Chondrodysplasia Yesterday and Today

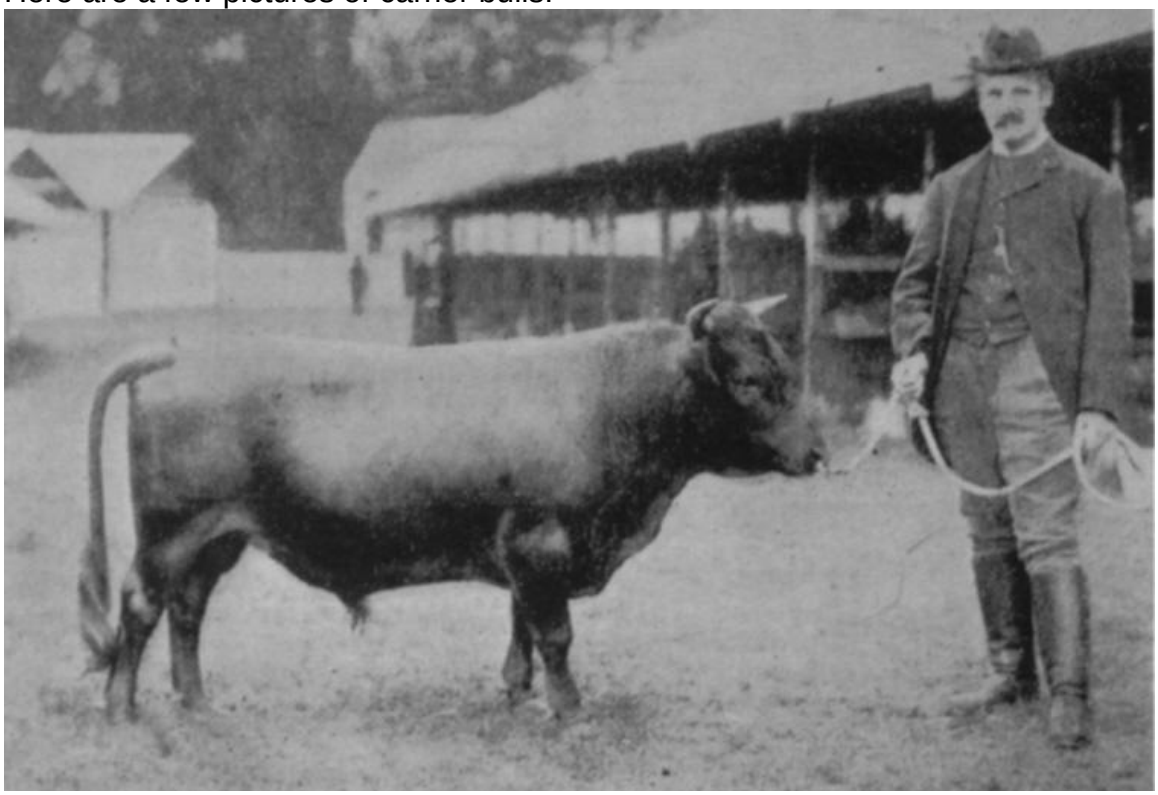
Historically, the Dexter breed was established, by choosing the smallest of the native Irish cattle as a breeding group, purportedly by a Mr. 'Dexter', who was the Irish agent for an English Lord. By the late 1800's the breed had made it into England and became so well established that the formation of the Dexter/Kerry cattle society happened. Still breeders were choosing the smallest calves that were born in the herd, over the 'other' calves that were taller and leggier. It must have been an accepted fact that along with the 'long legged' cattle produced, the occasional aborted 'bull dog calf' would also be produced by these little cows. Dexters were being chosen for stature and in hindsight, that small stature was most probably an indicator that they were Chondrodysplasia carriers.

Chondrodysplasia is a dominant (can be seen in the phenotype) lethal mutation. It affects the skeletal bone growth of a carrier, making the animal appear smaller than they would be if they didn't carry the gene. A study done in Australia, found the difference in the height of non-carrier cows to be around 5" taller than that of their carrier counterparts. This height difference is even more in bulls, around 8".

Because every carrier carries one copy of the mutated gene and one copy of the normal gene, mating two carriers, bull and dam will produce statistically 50% short legs, or carriers, 25% long legs or non carriers and 25% Bulldog or unviable calves. If a calf inherits one copy of this gene from each parent, it will be unviable and either aborted early in gestation or around 7 – 8 months, when it would appear as a misshapen bloated body on very small legs with a bulldog like head. It is always born dead, which is why the mutation is considered 'lethal'. These are statistics though and vary as soon as they are lifted off the paper. The practice of breeding carrier to carrier, had a different experience one year for Beryl Rytherford, who writes "*One autumn I had six calving heifers and five of them produced bulldog calves. I rocked back on my heels. I had never thought it a big problem. Like everybody else, I accepted that I would lose one or two calves, but five out of six, was a big financial loss…… "*

Now we understand that this grief never needs to happen. While breeding two non-carrier animals will result in 100% non-carrier calves, if you choose to breed for carrier animals, you can do this without ever experiencing an unviable calf. Breeding a carrier to a non-carrier will never result in a bulldog calf, but rather 50% of your herd will be carriers and 50% will be taller and non-carriers. Now there is a genetic test, just tail hairs from the switch of the animal, will tell you if your cow or bull is a non-carrier, (HN) or a carrier of the chondro gene (HC). Today we can choose to breed with or without the chondro gene and we have the tools available to do it!

Here are a few pictures of carrier bulls:



Historical bull, Simple Simon copied from www.dex-info.net

Mar Nell's Black Magic, copied with the generous permission of Sandy Thomas of Thomas Dexters

And here are a couple of very small cows who where genetically tested HN or chondrodysplasia free:

Burfoot Leila

Eliden Reannagh at milking time!

Both cows are 40” tall at the hip.

Photo of a bulldog calf, taken by Duncan McIntyre, Scottish Dexter breeder, 1977

References:

http://www.dextercattle.org/

“My Love Affair with the Dexter”, Beryl Rutherford, Triple D Books, 2004

http://dex-info.blogspot.com/2009/01/2c-photos-of-bulldog-calf-warning-not.html