



Whitefaced Woodland Sheep Society

Web site: www.whitefacedwoodland.co.uk

Newsletter 87– November 2013

Chairman's Year

The year has gone by very quickly with a few happenings. The show season started quietly but finished with some large numbers forward. Ryder did a fine job at the Yorkshire with a good turnout.

At the beginning of the year a new member of the Woodland Society was born - John Willie Walter Thorp. On the day of the AGM, apologies were received from our Treasurer as more important matters were afoot. Welcome to the world Lucy Anne, born on the afternoon of the AGM. A proud granddad showed us all her first picture.

The proposed amalgamation of our two registers is hopefully progressing, following our meeting with members of the RBST representatives and the vote in favour. Good luck to Philip and his team in making things happen.

Bretton Mill was back in September with a bang. Whoever thought the breed record would only stand for 12 months. James Gill's lightly shown shearling made £2,200. "The best I have ever bred" says James. Purchased by Mr Ryder Howard, this is possibly an indication that our sheep are improving. Can this be beaten in 2014?

A big thank you to all at Plover Hall for the warm welcome we received for our AGM, followed by an excellent lunch and sheep display.

I wish you all well for Christmas and the New Year.

Paul Dixon

Just a reminder to the few of you who have not yet paid your subscription . . . The annual fee of £10 was due on 1 September. Please send your cheque to Rachel at the Plover Hall address.

Flock Book Review Committee

Those of you that made it to the AGM will know that we have set up a flock book review committee, to look into all the options open to us in dealing with the problem of having two competing flock books for registering Woodlands.

Now I don't want to start off on a negative, but the simple fact is that we are wrestling here with some major issues affecting the Woodland world and it is a simple fact that we might not be able to overcome some of these problems. However, I am pleased to say that we are making some progress in sorting out a possible way forward in the short term. But we on this committee can't decide anything without you. We are going to have to put one or two proposals or recommendations before all Woodland breeders and ask for your choice and support. Then we are going to have to get the approval of the RBST.

At the moment we are looking at the issues that surround the current supplementary register of the Combined Flock Book (CFB). The RBST have set the rules for this based on rules outlined by DEFRA, but the rules they've adopted simply do not fit the requirements, as they stand, of the WWSS, which is why the Society set up its own register. What we really need is to get rid of the supplementary register as it stands, and replace it with the WWSS register as it is. That way we would keep the integrity of both the CFB register and the WWSS register. However this is not as simple as it sounds and there are a great many potential problems that we could all find to stop this happening. So it is going to take a monumental effort from all of us to come to some kind of acceptable compromise that satisfies everyone. But I truly believe that we can do this.

All around the world there are breed societies who run perfectly useable flock/herd/kennel pedigree records. Surely it is not beyond us to do the same? Why can't we put aside our

differences and come up with a perfectly simple system that allows us to register our Woodlands in a way that satisfies all the interested parties? A register that is run by Woodland breeders for Woodland breeders, that is recognised by the authorities and under the protective umbrella of the RBST and government legislation designed to protect more vulnerable breeds like ours.

If you have any strong views, or would just like to contribute to the process, you can contact me by email at Philip@keerfalls.co.uk or by phone on 015242 21019 (but please note I still have a farm to run and I'm very busy, so if you get the answer machine, please leave your number, name and a short message and I'll get back to you as soon as I can).

Take care, Philip

Show Results

Penistone - Judge: Neville Belfield

Aged ram: Paul Thorp

Shearling ram: James Gill

Ram Lamb: Paul Thorp

Aged ewe: James Gill

Shearling ewe: Paul Thorp

Ewe lamb: Karen Dowey

Champion: Paul Thorp's shearling ewe

Reserve Champion, Paul's aged ram

Bretton Mill – Judge: Clive Mitchell

Shearling tup (17 forward)

1st and winner of the Ken Wild Trophy: James Gill

2nd Simon Burford, 3rd Sally Windsor

Hayfield – Judge: Harold Smith

Aged Ram: Mary Morton.

Shearling Ram: James Gill

Ram Lamb: Tony Redfern.

Suckled Ewe: Chareen Kaye.

Shearling Ewe: Mary Morton.

Ewe Lamb: Chareen Kaye

The Champion was James' shearling ram and

Reserve was Mary's shearling ewe.



Congratulations to Karen Dowey on a very successful year's showing - and on the birth of Lucy Anne on 6 October



Pictured from left to right:

Helen Dowey with the shearling ewe who was Supreme Overall Champion (Interbreed) at Mottram.

Jeff Dowey with the aged ewe who won the Woodland classes at Hope and became the Whitefaced Woodland Champion of Champions for 2013.

Andrew Lucas with shearling tup Edward who was Supreme Overall Champion (Interbreed) at Harden Moss.

Late summer & autumn sales

Rare Breeds Sale at Skipton on 31 August

30 shearling ewes were forward this year, with 150 gns (£158) paid for two of Robert and Jean Price's ewes. They also sold the only two ewe lambs present, at 80gns (£84). Other prices ranged between 75 and 120 gns, with an average of 102 gns (£107). This average was £36 down on 2012 and possibly reflected the increased number of animals for sale. Of the two shearling rams forward, only one sold, at £160.

The Annual Whitefaced Woodland Show and Sale returned to Bretton Mill on 28 September – in a different and possibly more accessible field (once you'd located it!)

Of some 240 Woodlands sold, the highlight was undoubtedly the record price of £2200 for James Gill's shearling tup, bought by Rider Howard. Simon Burford's second placed tup sold for £750 and Sally Windsor's third placed, for £580. Tups from Neville Belfield and Dave and Debbie Wardell made £450 and £400 respectively. In all, 25 tups were sold.

32 ewe lambs made an average of £61, with Chareen Kaye's "Best pen of 6 ewes lambs" reaching £86. Of some 60 shearling ewes, John Jones's "Best pen of 6 ewes born in 2012" made

£136 apiece, and six from Paul Thorp, £124. The average price of shearling ewes was £105. Colin Nutter had two pens with mixed CFB and unregistered shearlings, but this did not seem to affect the bidding or the price.

For 56 draft ewes, the average selling price was £76 (if you exclude 6 missing teeth), with best result of £100 for a pen of 11 from Edward Lees.

At the High Peak Livestock Sale at Bakewell on 12 October, shearling ewes from C Ayres of Hathersage sold to £118 and aged ewes to £105. The single aged ram forward made £330. Ewe prices compared well with mules on the day and exceeded Swale values.

Mutton from the Whitefaced Woodland

The Whitefaced Woodland has its roots deep in the agriculture of the High Peak. Since long before records began, the ancestors of the Woodland roamed the moors and hills of the High Peak where they were primarily kept for the quality of their wool and mutton. Up until World War II all the hill sheep of the High Peak, including wethers (castrated males), would be kept for several years, some males for up to six years. This seems strange to us today as man-made fibres have dramatically reduced the value of wool and lambs are usually killed for meat in their first year. However in the past wool had far greater value and as the best wool often came from wether lambs at a year old, it made far more sense to keep lambs going much further. Every year a crop of wool would be taken from the sheep and they would be fattened on the hills until eventually they were sold for mutton. The Woodland mutton in particular was highly prized and Farey¹ makes the following observation:

“Aged sheep of this breed, however poor, when brought in, are in great repute, after well fattening, to furnish *Mutton* for the tables of the higher classes. Sir Joseph Banks, Bart. Annually, has a score of these sheep sent to be fattened in his Park in Revesby in Lincolnshire and sometimes jocosely remarks to his guests, “Here is Derbyshire bone and Lincolnshire Mutton.”

¹ Farey, John 1811 “General view of the agriculture and minerals of Derbyshire: with observations on the means of their improvement. Drawn up for the consideration of the board of agriculture and internal improvement.”

[Author’s note: Sir Joseph Banks was an important sheep breeder in the nineteenth century and instrumental (with others) in bringing Merino sheep from Spain to improve wool production in this country in several breeds, including the Whitefaced Woodland.]

Food shortages in and following the second World War meant the larger, more slowly maturing mutton carcasses of the Whitefaced Woodland were less productive and so farmers sought out faster maturing lambs and sold off many of their Woodlands as a result.

However some farmers still found a niche market for the heavier woodland shearlings. Harold Hodgson a retired Woodland breeder, and respected member of the Whitefaced Woodland Sheep Society who farmed under Kinder Scout all his life, recalled to the author how his family were still practicing the technique of keeping wether lambs on the hills well into their second year, then taking a crop of wool from them. Following shearing, any undersized or thinner sheep were returned to the hill to fatten on further.

Apparently the mutton of these older ‘lambs’ was still very much in demand by local butchers up until Harold retired a couple of years ago. Indeed Neville Belfield, another of the Whitefaced Woodland Sheep Society’s older breeders, has found a ready market with a local butcher for his mutton from shearling hoggs. The author himself has found Woodland mutton to be full of flavour and popular amongst his own customers.

Whitefaced Woodland mutton is rich and tasty without being excessively fatty. Even at two or three years old, the meat can be tender when slow cooked. Indeed in the author’s opinion, mutton that has been placed in a casserole dish half full of water with chopped vegetables, onions and potatoes and left to cook in a low oven all day is beyond compare, the meat falls from the bone in tender, delicate fronds of succulent and delicious meat and the gravy is rich and packed with flavour. Must go...I’m hungry!

Philip Onions June 2013

The minutes of the AGM held on 6 October will be circulated with the next Newsletter

THE ALMOST COMPLETE AND UTTER HISTORY OF SHEEP AND MAN

IV

The biology of the first sheep to be domesticated Tracing the wild ancestors of *Ovis aries*

In my last article I explained that the modern domestic sheep species *Ovis aries* is thought to be a composite of several wild species of sheep, predominantly *Ovis musimon*, *Ovis orientalis*, *Ovis ammon* and *Ovis vignei*. These sheep of wild origin were then developed through selective breeding and cross breeding into all the sheep breeds that we know and recognise today. However, as I explained in my last article there is considerable scientific debate as to how accurate this theory is and to what extent each species has contributed. So in this article I shall discuss a more accurate picture that is starting to develop with advances in the science of genetics.

Hiendleder, S. et al (1998)¹ considered mitochondrial DNA from 243 sheep of five European, one African and four Asian breeds and several mouflon (*Ovis musimon*), urial (*O. vignei bochariensis*) and argali (*Ovis ammon nigrimontana* and *O. a. collium*) sheep. I suppose at this point I'd better explain what mitochondrial DNA (mtDNA) is, and its significance for those who don't know, apologies to those who do (you might want to skip this section if you do).

Mitochondrial DNA

Mitochondria are small structures found in all cells² (with certain exceptions such as bacteria, blue-green algae and red blood cells for example). The mitochondria are responsible for cellular respiration. As the cell divides the mitochondria are spread roughly equally between the two new cells (the number of mitochondria in each type of cell varies with energy needs so unicellular green algae may have only one mitochondrion per cell where as amoeba can have up to 500,000). Each mitochondrion contains DNA but this mitochondrial DNA is not as complex as the DNA found in the cell nucleus or nuclear DNA. Within a cell the mitochondria replicate themselves by simple division, so when the cell divides the number of mitochondria within the cell can soon grow back to the original level.

When a female ovulates the single cell of the ovum created comes with its own mitochondria each containing complete mitochondrial DNA strands even though the nucleus of the egg itself only contains half the nuclear DNA needed to create new life. The mitochondria within the ovum allow it to survive for a while independently from the mother.

On fertilization the sperm ruptures and the nuclear DNA from the father's sperm passes into the nucleus of the egg where it combines with the mother's nuclear DNA to create the new life, while the rest of the sperm cell is discharged from the egg or dies and is absorbed by it. The sperm contains a lot of mitochondria especially in the tail section to provide it with the energy to beat its tail and swim, but on fertilization all this dies.

Once fertilised the egg can then reproduce itself and the DNA gathered from both parents in the nucleus then go on to divide and grow into a new organism powered by the mitochondria from the first cell of the egg, but with each cell division the mtDNA of the original mother cell is duplicated. This new organism therefore contains nuclear DNA from both of its parents however as the fertilised egg comes from the mother only, all mtDNA is carried through the female line alone, while the male line contributes none. Also, because the mtDNA only reproduces by simple division, genetic mutation is rare and mtDNA can pass down through the

1. ¹ Hiendleder S et al 1998 "Analysis of mitochondrial DNA indicates that domestic sheep are derived from two different ancestral maternal sources: no evidence for contributions from urial and argali sheep."
<http://www.ncbi.nlm.nih.gov/pubmed/9542158>

² Clegg, C "Biology for schools and colleges" 1980

generations for hundreds of years before a significant mutation takes place. Therefore it is possible to trace back the female line a considerable distance by examining mitochondrial DNA and it is even possible to calculate when a line first mutated and to follow this mutation through the daughters' line.

Hiendleder et al found two distinct lines of mtDNA indicating two branches of sheep development through the female line. The first of these lines they termed the Asian lineage because it was found in central Asian sheep breeds and some European sheep and had gene sequences found in two wild argali sheep (*O. ammon nigrimontana* and *O. ammon collium*). The second they called the European lineage because it was found in the majority of the European sheep that they examined and was similar to the genes found in the mouflon (*O. musimon*) mtDNA. Hiendleder decided that the modern European mouflon was in fact a feral sheep that had escaped from domesticated sheep early on in the history of domestication and was a descendant of *O. orientalis*, this was confirmed by finding very similar mtDNA sequences in both *O. musimon* and *O. orientalis*.

More accurate gene sequence analysis showed that the sheep lineages between European and Asian lines differed by only 4.43% making *O. orientalis* and *O. ammon* very closely related.

From their analysis Hiendleder et al concluded that some modern domestic European breeds share a common ancestor with the mouflon species (*O. musimon* and *O. orientalis*) and an additional wild ancestor (that remained unidentified from this work) but not the urial (*O. vignei*) or argali (*O. ammon*) species. On the other hand some Asian sheep were more from the argali lines, not from the urial, although they had some mouflon mtDNA.

Now we must put this into context and say right away that this is through the female line; it is possible that wild rams of other species had input at different points and may have contributed DNA but not mtDNA. It was also a relatively small sample of sheep from Germany, Russia and Kazakhstan that they experimented upon so we can't say that all European sheep are of the mouflon type. All of that said we can safely conclude that in these sheep, the majority of mtDNA found in these European sheep came from the mouflon lines (*O. musimon* and *O. orientalis*) and in the Asian lines some came from argali lines (*O. ammon nigrimontana* and *O. ammon collium*) but not *O. vignei*.

Tapio et al 2006³ found 4 lines or clades in the mtDNA from looking at a group of sheep from all over Europe and northern Asia including a very small number of sheep that shared mtDNA sequences with the Urial (*O. vignei*). They were investigating to see if sheep farming in Europe had started independently to the domestication that started in the Fertile Crescent but found no evidence to support this. They did however find a bottleneck of genetic material suggesting that there had been a smaller group of sheep that were responsible for many of the central European and western European breeds. But they only selected a few breeds from each area, for example the Oxford Down represented all British breeds so again this was a very general picture.

Meadows et al 2007⁴ identified five separate mtDNA clades from nine breeds of sheep from modern-day Turkey and Israel. They chose this area because it is near to the Fertile Crescent where there are some of the oldest genetic bloodlines.

³ Tapio et al 2006 "Sheep Mitochondrial DNA Variation in European, Caucasian, and Central Asian Areas"
<http://mbe.oxfordjournals.org/cgi/pmidlookup?view=long&pmid=16782761>

⁴ Meadows, Jennifer RS 2007 "Five Ovine Mitochondrial Lineages Identified From Sheep Breeds of the Near East"
Pub. In Genetics <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1840082/>

The Sakis⁵ a breed from Northern Turkey whose mtDNA is almost 100% from *Ovis ammon* origin

By far the two most common were those identified by Hiendleder above; the first of these shared a clear ancestral line with the eastern mouflon *O. ammon*, while the second shared one with *O. musimon* the European mouflon.



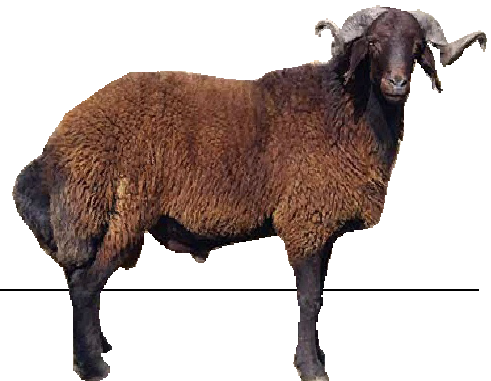
provided by Prof. Dr. M. Ihsan SOYSAL
and Research Asst. Emel ÖZKAN

The Norduz-Koyunu had mtDNA clades from *O. musimon*, *O. orientalis* and *O. ammon*
However three other lines were also established sharing some genetic material with one or other or both of the above and one had genetic material indicating ancestors of *O. orientalis*, *O. ammon* and *O. vignei*.



The Marakaman⁶ a breed of fat tailed sheep from Turkey with ancestors including *O. orientalis*, *O. ammon* and *O. vignei*

Meadows concluded that domestic sheep resulted from multiple crossing of wild sheep into domestic populations. Perhaps our ancient forefathers were allowing their domestic sheep to mate with wild sheep, perhaps they were unable to stop them or perhaps this was all part of their efforts to breed better sheep and prevent inbreeding by



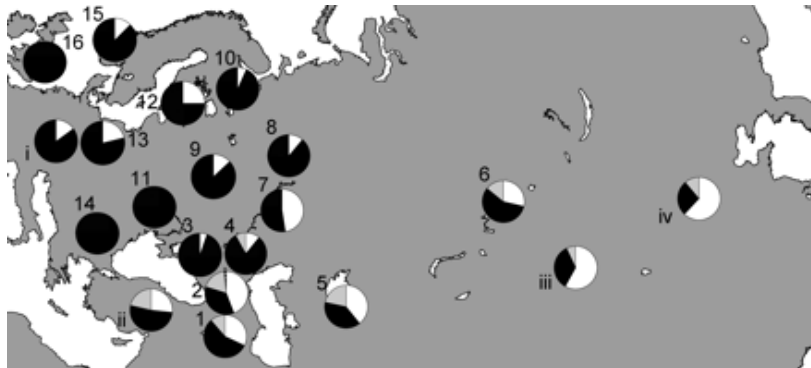
⁵ <http://www.ansi.okstate.edu/breeds/sheep/sakiz/>

⁶ <http://sevatarimhayvancilik.com/hayvancilik.htm>

crossing them with other wild sheep. We shall never know for certain, but clearly it went on quite a lot.

Now here I ask myself, how could the mtDNA of a sheep from the northern edge of the Indian sub continent (*O. vignei*) have made it into ancient sheep being domesticated in the Fertile Crescent? I ask this question because Meadows et al went on to try dating the mtDNA branches and found some to be from 17,000 years ago (well before domestication was thought to have begun) down to about 9,000 years ago; the period that many considered to be the dawn of agriculture when sheep were first taken from the wild and domesticated. Surely evidence of the *O. vignei* line would be found not so much at the starting point of agriculture, but further from the epicentre after the practice of sheep farming had left its birth place and moved out into the area from which these sheep originally came? Perhaps some ancient near eastern farmer imported wild sheep from India, but how? So it does not surprise me that the mtDNA samples showing a connection with *O. vignei* were found in only one breed of sheep in this area, I would expect more influence further north or east nearer to the original source of mtDNA, the Indian sub-continent.

Tapio et al looked at sheep from a much wider area and mapped these breeds showing the degree of mtDNA from each sample. It is clear from this that the European sheep (tested) west of the Caspian Sea tended to have far more *O. orientalis* mtDNA than those to the east of the sea and the further east one goes the higher the amount of *O. ammon* mtDNA found, with one small cluster showing *O. vignei* results in northern Turkey (2 on the map below).



“The distribution of the 4 distinct haplotype groups in the study regions. The slices in the pie diagrams represent Group A (white), B (black), C (gray), and D (region 2, hatched and extended for visibility). The 4 Caucasian regions are: south Caucasus (1), north Caucasus (2), Stavropol (3), and the Caspian Depression (4). The 2 Central Asian regions are located in areas northeast of Caucasus: the region east of Caspian Sea (5) and the Altay region (6). The 10 regional groups of the eastern fringe of Europe are: the Middle Volga region (7), the Volga-Kama region (8), west Russia (9), Russian Karelia (10), Ukraine (11), east of Baltic Sea (12), Poland (13), southeast Europe (Tsigai breeds; 14), Norway (15), and Britain (16). Previously reported haplotype group frequencies on 4 regions has been included: (i) Austria (Meadows et al. 2005), (ii) Turkey (Pedrosa et al. 2005), (iii) northwest China (Kazakh Fat-Rumped and Tibetan), and (iv) northeast China (Han, Hu, Mongolian, and Tong; Guo et al.”

So how does this affect the breeds that we know today?

The answer will remain unclear until someone has analysed the mtDNA of our own sheep to see if they contain material that would connect them to which species of modern wild sheep and here I say modern wild sheep because it is widely accepted by these researchers now that *O. musimon* is probably not a truly wild species but a feral escapee from early agricultural systems as found by Hiendleder.

We must remember that the map above only shows the mtDNA of the sheep tested so as only one breed of sheep (the Oxford Down) was used in Britain, the results only show the composition of mtDNA for that breed and not for all British breeds. It is entirely possible that other breeds in the UK come from different clades and therefore have different ancestral origins.

Furthermore I should also point out that both Hiendleder and Meadows found a new ancestor's mtDNA in their samples, but this one remains unidentified. This species of sheep does not appear to be alive today; or at least they have not yet identified it. Could it be that this species was totally assimilated into the first domestic sheep and all that remains of it is what stares us in the face everyday? Could it be that this species was the first to be domesticated and that all others species were crosses with this first sheep? As yet, we don't know, but what we do know is that the modern domestic sheep *O. aries* is a composite of several other species of sheep, mainly the mouflon (*O. musimon* or *O. orientalis*) and/or the argali (*O. ammon* species) and that the current information shows only a rare contribution from the Urial (*O. vignei*), at least in the sheep so far sampled.

Philip Onions

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