Changes in North American animal husbandry from the 17th century to the present: an exploration of potential effects on leather quality

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Part of ongoing research by the Leather Discussion Group, formed in 2016 by book conservators interested in acquiring a better understanding of leather and leather dyestuffs with the goal of conveying conservation needs to leather manufacturers.

Introduction

This poster will explore the evolution of North American animal husbandry from the 17th century to the present and the potential impact of breed choices, diet regimens, environmental conditions, and abattoir trends on leather quality.

Breed Specialization

Domestic cows, sheep, goats, and swine are not native to the Americas. Livestock imported from Spain in the 1500s naturalized and are now considered ‘landrace’ breeds, well suited to native forage options and local climate.

Colonists also imported livestock from Europe in the 17th century. These multi-purpose animals were often used for craft, milk and ultimately meat.

Specialized breeds, inspired by British agriculturalist Robert Bakewell, weren’t widely utilized in America until the 19th century.

Environment & Diet

In the southern colonies, farmers typically practiced open woodland husbandry, allowing cattle, pigs, and horses to roam freely, foraging in the woods, marshes, or other open land. Herbivores had access to a variety of grasses, saplings, and roots. Colonists built fences to keep livestock out of fields, especially their primary crops of corn and tobacco.

Many farmland pasture plants in America were introduced from overseas and are now naturalized. They initially arrived in the animals’ guts, but later some were intentionally sown when native plants were considered insufficient forage or ‘specialized breeds’.

Some Plants Introduced to North America by Colonists

Grasses
- Early hairgrass (ara praeox)
- Velvet grass (holcus lanatus)
- Perennial ryegrass (lomus perenne)
- Timothy-grass (phleum pratense)
- Canada bluegrass (poa compressa)
- Annual bluegrass (poa annua)
- Kentucky Bluegrass (poa pratensis)
- Quackgrass (syripgia repens)

Horse/Weeds
- Burdock (arctium spp.)
- Wormwood (artemisia vulgaris)
- Dandelion (taraxacum officinale)
- Sow thistles (sowthich spp.)
- Yellow Toadflax (linaria vulgaris)
- Red & White Clover ( trifolium repens)

A salted skin awaits transfer to the tanner. Photo by author.

Conclusions & Further Research

Modern breeds are more specialized, or engineered, than traditional ones. The transition from a pastured, woodland diet to feeding livestock supplemental grains for ‘fattening’ has an observed impact on animals’ muscle quality. Does it also impact the skin? Changes in the butchering and tanning process may affect the long-term preservation of the hide. How do bacteria, metals, or even the wrong type of salt introduced in processing and storage affect hide preservation?

Research into these questions is underway with a comparative analysis of historic bookbinding leather as well as raw skin and leather from traditional and modern breeds with known diets. Testing includes organoleptic evaluation, protein identification, sulfur quantification, consolidant identification, tannin classification, and identification of tanning and dye compounds.

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