

A Quick History of the New World Camelid

By Eric Hoffman

One of the stranger facts about the six species of living camelids (vicuñas, guanacos, llamas, alpacas, Bactrian and dromedary camels) is that despite their significant size and shape differences they all possess the same number of chromosomes. In fact, a live birth between a dromedary camel and guanaco has occurred through artificial means. All of the South American camelid species can breed one another and produce fertile offspring.

The camel family (Camelidae) originated on North America southern Great Plains more than 12 million years before it died out about 12,000 years ago. But, long before it disappeared from this continent, a large lanky camelid named *Hemiauchenia* had migrated to South America and Central Asia about 3 million years ago. This creature is the progenitor of both the large camels of



northern Africa (one-humped Dromedary camel) and central Asia (two-humped Bactrian camel). It also is the progenitor of the new world genera, the Lama (guanaco) and Vicugna (vicuña), which became distinct species about a million years ago. These two wild forms began occupying their present ranges about 12,000 years ago. The delicate, graceful vicuña is found in the high Andes and prefers an alpine environment. The guanaco, is found in a wider range of environments, from desert to high mountains, lush forests, and coastal areas.

Both animals have similar long-legged, long-necked bodies with tawny brown coats with a white underbelly and possess fine, soft fleece. Both are two-coated, but the guanaco is llama-sized and the vicuña is alpaca-sized. The vicuña's fleece range is 12 to 15 microns with about 65% of the fleece used in processing. The guanaco

ranges between 15 and 23 microns with varying amounts of guard hair. Vicuñas produce the finest, most sought after fleece in the world which sells for about \$600 a kilogram. It will surprise North American domestic camelid owners to learn guanaco comes in second among camelids for price, at about \$400 a kilogram for dehaired fleece. The downside is that a vicuña only produces about 300 grams per shearing (every two years) and a guanaco produces between 400 and 750 grams. Vicuña is also an endangered species making it illegal to own or transport, as is the northern subspecies of guanaco.

Work by Jane Wheeler PhD and others has proven vicuñas are the wild progenitor of the alpaca (*Vicugna pacos*) and guanacos are the wild progenitor of the llama (*Lama glama*). Both of the



An intricately woven and dyed tunic worn by an Incan official (circa 1530). Among the Incas, clothing announced a person's position and social class.

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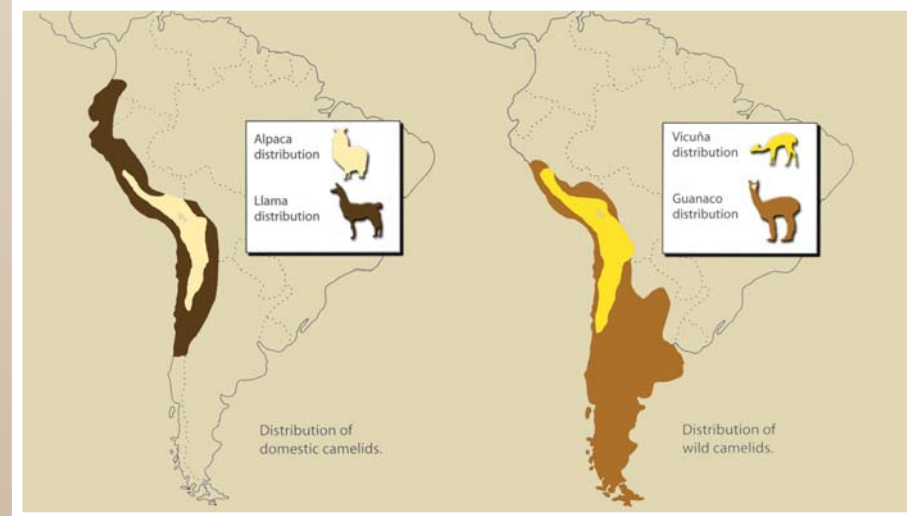
domestic forms were created through selective breeding practices begun 6500 years ago. Work by Dr. Wheeler has also proven the pre-hispanic domestic camelids had been successfully bred for very low variability fine fleeces. In fact, Wheeler discovered mummified remains with micron counts as low as 17.9 with a standard deviation of 1.0, which is better than alpacas living today.

When the Spanish arrived in the Andes in 1532 they found one of the greatest animal husbandry programs ever created. Advanced civilizations whose economy was built around Andean pastoralism (raising llamas and alpacas) had existed for centuries, culminating in the Incas. The vast Inca herds of domestic camelids filled the valleys the length of the Andes, numbering more than 20,000,000 animals. The

Spanish accounts talk of warehouses full of colored cloth, state run towns dedicated to weaving, and the refined garments worn by the Incas. To the Incas status and wealth was in cloth, most of it coming from the alpaca. There were numerous words for various qualities of cloth. The Inca court counted its wealth in cloth. Armies were paid in cloth. Retreating armies burned warehouse full of cloth rather than have an enemy have it. A herding class, known as *llama michis*, was responsible for the vast herds. Garments were so refined that an individual's role in society was advertised by the intricate patterns on the tunic he or she wore. Animal breeding and refined fabric was the passion of the Incas every bit as much as their remarkable stone work found in ruins like Machu Picchu.

1532, the date of the Spanish Conquest, marked the decline of Andean pastoralism. Ninety percent of the domestic camelids, and the natives who took care of them, disappeared within decades of the Conquest. With them went the husbandry system. The crash in population was one of several genetic bottlenecks experienced by the surviving domestic camelids. A second well-documented bottleneck occurred in alpacas about the time the first exports left from South America to North America in the 1990s. This bottleneck was caused by the large fiber mills paying more for white fiber causing the herders to cull in favor of white and light fawn animals. The herders selling fiber to the large mills changed from 70 colored fleeces to 70 percent light colors in less than decade.

As camelid owners we have inherited 7000 years of animal breeding from people whose way of life was swept away before it was understood. The ancient pastoralists gave the world a fascinating and remarkable legacy in the form of a pair of domestic animals: the alpaca and the llama.



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