

# Chew on This!



I recently visited a large ALSA sanctioned llama show. The exhibitors were quite diverse, representing several states. The animals too displayed great diversity in color, markings, fiber, origin, and size. Selecting the finest animals was a nationally acclaimed, ALSA Level III judge. This judge is someone I personally respect and admire a great deal. As is always the case, some exhibitors were very happy with the judge's decisions, while others questioned them.

While presenting oral reasons, this judge frequently stated that one of the lower placing animals was the most "conformationally correct" and "best moving", but was placed lower due to being smaller (than the higher placing llamas in the class). Let me clarify. This judge did not say that the top placers and the smaller animal were equal in conformation and movement, but that the smaller animal was the best in the class in terms of conformation, overall balance, and movement. In several classes throughout the show, the judge publicly acknowledged a selection of size over correctness. It was refreshing to see that this judge was publicly "owning up" to what so many judges do, without acknowledging it.

For a few years now I have watched a number of judges place animals according to size first, then correctness. I often wondered if this was an unpublished ALSA mandate to the judges. In preparation for this article I contacted four judges who assured me that this is not the case. Before you start writing

letters to me, let me state for the record that I realize there are many aspects (of conformational correctness) in which size plays a role: size appropriate to age, developmental maturity for age, etc.

Still, I challenge these judges to think about the message they are sending to breeders; the message that "bigger is better".

A few years ago the number of really large llamas at a show or sale represented perhaps 2% of those in attendance; now it is easily more than 50%. Are llamas just naturally growing larger

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in the United States (than those in their native lands) as a result of better nutrition and care? Is this a result of environment and natural selection, or is it a result of selective breeding? The facts show us that llamas have been allowed to breed largely by natural selection in

# The Age Old Question: Does Size Matter?

By Cheryl A. Cave

South America for many, many generations. On the whole, those llamas are small by U.S. standards. So is it an accident of nature that North American llamas are so large? Or is it a result of market-driven selective breeding for larger size animals? Logic tells us it is the latter, rather than the former. OK, so Americans are guilty of selectively breeding llamas for size; is there anything wrong with that? The answer is "It depends". (Don't you hate that answer?)

It is generally held that we can best predict the future by studying the past. The philosopher George Santayana said, "Those who cannot remember the past are condemned to repeat it." For this reason I chose to research the theories and outcomes surrounding selective breeding. This article is not intended as an exhaustive scientific study, nor do I hold myself out as an expert. This is simply a compilation of my research and observations.

## Theories

In 1859 British naturalist Charles Darwin published his theories on the "Origin of the Species", citing the benefits of selective breeding in certain species. Over time this theory has been embraced among animal breeders who stand to gain in celebrity or wealth. Although Darwin advocated a conscientious, slow evolution, many breeders have approached this with an attitude of "if a little is good, then a lot is even better" philosophy. Sad to say, Americans seem to be the leaders in this thinking.

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Let's review the outcome of some of these. Following are excerpts from various studies, which are credited in the footnotes.

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## Seeds of Selective Breeding Meat Production

"**Belgian Blue cattle** were selectively bred to possess double muscle mass, producing twice the amount of beef, and thereby doubling profits. However, their limbs cannot support the added muscle mass. They suffer weakness in ligament and bone structure, and endure a fair amount of pain. The calves have to be delivered by Caesarean section."

"**Broiler chickens** now reach slaughter weight in 42 days (twice as quickly as 30 years ago). As a result, their hearts and lungs cannot cope and even during their brief lifetime, fatal heart attacks are not uncommon. Others will suffer lameness and broken bones as their legs collapse beneath their ballooning weight. Birds that escape slaughter are rarely able to live much longer."

"**Turkeys** (selectively bred for profit) have experienced similar problems. White turkeys bred for hypertrophied chest muscles (to provide more breast meat) have to be artificially inseminated. Their new 'improved' shape may have provided more meat, but it has made reproduction all but impossible. This would not occur in nature because animals which cannot mate cannot pass on their genes, and the trait dies out.

"**Pigs** have been bred to gain weight more quickly and now suffer hip and joint problems as well as lung and heart conditions.

"**Dairy cows** (bred to) produce ten times more milk than their calves could ever drink...suffer nutrient deficiencies, lameness, and mastitis.

## Pets and Show Animals

"**Siamese cats** bred to an extreme type for show success are now frail and fragile.

"The **Peke-faced Persian cat** whose face is so flat that its eyes and sinuses are deformed (due to breeding to the extremes of show standards), has to be on antibiotics for life."

The **Chinese Shar Pei** has been bred to exaggerate the number of wrinkles for show success, resulting in severe respiratory defects.

**Pug dogs**, whose show breed standard is "eyes that are very large, globular in shape" have a tendency for exophthalmoses and exposure keratitis.

The **British Bulldog** breed standard advocates "The skull should be very large – the larger the better". The breed now experiences a high number of dystocia (difficulties in birthing) and "roach" backs.

The **Dachshund's** breed standard dictates that "The whole trunk should be long". Over zealous breeders, taking this to the extreme, have exacerbated the occurrence of prolapsed intervertebral discs (caused by a longer trunk than the frame can support) in the breed.

**Large and giant breed dogs** suffer hip dysplasia, arthritis, and a host of other genetic maladies resulting from breeding for the hypertype.

Similarly, **toy and miniature breed dogs** suffer from arthritis, tracheal collapse, and cataracts.

**Miniature horses** (often bred to perpetuate the small size, in spite of known dwarf characteristics) suffer many health issues and very high reproductive mortality.

Many descendants of Impressive, the muscular, top-winning halter (**Quarter Horse**) stallion of all time, carry his genetic mutation linked to the often-fatal muscular disorder known as hyperkalemic periodic paralysis.

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## Humans Too?

Perhaps the most disturbing interpretation of Darwin's theory is its application in the human animal, known as eugenics.

One of the most disconcerting rulings of the "enlightened" 20th century was the 1927 case of Buck v. Bell, which legalized forced sterilization of

"undesirable" populations. It is this case in which "Justice Oliver Wendell Holmes Jr.(is credited with his) most infamous opinion (upholding Virginia's castration program for the feeble minded), with the pithy 'three generations of idiots are enough.'" In three years, approximately 10,000 people were sterilized without their consent.

Perhaps the most abhorred practitioner of eugenics was Adolf Hitler. His Nazi party's efforts to rid Europe of all "inferior" people, starting with the handicapped in Germany, and moving on to include Jewish people, Poles, the Romany, homosexuals, and groups opposed to the Nazi ideology are frequently accepted as a purely German invention. However, Nazi eugenics philosophies were largely based on the precepts of legalized sterilization of inferior humans set forth by the state of California. Recently state governments in Virginia, Oregon, and South Carolina have published statements of apology to tens of thousands of patients, mostly poor women, who were sterilized against their will in state hospitals between the 1900s and 1960s. In March 2003, California Governor Davis and Attorney General Lockyer added their regrets for the injustices committed in the name of "race betterment".

## What About Llamas?

A llama breeder once told me that she rarely has crias with a birth-weight below 40 pounds on her ranch, and that she culls females who do not produce to this standard. In truth, I believe this was more braggadocio than reality, but consider, if true, the effect on her dams. If we take a benchmark of 325 pounds for the average North American female llama, this means the dams are giving birth to offspring that are 12.5% of their own weight. This is equivalent to a 130 pound woman giving birth to a baby weighing more than 16 pounds.

Is there evidence that the llama species is suffering any ill effects from hypertype. breeding? We've all heard rumors of breeders who euthanize crias born with genetic flaws to conceal defects passed on by their prize studs.

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We've heard that decorative blankets have been used to conceal compromised toplines (resulting from generations of breeding for size over soundness), and that "creative shearing" is used to conceal numerous flaws.

Since a substantial amount of money is at stake for breeders (and veterinarians), genetic flaws are typically well concealed. Only after generations of defective animals have been identified can we substantiate our suspicions, but at what cost to the animals?

## Other Characteristics

While a good deal of the information available suggests that breeding to increase animal size has historically played a role in increasing genetic flaws, it should be stated that breeding for the "extreme" of any characteristic is equally dangerous.

I've heard breeders of small or "miniature" llamas boast that their stud is a product of six generations of minis. I've heard breeders covet llamas with "tree trunk" (heavily boned) legs. I've seen hundreds of breeders scurry to produce suri fiber following an auction or sale where a suri-type llama commanded an extravagant sale price. Our brief history of camelid breeding in North America suggests that none of these characteristics are detrimental to the species unless taken to the extreme.

## Correcting Our Mistakes

### European Legislation

In 1995 the Council of Europe (which covers 41 member countries including the UK), concerned about the gradual shift towards American-style ultra-types (referred to as "hypertypes") in domestic pets, issued the "European Convention for the Protection of Pet Animals". This treaty encourages breeding associations to:

"Reconsider breeding standards and amend any causing potential welfare problems. It would ensure, by educating breeders and judges, that breeding standards are interpreted so as to discourage

development of extreme characteristics (hypertype.) which can cause welfare problems. In other words, it is up to breeders to curb, and even to reverse, the excesses of ultra-typing before matters are taken out of their hands by European legislation."

In "Some Practical Solutions to Welfare Problems in Dog Breeding", P D McGreevy and F W Nicholas of the Department of Animal Science, University of Sydney suggest ethical breeding practices for dogs. In the abstract of the paper, they state "Some breed standards and selection practices run counter to the welfare interests of dogs, to the extent that some breeds are characterized by traits that may be difficult to defend on welfare grounds. Meanwhile, little selection pressure seems to be exerted on some traits that would improve animal welfare and produce dogs better suited to modern society." "There are several constructive ways to overcome these challenges. Breed associations can ensure that reduction of welfare problems is one of their major aims; they can review breed standards; they can embrace modern technology for animal identification and pedigree checking; they can allow the introduction of 'new' genetic material into closed studbooks; and they can encourage collaboration with geneticists in identifying and using DNA markers for the control of inherited disorders." Certainly dog breeding controls cannot and should not be applied across the board to other species, but I do feel that some of the recommendations may have application for the camelid species.

### North American Breeding Ethics

I am reluctant to align with the innumerable groups who portray Americans as greedy and self-serving, but in this case I believe the Europeans are acting in the best interest of the animals.

ALSA has carefully set standards for llama and alpaca conformation guidelines that perpetuate soundness in the species. In my opinion, our industry is best served when:

- judges adhere to strictly to those guidelines.
- breeders consider the soundness of

the species over novelty or income potential.

• buyers consider the long-term consequences of purchasing (and breeding) the latest "trends".

### References:

- 1 "Great Moments in Genetic Engineering" published by Ecoglobe
- 2 Novelty Breeds and Ultra-Cats: A Breed Too Far? By Sarah Hartwell, Copyright 1994-2003
- 3 The Greenberg Center for Skeletal Dysplasias (USA Miniature Horse website)
- 4 U.C. Davis School of Veterinary Medicine
- 5 "Unmasking the Fatal Flaw", Jack Moore, Equus Magazine; March 1993
- 6 "Twisty Cats and the Ethics of Breeding for Deformity" by Sarah Hartwell

### Biography of the author:

The first time Cheryl Cave saw a llama (outside a zoo) was in 1987 in Corvallis Oregon. While visiting Corvallis for bank software training, Cheryl was instantly drawn to a pasture of llamas owned by the Oregon State University veterinary program. From that moment, she was captivated.

Cheryl and husband, Tom, began researching the llama lifestyle, reading everything they could find and visiting llama farms across the country. In 1998 they purchased a home with acreage and bought their first two llamas. By the end of that year, their herd was up to twelve, and by 2002 the herd size exceeded 60. Cheryl became actively involved in many facets of llama care, shearing and consulting professionally. She often attended surgeries and procedures at the local veterinarian's office. In 2001 Cheryl traveled to Chili to select and import several Argentine llamas. She has enjoyed a great deal of success in the show ring, with a national champion and several ALSA hater champions to her credit.

Cheryl is currently writing a book intended for new llama owners. She also writes a column for an international software publication.



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