

On Tuesday, April 9, 2019, 7:04:54 PM EDT, ADRIENNE CARD

<pumpknxoxo@aol.com> wrote:

Mules are the offspring of a donkey (male-jack) and a horse (female-mare). As horses and donkeys have a different number of chromosomes, 64 and 62 respectively, if they do conceive a mule when breeding, the mule is typically sterile, has 63 chromosomes, and can not have its own offspring. Mules are popular as they do not have the high strung nature of a horse, and are less obstinate than a donkey. Therefore, to have a population of mules, you have to have a population of male donkeys and female horses. You can also get a hinny from a female donkey (jenny) that is bred to a stallion (male horse). However, with livestock, for millennia population control has just been exhibited by castration of the male (popular in cattle, horses, sheep, and goats). This is for a variety of reasons...male castration is an external procedure and can be generally done by an inexperienced hand on the homestead, and has been practiced for centuries. The reason you would castrate would be behavior, stallions, and bulls are more difficult to handle, and when producing a food animal can produce off flavors in the final product. Therefore, in most populations, mules are far more common and likely to occur than hinny's as there is always a larger population of mares than stallions. Also mules are bigger due to their gestation inside a larger animals, hinnys are smaller and therefore can usually pull smaller loads.

Foundering, or laminitis, is something that can occur when an equine species eats too much rich grass. It affects their hooves, and ultimately can end in the death of an animal when the laminae of their foot is inflamed. Compared to other parts of our country, we have much more rich grass and green grass. This increases the chance of a donkey foundering, and decreases the chance of people keeping donkeys in our region. It is still an issue in horses, but they are less prone to grass foundering than donkeys. Donkeys have origins in more desert climates than horses, and are not as evolutionary evolved to handle the sugars of the grasses of the northeast United States. By comparison cows and ruminants have a 4 chamber stomach and cannot founder on grass. There is no grass that is too rich essentially for a cow, and while they can founder it happens from too much grain, not the grass in a field. In addition to that, castration of a cow from a bull to a steer, will cause the animal to get bigger. This is why the oxen you see are so much bigger than a bull.

Oxen

"On November 21 of that year [1799] a raft of 320 tons of timber was drawn from Chelmsford to Billerica, by a pair of oxen, in 6 hours and 16 minutes."

Lewis M. Lawrence, *The Middlesex Canal*, Boston, 1942, p. 26. Typescript, Baker Library, Harvard University, Permalink: <http://id.lib.harvard.edu/aleph/005306655/catalog>
Lawrence cited the Baldwin Manuscripts in the Baker Library.

Two yokes of oxen and a horse leader

Strung together this long line of "shots," extending from the locks down the canal sometimes quite a distance below the sluice-way east of Stedman Street, would be taken in tow by Col. Bowers or his sons Alpheus or Sewall, with their two yokes of fine oxen, and a horse leader, and slowly but surely delivered in Medford or Charlestown.

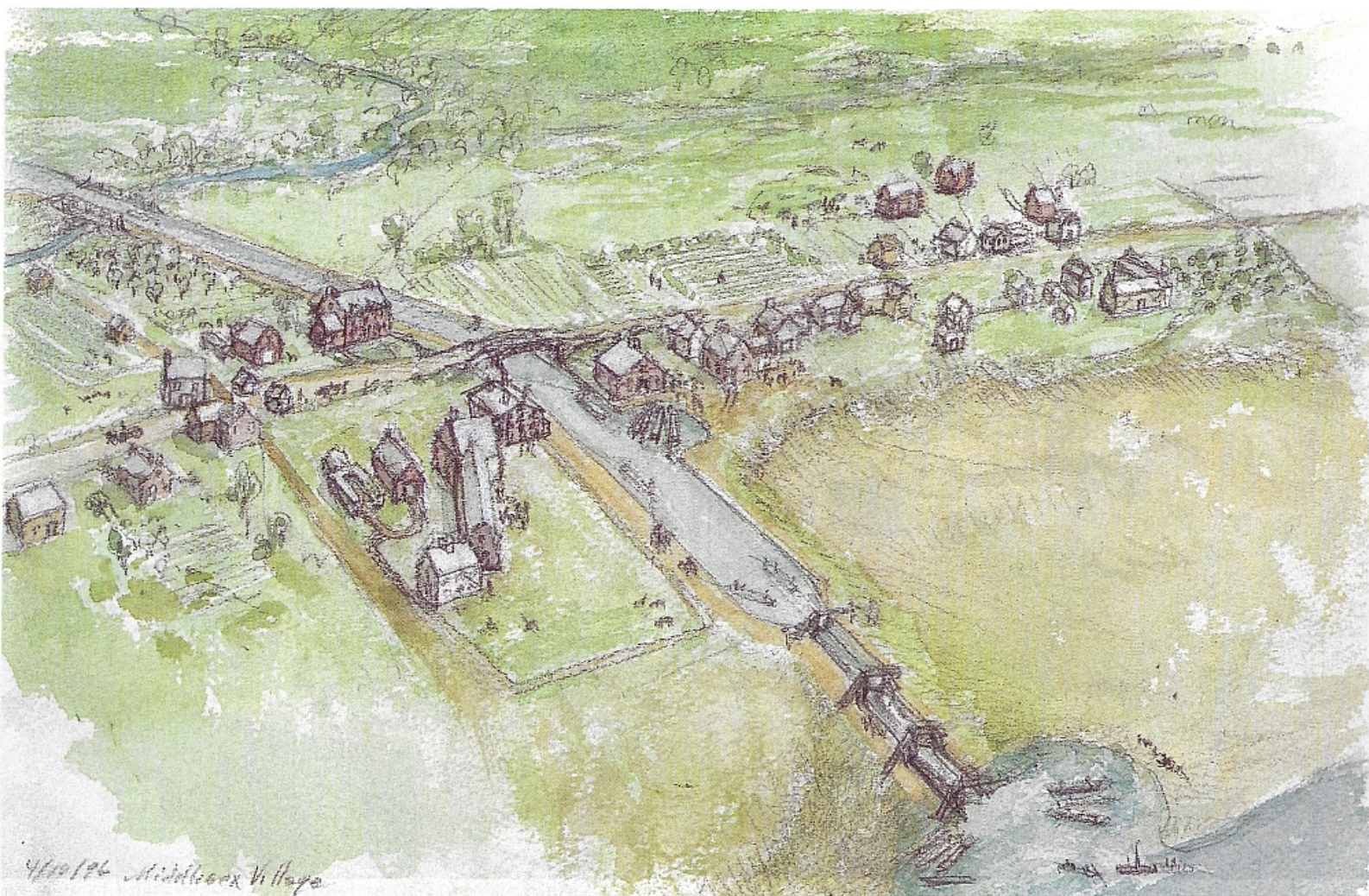
Samuel P. Hadley, "Boyhood Reminiscences of Middlesex Village", Contributions of the Lowell Historical Society, 1911, Vol. 1, No. 2, p. 242. In Internet Archive,

<https://archive.org/details/contributionsof100lowe/page/180/mode/1up?view=theater>

First page of "Middlesex Reminiscences", page 180 of 490, single page view.

Two yokes of oxen, page 234 of 490.

Horses are described in Wayne R. Peters, *This Enchanted Land: Middlesex Village*. Lowell: Martin Publishing Company, 1984.



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Middlesex Village, c1830, Dahill, 1996.