

Breeding Meat Goats

Function over form, or not? Part 1

Preface

By Dr. Frank Pinkerton

In December, *Goat Rancher* Editor Hankins sent me a link to a most interesting blog entitled, 100 Years of Breed "Improvement" (See box at right.)

The attached pictures depicted the results of deliberate selection of individuals within these breeds across time to meet the perceived notions of certain dog owners as to *correct form* (phenotype, conformation, looks, style, color, gait, etc.) apparently with little, or no, regard to possible adverse effects on *correct function* (health status, productivity, longevity).

These notions of acceptable form were then incorporated into various *Breed Standards* by Breed Association fiat, thus becoming the written description of the 'perfect' dog within a given breed. Concerned breeders strive for such designated perfection, and seek to demonstrate 'proof' of their efforts by engaging in Show Ring competition before Judges who arbitrarily decide who has the most nearly perfect dog — as defined, then and there (but subject to change over time).

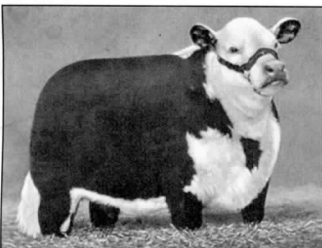
Introduction

Even a casual historical review of the U.S. livestock industry would find that dairy cattle, beef cattle, swine, sheep, and, yes, goat Associations followed, rather closely, the canine breed development pattern described above. Before-and-after pictorial comparisons would doubtless document the on-going evolution of phenotypic acceptability in these species (toward ever more desirable *form*). These progressive changes were invariably justified as steps taken to 'improve the breed'. Such improvements were mostly the *suppositions* of Association movers-and-shakers whose motivations and directions were seldom questioned and whose results and outcomes were seldom proven.

Improvements in animal *function*, in pursuit of increased productivity (and profitability), came only later as animal scientists and younger, perhaps better-educated Association members began to systematically measure animal output. Their intent was to *verify output*, by scale rather than by eyeball, and thus more reliably quantify the process of selection as between keepers and culls.

Such quantification leads to identification of, and improve-

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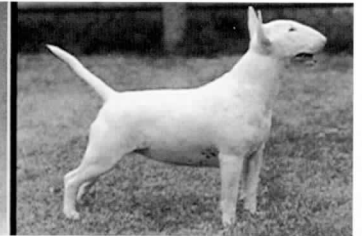
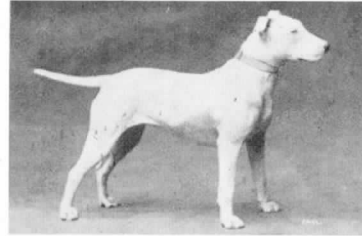


Body conformation of the Ideal Steer 1960 (left) and 1969 (right).

When it's all about the looks

By Mus Musculus, Ph.D.

The dogs on the left are from the 1915 book, *Breeds of All Nations* by W.E. Mason. The examples on the right are modern examples from multiple sources. To be able to make an honest comparison, I've chosen pictures with similar poses and in a couple of cases flipped the picture to get them both aligned in the same direction. (To see the complete article and more photographs, visit <http://dogbehaviorscience.wordpress.com/2012/09/29/100-years-of-breed-improvement/>)



Bull terrier — It seems incredible that at one time the Bull Terrier was a handsome, athletic dog. Somewhere along its journey to a mutated skull and thick abdomen the bull terrier also picked up a number of other maladies like super-numerary teeth and compulsive tail-chasing.



English bulldog — The English bulldog has come to symbolize all that is wrong with the dog fancy and not without good reason; they suffer from almost every possible disease. A 2004 survey by the Kennel Club found that they die at the median age of 6.25 years (n=180). There really is no such thing as a healthy bulldog. The bulldog's monstrous proportions make them virtually incapable of mating or birthing without medical intervention.



German Shepherd — This breed is routinely mentioned when people talk about ruined breeds; maybe because they used to be awesome. In *Dogs of All Nations*, the GSD is described as a medium-sized dog (25 kg /55 lb), this is a far cry from the angulated, barrel-chested, sloping back, ataxic, 85-pounders (38 kg) we are used to seeing in the conformation ring. There was a time when the GSD could clear a 2.5 meter (8.5 ft) wall, that time is long gone.

ment in, genetic quality of retained animals. In this scenario, functionality (performance) is simply worth more money than form (looks). It is this priority economic concern that should drive herd management decisions, *not rigid adherence* to the prose in one's Breed Standards.

Breed Standards are written by breed founders or their successors and may be altered by the Association as felt needs arise. Such Standards commonly describe a preferred phenotype, i.e., desirable morphometric traits (visually expressed, measurable) acceptable to a *majority* of the Association membership (at the time of writing). Animals lacking in one or more such traits may be denied registration papers or assigned a different status.

For a usefully revealing education, goat owners should read carefully the Breed Standards of their darlings and mark those traits describing acceptable *forms* in red. Then mark those traits describing acceptable *functions* in green. The relative size of the markings alone will focus the mind on what traits are economically important, *or not*.

This focus might even lead one to suspect (rightfully) that a number of economically desirable traits (reproductive efficiency, mothering ability, adaptability) *are in fact invisible* even to the most discerning eye.

There is a corollary point to be made here, to wit: Some Breed Associations don't have Show Ring activities or youth show activities, and some goats (Spanish and crossbred animals) are not 'pedigreed' and tracked by any Registry. Nevertheless, most owners of such animals commonly speak of individual goats as being 'good' or 'bad' or 'needing improvement' in this or that trait. In short, they, too, have a mental image (an unwritten Standard of a desirable goat — for retention or for sale, as the case may be).

Curiously, they tend to describe as 'desirable' those traits that contribute to 'the bottom line' (has twins or triplets every year, weans heavy kids every time, been here a long time, etc.). Sometimes it is an accolade by not-so-faint praise: She doesn't *look* so good, but she *does* good — this is a near perfect illustration of function-over-form thinking. I am always much encouraged by such analysis.

Additional observations on breeds/breeding by experienced and consenting adults

I sent this dog article to a number of friends who, on request, occasionally review my columns for accuracy and clarity. With their permission, I now *paraphrase* certain of their responses on form-versus-function issues in livestock improvement, as well as their thoughts on Show Ring animals as breeding stock and as industry trendsetters. I start with

Dr. Rick Machen, Texas A&M Area Livestock Extension Specialist-Uvalde (cattle, sheep, and goats) who says:

I was visiting with a Boer breeder recently who has been very successful in the Show and Sale Rings for 15 years. Gazing upon a set of young ET (embryo transfer) kids, he commented, “We have bred an animal that is not sustainable.” Without a doubt, the introduction of the Boer goat in 1993 has radically changed the goat meat production industry — both positively (better carcasses, higher ADG) and negatively. We have selected for a mature size/weight that is not sustainable in the environment in which goats have a comparative advantage over cattle and sheep. It now appears that emphasis in the Show Ring is headed the other direction, i.e., toward over-conditioned, smaller-framed stock (*FP: I call these latest Club wether versions wiener-goats ... extra long, tubular shaped bodies. Fellow Goat Rancher columnist Cathie Keblinger cautioned early-on that the sisters of such kids would not have the body depth to become productive mamas — that is, not have adequate space for high-fiber forage diets and a set of growing kids*).

The smaller, harder Spanish goats of yesteryear did not demonstrate the levels of unsound mouths, poor udder structure/conformation, and vulnerability to respiratory illness that are apparent in current range country Boers and Boer-cross goats today. (*FP: West Texas ranchers have not gone much, if any, beyond 50% Boer influence in crossbred herds because the harsh environment will not support optimum production from bigger goats requiring more inputs.*)

While feeding, fitting and showing livestock can provide an excellent venue for teaching young people valuable life skills, somehow during the last 40 years or so, the criteria for evaluating animals in the Show Ring has largely lost sight of the real world. For example:

Angoras: single trait selection for mohair, as encouraged by

the Wool and Mohair Act and abetted by Show Judges, has contributed to the demise of the breed. Had we also focused on structural soundness, muscle conformation and reproductive efficiency, we might still have significant numbers. (*FP: when mohair prices tanked, Australian Angora producers crossbred them with Boers to get an ugly but saleable/edible animal; we did not, and now we import their goat meat — how sharp was that?*).

Rambouillet: once a dual-purpose breed of sheep, the Show Ring today has all but eliminated consideration of wool production, and, paralleling beef cattle, we made them too big (to efficiently function in environments where they have a competitive advantage) and too straight in their hind leg and shoulder (decreases longevity).

Swine: introduction of the stress gene and selection for extreme muscling has removed functionality from too many of today's market swine 4-H projects and for ever-scarcer on-farm pork production units.

Breeding beef cattle: look at structural integrity in the Show Ring today; hock set and shoulder blade are mostly atrocious. Ask Show steer breeders how many heifermates to these steers would make productive cows. (See Keblinger above).

Dr. Ken Andries, currently Kentucky State University geneticist with goat research and extension experience, reports observations from his earlier beef cattle experience, to wit: in the 1970s and 1980s, the structural soundness and ability to survive and produce on forages were compromised to gain frame size in traditional breeds. Other useful breed characteristics were also lost during this time, e.g., market steers lost ability to finish and could not make grade on the rail, and there was also insufficient body depth to allow a heifer to become a cow that could sustain herself on forage-only while carrying a calf. In today's beef industry, most Show herds are not considered practical for use in commercial production animals.

I often refer in presentations to the Ideal Beef Memo of November 1983 and its Cow Production Philosophy listings. It keeps me ever mindful of industry truths (first on the list was: a cull is a cull no matter what its papers say and, secondly, the ugly cow is the best producer — otherwise, you would sell her. (*FP: one cannot better state the case for function over form in selection of keepers—in goats, as well as cows*).

Currently, some in the beef industry are blaming genetic selection tools (such as EPDs) for unwanted, oversized cattle. Tools don't dictate actions; owners and Associations do. Too, producers of cattle and goats should recognize there are appreciable differences between **maximum** output and **optimum** output in pursuit of better enterprise cost-benefit ratios. Bigger is *not* always better. (*FP: Holstein folks ever seeking maximum output have pushed cow sizes to 1800 lb or more to get 20,000 lb or more milk/lactation, but they also got the unintended con-*

sequence of bad feet issues that sharply limit longevity — cripples have none).

I have said that unintended consequences may be happening in the meat goat industry as well, especially in the Eastern U.S., where the line between Show animals and production animals is narrow. The Boer goat is an example of how selection for Show winners can diminish a breed's utility and productivity. Early arrivals and their progeny were culled lightly, if at all, and very few purebred Boer herds have ever been performance-tested (*FP: I think this lack of concern for productivity began with \$30,000 Boers whose owners did whatever was necessary to promote, first, survival — and, secondly, earliest possible sales to those aspiring to join the gambling fest ... been there, done that myself ... two crops and out, but the richer for it*).

Thus, I caution that the high prices for fullblood Savannas could lead to lesser culling rates and reduced genetic quality (productivity). The same may be said of

some Kikos that are higher-priced primarily because they demonstrate 'worm resistance'. Neither of these breeds have Show activities; accordingly, any reduced productivity must be blamed, correctly, on inadequate culling rates (poor management). I also see among the Spanish breed individuals with great variation in phenotypic and genetic traits whose performance largely reflects site-specific eye-ball management decisions.

We geneticists know from long observation that selecting animals based on a single targeted trait, or two, without consideration as to how the animals will function in their production environment, can lead to disaster for individual animals and eventually for the breed. Only more performance data leading to more logical culling will enable individual and breed survival. (*FP: More on this in Part II of this article*).

From Brian Payne, early Canadian importer of Boers and, later, Savannas and

activist in Canadian Government-sponsored actions and promotions:

Frank, we need to address this issue of form over function before we breed ourselves out of a business. Our primary *business objective* as breeders/managers should be profitable goat *meat* production, and goat herds must fit their environment to enable this. I am less concerned about developing an *ideal goat* than I am about selecting for function over form within, and between, existing breeds of goats, and crossbreds.


My rationale for this concern is that does are individual profit-centers, and does that wean at least their weight in kids, ever year, for many years, are, by my definition, the *economically ideal goat*.

Hardly anything else counts, not breed, not hair color, not esthetically pleasing appearance. One should look at the number of kid carcasses (all pink) on the rail/doe or/herd to assess one's management reality. (*FP: These comments pertain only to commercial slaughter goat production. The world of Show goats and 4-H project goats is, in fact, a separate entity with distinctly different enterprise objectives, management practices and sales strategies from the commercial goat world. Except in rare circumstance, these worlds are comingled only at peril to both enterprises*).

Twenty years ago Spanish goats in Texas and brush goats in the Southeastern U.S. were the only meat goats. They were valued for their low input costs relative to their output value and were also well regarded for their contribution to weed and brush control in mixed-specie grazing systems. After the introduction of the Boer goat, specialized, more intensive production with this novel goat resulted in higher input costs as new enterprises moved out of the brush onto cultivated pastures.

Many new producers expected profitability from these specialized operations, so a new industry norm developed, i.e., higher income from high-priced seedstock. But again, unexpected consequences intervened (reduced predation was good, but increased parasitism with more grazing and less browsing on improved pastures was bad).

While no one can rationally blame Boer goats or the Show Ring for all the challenges that face this new generation of owners and breeders, embryo transplant programs did facilitate the multiplication of Show Ring-dictated beauty queens and kings, neither of which was ever subjected to serious performance evaluation. Form reigned over function, then and now, and it takes a nervy owner indeed to put blue-ribbon winners into com-



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Capacity 20 Gallons
• Liftoff tank easy to clean and floor access
• 14" vertical headroom
• 6-4.5" drink openings
• 3/4" drain plug


*Ships via UPS
20 lbs. ship wt.*


Length-26"
Width-14"
Height-22.5"
Drinker height 3"

**GALVANIZED STEEL
MODEL GPW-1**
10-1/2" x 10-1/2" x 3-1/2"
(26.67 cm x 26.67 cm x 8.89 cm)



**GALVANIZED STEEL
MODEL GPW-2**
25" x 13" x 4-1/4"
(63.5 cm x 33 cm x 10.8 cm)






MODEL KPD-85
Capacity 85 Gallons
Base Dia. 34.5
Tank Dia. 32"
Height 35.8"


*Ships via UPS 2 pkgs = 58lbs.
1-pkg 36 lb.
1-pkg 22 lb.*

2-drinker spaces
8"-drinker height
15"-drinker opening Height
13"-drinker opening Width
8"-drinker opening Depth


Anchors by:
4-notched flanges
2"-drain in each drinker space



MODEL PPW-1
10-1/2" x 10-1/2" x 3-1/2"
(26.67 cm x 26.67 cm x 8.89 cm)



**POLY PAN WATERER
MODEL PPW-2**
25" x 13" x 4-1/4"
(63.5 cm x 33 cm x 10.8 cm)



MODEL KTW-50
Capacity-50 Gallons
Length-51" (129.54 cm)
Width-28" (71.1 cm)
Height-12" (30.5 cm)
Weight-16 lbs. (7.3 cm)

mercial goat production units.

I suggest that if we are going to develop effective industry leadership and practices, we need to look beyond the bias of breed. All Breed Associations have been reluctant to admit that the sustainability of their purebred industry is largely dependent on sustained profitability of *commercial* goat meat-producing herds. (FP: *Perhaps so, but as long as there are sufficient numbers of novices wanting to get into the purebred and Show games, there will be those that will take their money and urge them on to ever darker ribbons. I reiterate, this is a separate component of the goat industry as a whole; players do not have to subscribe closely to notions of on-farm economic productivity — and so they don't.*)

I call attention to our Australian competition where political and livestock industry leadership created, in the mid-1990s, a national presence with the Goat Industry Council of Australia for consultative purposes relating to research, production and marketing of goat meat. It is also involved with exporters, processors, and retail organizations. Neither Canada nor the U.S. has such a functioning body. Perhaps if we did, we could achieve an industry focus on goats as a species and as profit-centers, rather than as breeds, and thereafter objectively pursue

goat meat production at a profit.

(FP: *Part II will explain how the U.S. dairy goat industry focuses on profitable milk production —function — supplemented with a focus on 'type evaluation'—form.*)

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tired extension goat specialist living in Martindale, Texas. He can be contacted at 512-357-2534 or by e-mail at fpinkerton@austin.rr.com. His book, A Compilation of the Wit and Wisdom of the Goat Man, is available for purchase at www.goat-trancher.com.)



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