscles in the neck and upper back, acheiving a total angle near 45 degrees, which provides a maximum length of foreleg stride.

Now examine our poorly angulated Apso, "B." This dog has poor "shoulder layback." Its shoulder is laid back at an angle greater than 60 degrees with the horizontal. This dog does, however, possess good rear angulation. (More about that later.)

Right off, we can see certain things about "B" in comparison to "A." First, because its shoulder angle is steep, the entire forehand assembly is placed more anteriorly on the dog. This anterior placement of the shoulder causes the illusion of a long neck, and a short back. In fact what appears to be neck often actually includes 4 to 8 thoracic vertebrae. In movement this becomes evident. Strong muscles, originating on the head and neck participate in movement by supplying lift to the scapulo-humeral joint. This is what gives the additional 10 to 15 degrees of rotation of the shoulder blade mentioned above. The steep shouldered dog must lower his head and carry it closer to the horizontal, so that those muscles will have the mechanical advantage necessary to rotate the shoulder blade. If the dog is "strung up", The stride can be lengthened by suspension of the front end, but the shoulder will not rotate, and the front will be seen to "hackney".

Good "layback" provides better balanced support to the musculature - particularly to the trapezius muscle. This is a large flat muscle, the upper half of which connects the cervical vertebrae of the neck to the upper half of the scapula, and the lower half of the trapezius connects the lower half of the scapula to the thoracic vertebrae. The upright shoulder blade does not offer much support to the spinal column, and there is a consequent tendency in these



dogs to a sagging topline - quite marked in some cases.

Articulation of the shoulder blade with the upper arm in "B" is at an angle of 130 degrees or more. This flattening of the "point of shoulder" can easily be palpated on dogs with straight shoulders.

When we look at the diagram of "B" in movement, we see that the mechanics of the upright shoulder dictate that maximum extension of the forelimb results in a shortened stride. To compensate for this, the dog may "hackney," bending its elbows and lifting its forefeet high off the ground, often assisted to some extent, by "stringing up" the animal. This maneuver makes it possible for him to get a longer front stride by suspending his front end in mid air while allowing the full driving action of the rear end. While this may minimize the "pounding," many dogs will not tolerate being strung up, and respond by gagging and pulling.

Coming back to diagram B, a problem in rear movement can be seen, resulting from the short front reach. Dog B has the same rear angulation as dog A. However if he used his rear to the same extent as dog A, his rear would out-drive his front and the dog would fall right on his nose. The dog with a poor front and good rear angulation must shorten his rear stride to match the front. The problem then becomes: what to do with all that rear angulation and power? One solution is an exaggerated high-kick in the rear. The power which cannot be used for propulsion because of a shortened front reach is now expended into the air.

This particular movement is often very flashy, especially from the rear. Those rear skirts are flipped rapidly high up the back, giving the impression of a "super driving" rear. Closer attention to the over all forward progress of the dog will reveal that this type of "driving" is largely wasted motion, contributing little toward the business of moving the animal forward. One clue to the presence of this kind of "rear over-drive" is that the rear quarters of such animals will often show excessive vertical (up and down) movement.

The reverse of dog "B" is an animal with a well angulated front and a poorly angulated rear. Many of these will appear high in the rear and will have a "mincing" gait. This dog must shorten his front stride to match a short rear stride. He may move fast, but only by taking many steps very quickly. This kind of movement may be quite smooth and it is difficult to detect if the dog carries a lot of coat. A tip-off will be a real lack of noticeable activity in the rear end.

The dog who is straight in front and rear may also move very well except that his head carriage (the set-on of the neck) will often reveal the presence of straight shoulders. This type of dog may also bounce up and down a good deal, front and rear, as the dog attempts to gain speed by leaving the ground as much as possible.

Coming back to our ideal dog A: this dog will move smoothly and effortlessly on a loose lead with the head extended at about 45 degrees to the body axis. There will not be excessive kick up in the rear, nor much vertical movement front or rear. From the side, the dog will appear to flow forward with long effortless smooth strides. Remember that this is a dog of high altitude, where oxygen is scarce. Any animal whose conformation causes him to expend a great deal of effort in order to move would not survive.

I like to evaluate the smoothness of movement by observing the dog as it moves away from me. I imagine I have a .22 rifle with a 3x scope on it. If I can put 3 imaginary rounds, rapid fire, into the little "bullseye" right under the tail, without moving the rifle, that dog is moving correctly for a Lhasa!

Finally, dogs like humans differ in their athletic ability. There is the occasional dog who moves beautifully despite poor angulation--front, rear or both. Another dog may have all his legs screwed on right but be unable to manage anymore than a shuffle. Some of these may have joint disease, but many are X-ray perfect and still have an ungainly gait. I guess the answer is just as elusive as that to why one man can clear a 7 foot jump and another of seemingly identical physique can't step over a curb without tripping. it is a matter of neurologic integrity, attitude, training and that intangible--talent.

Ringside critics, take note: not all that moves well is necessarily built well. Nor is every bad mover a cripple. But fortunately for the breeder, a well made dog usually moves well.