The Quest to Conserve Rare Breeds

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The Rare Breeds Survival Trust does exactly what its name says it does: looks out for the survival of rare breeds of livestock. Cattle and sheep, horses and pigs, but also goats and all sorts of poultry.

Lawrence Alderson founded the Rare Breeds Survival Trust in 1973, and it was the first formal organisation in the world dedicated to the conservation of farm breeds. In a way, it was a happy accident.

Lawrence Alderson grew up on what he calls "an impoverished little hill farm in the northern Pennines". The land is high, with rough grazing that is rich in biodiversity. Livestock—mostly cattle and sheep—have to be tough and hardy to thrive on that kind of fodder, not to mention the cold winters. Selecting the animals that did well created local breeds. And among them were the Swaledale sheep the Northern Dairy Shorthorn cattle that the Aldersons raised.

Lawrence Alderson left the farm and went to university, where he studied genetics. And he came to realise something about those sheep and cattle breeds.

Lawrence Alderson: At the time, they were just the breeds we had along with Swaledale sheep and Teesdale sheep. Afterward, when I got to university and when I came out of university, then you realize that what you had, in fact, was precious heritage breeds. It's rather like living in a beautiful place like Teesdale, where I lived, and not appreciating that High Force is the biggest waterfall in England or anything else. It was just there.

Jeremy: [laughs] These breeds that you mentioned, they were how you farmed?

Lawrence Alderson: Absolutely, yes.

Jeremy: What is it that makes up a rare breed? Is there actually a definition of a rare breed or a heritage breed?

Lawrence Alderson: Yes, I wrote it.

[laughter]

This is one of the first things that we did right way back when I founded the Rare Breeds Survival Trust in England. First things were to define what a rare breed is. How it's an endangered breed. Then to set out the protocols as to how to deal with that problem. That was one of the very early tasks. It was numerical, if it got very low in numbers, obviously.

Also, we added then things like geographical endemism, where it's concentrated in a very small area. Therefore, it's endangered, even though it might be high in numbers. Then, again, genetic erosion. If there's too much loss of the genetics of the founder population because it's concentrated in a few animals, then again, you have another factor which can seriously endanger a breed.

Jeremy: The other thing that's intriguing is, my amateur reading of animal breeding is that, in the 17th, 18th century, yes, there were people improving their local animals. How far back can you trace these breeds?

Lawrence Alderson: [laughs] Make sure to go all the way. I breed White Park cattle. We can trace those back in Britain for 2000 years, which is more than any other breed can. We can trace it back further. I did some research with a German professor. We've traced one of my cow families back to a cow 10,000 years ago in the Middle East. She has exactly the same haplotypes that have come down. We can trace the path of that haplotype through Southern Turkey, to Northern Italy, and right back up to my cow in this country.

Jeremy: Wait a minute. Let's back up a minute. What is a haplotype?

Lawrence Alderson: A haplotype is a very small fraction of the variation that you find in a gene, one of the variations. If you find a particular small genetic variation, it's then unique. You know if you could find it elsewhere, you could trace the relative or that descendants of that particular animal right through.

Jeremy: You found one of your cattle has an ancestor 10,000 years ago?

Lawrence Alderson: Absolutely.

Jeremy: In a sense, I have an ancestor millions of years ago because we're all connected by descent. I'm a little puzzled about, if you saw

that ancestor 10,000 years ago, you wouldn't know it was a White Park cow. Would you?

Lawrence Alderson: It wouldn't even be white.

Jeremy: Exactly. In what sense is the White Park … Yes, it has an ancestor, but when did it become a White Park cow?

Lawrence Alderson: Absolutely. That's the question. Every animal in this country or any country can go back that length of time. It's just that we have demonstrated with a particular genetic material that we can go back that far. It probably didn't become White Park until, at some stage on its journey, that particular genetic color variation, which is quite a complex, unique one, somehow came in. I suspect it was somewhere in Italy and from then on, that color became recognizable.

When you come to this country, it's fascinating because if I look at the White Park breed, there's a herd up in Scotland, and there's a herd in Wales, for example. They have the same haplotype even though there's no apparent connection nationally between them. It's quite a carefully monitored relationship.

Jeremy: Sticking with the White Park, what do they look like? Well, obviously they're white, but what distinguishes them from, I don't know, a white cow here, a Maremma or something? What do they look like?

Lawrence Alderson: They're porcelain white, not gray white for a start. They have black points, usually. Sometimes red points. Black points. In other words, a black nose, black muzzle, black ears, black eyes—beautiful mascara, just the rims—black feet and black teats in the cows, but the tail is totally white, all the way. That distinguishes them from … you mentioned the Maremma. The Maremma has got a black tail. That's just appearance.

Of course, their real value is in their ability to convert low quality herbage into high-quality meat. You must not forget that in 1617, King James the First so enjoyed a loin of White Park beef after he'd been hunting that he knighted it. He dubbed it sirloin.

Jeremy: That always seemed to me to be one of those slightly fanciful stories about the origins of food. It's true and documented?

Lawrence Alderson: The folly of misbelief, Jeremy [laughs]. Yes, it is recorded, not just in my books that I've written, but it is recorded in other books further back as well. Yes.

Jeremy: Specifically, it was a White Park breed that gave … ?

Lawrence Alderson: Yes. It was specifically because it was in a herd on a place called Hoghton Towers, which is now near Preston in Lancashire. That's exactly where it took place.

Jeremy: As far as you're concerned, is that fine eating quality … You mentioned the ability to convert rough grassland into fine eating quality. Is that the primary reason to conserve rare breeds?

Lawrence Alderson: Well, no. The primary reason for me is because it's a heritage breed. It is part of British heritage. In the beginning of World War II, Winston Churchill thought it was such an important part of British heritage that he sent some White Park cattle to Canada to save them in case we were invaded.

Jeremy: Really.

Lawrence Alderson: The heritage factor is hugely important. Looking into the future, for example, I believe that we're planting trees all over the place, which we shouldn't be. We should be conserving upland grazing because that's good for biodiversity, good for stopping land degradation, all other sorts of things. That's where White Park cattle are at their best. They're converting that rough herbage into high-quality meat. The quality meat is based on things like flavour, marbling, and all those other things. It's got a very wide range of importance as a breed.

Jeremy: There are lots and lots of other breeds and I know you're concerned [chuckles] with almost all of them. Can you generalize about, what is the threat to these rare and heritage breeds?

Lawrence Alderson: First of all, in global warming, we have this concept that we've got to plant trees everywhere, which I fundamentally don't object to planting trees, but I think we have to recognize the limitations. Especially if it's planted over grassland where these breeds graze, where to which they're best adapted, that is a danger. There's still the danger that the commercial side of

livestock farming seems to consider that if something's local and rare, it's not functional, it's not commercial.

That I think we'll find is wrong, because intensive breeds, of course, require intensive inputs. The further we go down the line, the more we've got to feed people and grow crops to feed people direct, the more the grassland will be found in the uplands, not in the rich cultivated land. Again, we need these breeds, which currently are being pushed out by the popular commercial breeds by Holstein Friesian dairy cattle, by Charolais beef cattle, et cetera.

Jeremy: Just to think about the intensive breeds. Certainly, we have seen Holstein Friesians, black and white cows, covering the planet, almost. The argument is always, "Well, they're more efficient."

Lawrence Alderson: They are more intensive [efficient] in their particular environment. That is exactly as you say. If we can fill them full of high energy feed, they will make, high production, high lactation yield. The problem is that the more the human population grows, the more of the land is needed to feed direct to humans not to go through an animal. The areas of land best suited to those intensive breeds will disappear.

Livestock farming will move much more to the non-cultivatable areas. In that sense, they're inefficient. That's quite apart from the fact that they're more prone to disease. The fact that they only live for one and a half lactations, instead of the old thing of living for 10 lactations. Efficiency has got to be related to what the resources are. Those resources are going to change.

Jeremy: One of the things I've read about these intensive breeds is that very often, they're actually not very genetically distinct. One bull with artificial insemination sires so many progeny that, at least, as far as his genetics are concerned, there's almost no variation among all the cattle around. Is that really a problem, do you think?

Lawrence Alderson: It's certainly an acute danger. In Holsteins, we've just been talking about Holsteins. In the Holsteins, there are only two male lines left alive. If you trace directly down the male line, there are only two lines. Quite recently, one of those lines was found to transmit a defect which caused abortion in the cows. That is what I call genetic danger. That's in a breed that's found all over the world.

Jeremy: Aren't the Holstein breeders aware of this? If one of the two bulls whose lines is represented causes abortion in cattle, aren't they trying to get rid of that or deal with it?

Lawrence Alderson: Oh, yes, yes, absolutely. With a huge population like the Holstein you can probably do testing to do it. You can identify the gene. Then you can test the females or the males to see if they carry the gene, and try and go around, circumvent the problem. That doesn't alter the fact that your genetics are suffering while you eliminate all these things. I'm not talking about peanuts here. This particular bull that I'm talking about, I think had 3 million progeny in the first two generations.

In the research, they found half a million female descendants that had to abort. It's a big problem. That would apply to anything which has a single factor objective. If you're just selecting for lactation yield, then it's a single factor. Once you do that, you're taking the whole breed down a very narrow channel.

Jeremy: The alternative which is what you were doing on the farm when you grew up, which is Northern Shorthorn dairy cattle. Are they dual purpose? Do you get beef as well?

Lawrence Alderson: Yes.

Jeremy: Basically, they're generalists and are able to do well, more or less, whatever you do with them so long as you look after them?

Lawrence Alderson: Yes, the Northern Dairy Shorthorn is actually a very good example of what you're saying. They don't yield as much as the Holstein by any manner of means. They do it on a very much lower input system. A poor old Pennine farm is not going to produce the lush grass that a Holstein would need or indeed the concentrate feed which is poured in after it. They thrive on this hill herbage if I can put it that way. They're also are dual purpose. Yes, you get a good beef carcass when you're finished.

I think one of the really interesting things just at present is that there are up in the Pennines, a couple of people that I know of, who have deliberately started new herds of Northern Dairy Shorthorns, keeping them in the way that we used to keep them when I was a boy, which is a long time ago now. They're using their adaptation to the Pennine environment, to the low input systems. Then they're

producing specialty product like cheese, for example, as we used to back then.

I can see that returning much more. It's just a matter of keeping these endangered breeds alive, enabling them to survive until enough people realize—including governmental bodies—realize that we are going in that direction and that they are going to be very necessary.

Jeremy: Talking about governmental bodies. Does the fact that the UK is now out of the European Union, does that offer opportunities for a different direction for agricultural subsidies?

Lawrence Alderson: Yes, absolutely. Certainly, the statements that have been made, if we believe them, would point us in definitely a different direction. First of all, they would divert subsidies by capping them so that huge sums wouldn't go just for owning a lot of land. It would go to owners or farmers who keep their animals and keep their land in a way that is beneficial. Beneficial can be interpreted in many ways. For me, it's sustainability and efficiency.

I think that that will help. We've also, in the latest agriculture bill, there were interesting phrases regarding genetic resources, and other words that we in the rare breeds world understand, which gave me encouragement that, in fact, government is moving in the right direction. I know that the current Secretary of State for the Environment understands very acutely the importance and need for locally adapted breeds. He has been involved with his family in that area.

Jeremy: That's interesting that this could be something good to come out of Brexit.

Lawrence Alderson: Yes. If it's played the right way, there is the opportunity. I would stress that the maintenance and better use of non-cultivatable grassland is part of the answer to the whole thing. It's part of the solution. If it's just planted with trees, as several people are advocating at present, we've lost that opportunity.

Jeremy: We've talked a lot about the UK, about the Pennines and England, really. How much of a global problem is this?

Lawrence Alderson: It is a hugely important thing. If you think that, in many parts of Africa, if we look at that, animals from our

developed Western world, as we call it, have been donated to Africa. I tend to use the word dumped, not donated, have been dumped on Africa on the basis that they have a higher yield, which is what we've just been talking about. The farmers in Africa accept these gifts, if that's what they are, they replace the native stock.

The native stock goes. The imported, exotic animals are not suited to the environment. They last a very short period of time. By the time it's been realized, that they don't function efficiently and probably don't even live, it's too late because the native ones have been replaced and gone. That is, again, it's a part political problem but it's something that happens. Like a lot of things, unless we realize these truths quickly enough, it may be too late.

Jeremy: When you say donated or dumped, do you mean by development agencies, big time, or do you mean the little kind of charitable donate a heifer, send a goat, whatever it might be? I'm confused about that. I've always imagined that you're not actually sending a heifer to Africa, you're enabling an African to obtain a heifer. Is that heifer a Holstein Friesian? Is it that kind of replacement?

Lawrence Alderson: I, like you, perfectly I need to send donations for people in Africa and elsewhere to keep livestock efficiently. That's livestock that they have. What I'm referring to otherwise, are where in an apparently philanthropic spirit, which may be a cover for other negotiations to take place, you never know. In that spirit, animals, which are genetically redundant in the Western world, are donated to countries on the pretext that they're high yielding. "We don't want them so we might as well give and make ourselves feel good and appear good." Am I a cynic?

Jeremy: No. If you are, then I am too.

[laughter]

There is a fundamental question you've raised throughout our talk. You've raised the question of more food for more people, which will be necessary. The countervailing argument is always that food must be cheaper, cheaper, cheaper. I've eaten Dexter beef. I've had cheese from little flocks up in Swaledale and where have you. It's always expensive. It's expensive in cash terms to me. How do you overcome the argument that this is a rich person's hobby, if you like? Preserving

them to eat them. Preserving them to eat their products. It's a folly really.

Lawrence Alderson: That argument is only one that one can discuss in a Western context. Yes, people do want cheap food, but if you carry on at present growing crops for animals on the good land in order to produce this cheap food, as it's called, then people will run out of food anyway. If we have 10 billion people in the world by 2050, you're going to need an awful lot more of the cultivated land simply to grow the corn, the wheat to feed those people, without it going through animals. You need it for the people.

At that point, cheap food has got to be looked at in the context of food availability. If animals move to lower input systems, they may produce less. It may even be more expensive food. From a livestock point of view, I think we accept anyway, that people will eat less meat —in the Western world I'm talking about—but it will be better quality meat. It will be coming from these upland grazings, which are healthy, good for biodiversity.

People will treat it much more as something that they eat as a special occasion rather than just routine. Again, I think you have to look at a whole load of factors here, which come together. Producing enough food at some stage is going to be of as much importance as cheap food.

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