

Locate and palpate the *Wing of Atlas*:

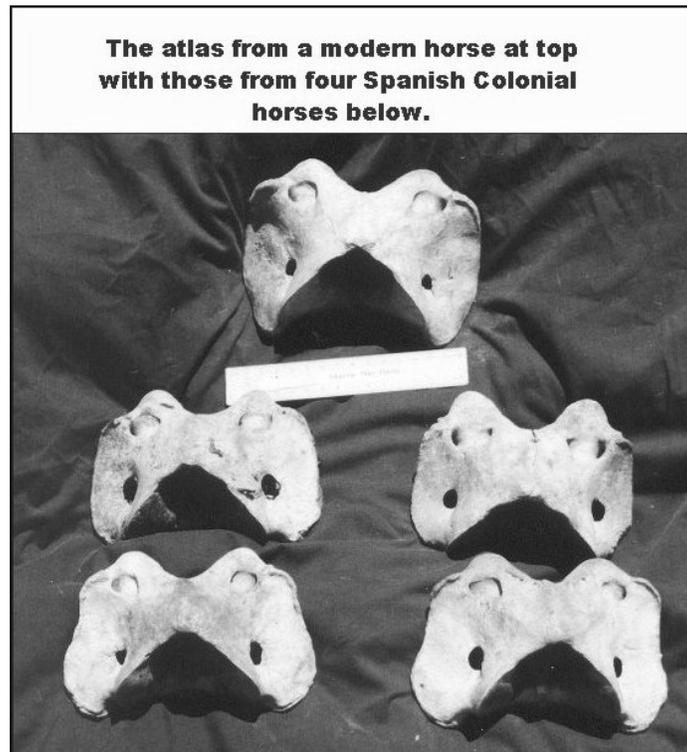
What sets the Spanish Mustang aside from the REST

by Sharon May-Davis B.App.Sc. (Equine)

I believe this question has been asked many times amongst breeders of this fine, old and traditionally unique horse. Subsequently, when Gretchen Patterson asked me to come and view the ‘bone yard’ on offer by the renowned breeder Vickie Ives, I accepted with glee. Now you may be thinking that this is a strange invite to one so far away, but for one such as me, this invite had me running. You see my expertise is the Equine’s Musculo-skeletal System and with the nickname “The Bone Lady”, this opportunity was too good to miss.

So why am I writing this piece? Good question! Well, my reasoning is that having viewed the numerous skeletons on offer, I found a specific detail that was peculiar to this breed alone and not one that I had encountered in other breeds previously studied. Ok, then you ask, “What is it?”

To answer your question we have to address the *Wing of Atlas*, also known as the transverse process of C1. This is the first cervical vertebra behind the skull and this wing in most breeds appears as a semi-circular lateral downward facing extension from the vertebral body. However, in the Spanish Mustang, the wing appears ear shaped in comparison, although up side down depending on the aspect from which it has been viewed.



The next question is, can this be palpated? Yes. The *Wing of Atlas* on a regular breed like the thoroughbred or quarter horse has the significant semi-circular shape that travels from the upper edge of the jugular groove to behind the horse’s ear with little deviation. However, in the Spanish Mustang it starts at the same place from the upper edge of the jugular groove, but instead of traveling upwards towards the ear it deviates dorsally towards the nuchal ligament, centered under the mane.

Other aspects of note were; the dorsal area caudal to the *Alar* region, the *spinal foramen*, the actual shape of the wing from convex to concave and the articulating surface of C1 that receives the *dens* from the *Axis* (C2).

Unfortunately, I only had a short time to spend in Texas and hence, I was unable to acquaint myself with this breed further. But I would like to take this opportunity to thank Gretchen and Vickie for this chance to meet such a sturdy and unique breed.

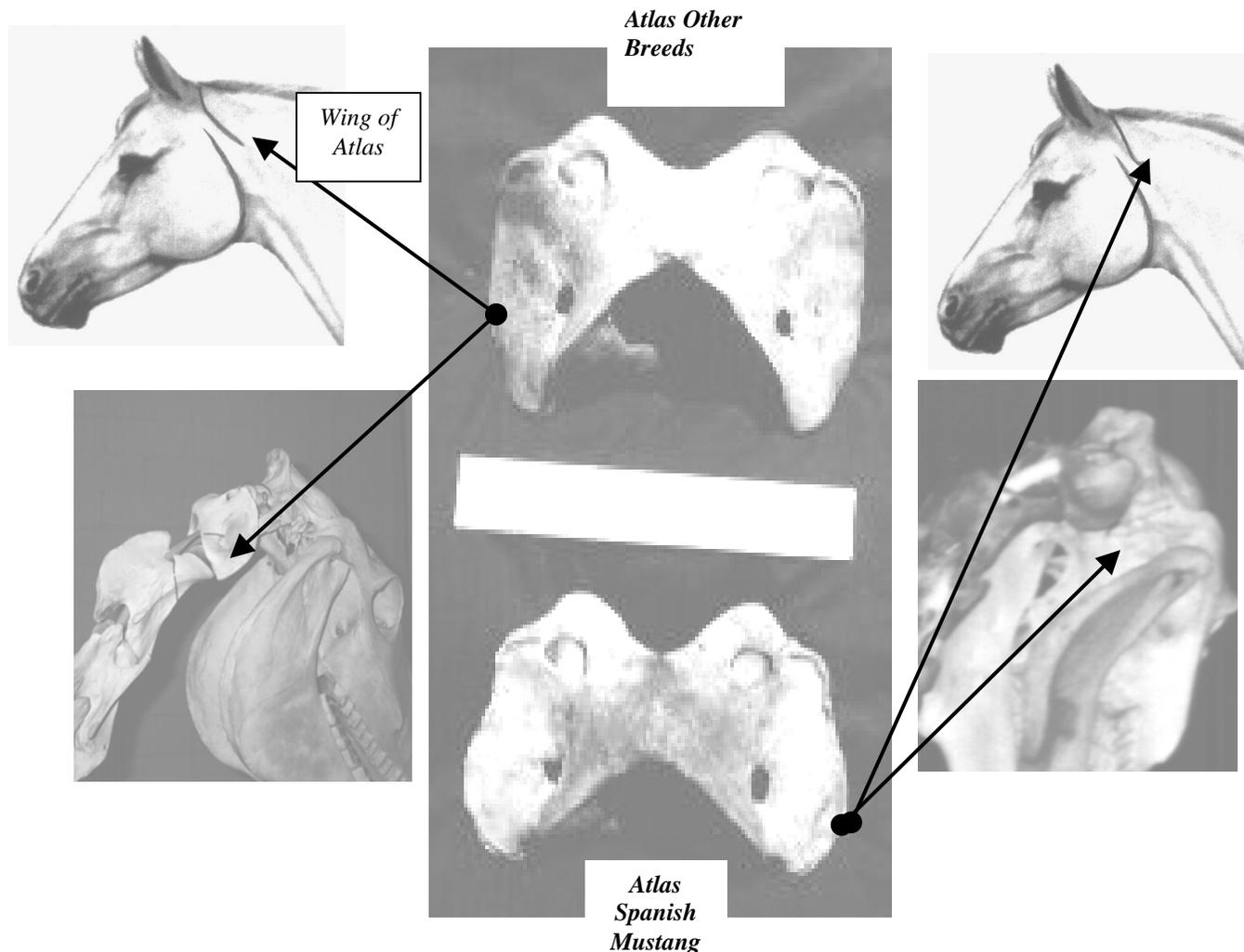
Part 2

Update by Sharon May-Davis B.App.Sc. (Equine)

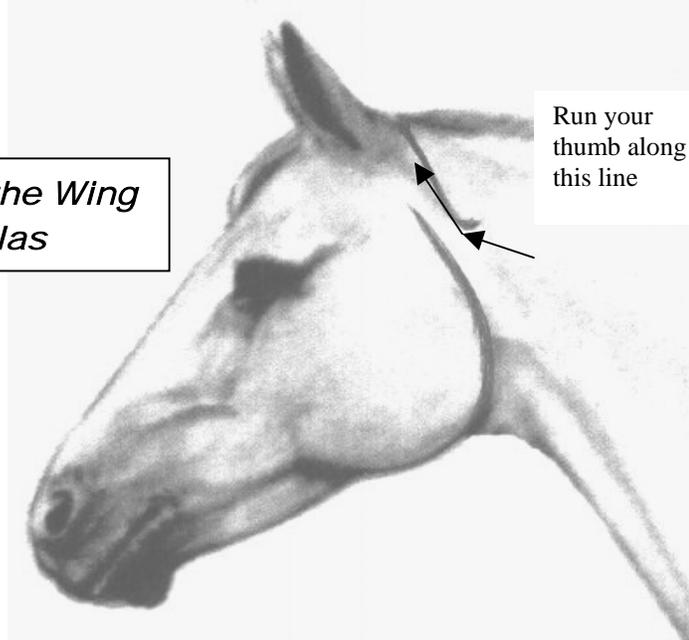
Six months ago I was privileged to view a number of skeletons from Vickie Ives Speir's Spanish Mustang graveyard. As a direct consequence, I noted the *Atlas's* (C1) pear like shaped variation in comparison to other breeds. Although my previous investigations were limited to Arabians, Thoroughbreds, Quarter Horses and the more popular breeds, I felt the overall number of those that I had researched gave the variation in the Spanish Mustang case more credibility. Since then, the palpation techniques I shared with Vickie Speir and Gretchen Patterson to determine this variation has shown 100% accuracy in pure strains.

Hence, I would like to write a more detailed account with diagrams to assist others to determine this variation. In most cases, the *Wing of Atlas* from other breeds looks similar to the top one shown in the diagram on the next page; however, the Spanish Mustang is displayed directly below it in the very same photograph. The pear shape wing, as opposed to the semi circular one, gives rise to a potential verification of the breed if the parentage of the horse is known.

Now to palpate the *Atlas* in the Spanish Mustang, run your thumb or forefinger along its wing as shown by the arrows in the diagram on page 8. You will note the deviation from the *Wing of Atlas* in other breeds by the sharp upward angulation of the wing. In other breeds this palpation follows a smooth descending arc from behind the ear towards the jugular groove, but not so in the Spanish Mustang. However, it must be remembered that this phenotype attribute could also be found in a part bred as a hereditary factor and must not be looked upon as the only classification of the breed.



Locating the Wing of Atlas



Run your thumb along this line

Palpating the Wing of Atlas On a Living Horse

As mentioned earlier I had not encountered this variation in other breeds prior to my visit to Texas or to Karma Farms. But I must now contend that after I wrote the original article I encountered a similar *Atlas* in a miniature horse in Colorado. This brings me to the point where it has been inferred that the wild small horses of the Grand Canyon were used for miniature horse breeding programs early to mid last century. This would clarify and I am now hypothesising here, that these horses evolved from Spanish stock to survive the harsh conditions encountered in the terrain and possibly explains why the Karma Farms Canyon Horse bears the same *Atlas*.

I'm afraid more questions rather than answers have evolved here instead ?

About the Author

Sharon May-Davis is a renowned Equine Therapist who has been involved with performance horses for nearly thirty years. She attends to Australian and State Champions from most equestrian disciplines including Dressage to Western. Furthermore, she was the Equine Therapist for the Modern Pentathlon Horses whilst in training for the Sydney 2000 Olympics and the Australian Reining Team demonstrating on site.

training for the Sydney 2000 Olympics and the Australian Reining Team demonstrating on site. Her competition years included show, rider and in-hand classes up to Royal standard with success in all three categories. She is a qualified Judge for the Show Horse Council and Miniature Horse Association of Australia and as such, judges breed, saddle and rider classes with requests up to State and National Titles.

Her equine academic qualifications have been gained at College and University levels in both Australia and the United States of America (USA). These include a Bachelor of Applied Science (Equine), Advanced Certification in Horse Management and numerous Equine Therapy Programs She has been teaching equine subjects at colleges for over five years and spoken at numerous public gatherings in relation to her work.

Her research into the equine's musculo-skeletal system has earned her the nickname "The Bone Lady" in both Australia and the USA. Her extensive research covers the skeletal anatomy of numerous breeds and performance horses, which has been documented and delivered to several universities and colleges for further clarification. This work prompted Midway College in Kentucky to grant her a "Certificate of Honor" in recognition.

Articulation skills were developed as a 'layperson' through the Australian Museum and since then Sharon has been producing articulated equine skeletons for educational facilities throughout Australia and the USA. Hence, she is frequently found in the field either exhuming skeletons of note or palpating horses prior to euthanasia to correlate her work with the skeletal remains. Therefore, this type of documentation is relevant to the equine athlete as a source of information to base changes within skeletal anatomy pertaining to breeds and performance.