

Update Breed Council

Since our last newsletter the Breed Council have met on two occasions – the main topics have been the first of the revised working test for Border Collies – the first of which was held in October and a very successful day.

Two more are planned for this year one in May being run by the Border Collie Club of GB and the second in October run by Southern Border Collie Club.

It would be good to know from our members if there is any interest to run one in our area – so feedback welcome and that would be sometime in 2010.

The second big topic of the year has been the annual Breed Council Day – which will as always be bigger and better. This year it is on 2nd May and we will be adding Companion show obedience and a judging seminar plus talk from Prof Peter Bedford – eye specialist.

Full detail and contacts can be found on the flyer, including in the newsletter

PBHF update

The end of last year – all was fairly quiet but the start of the year for the Group sent the secretary and other members into overdrive when the first cases of Glaucoma were announced, followed by a number of dogs tested for the predisposition to Glaucoma.

This resulted in the group – in particular the secretary contacting Alan Wilton (who came up with the DNA carrier test for TNS) Prof. Bedford and Jeff Sampson.

Please find below their comments as supplied to the PBHF

ALAN WILTON

30/1/09

Cases of glaucoma have recently been found in Border collies. Glaucoma cases seem to rare in Border collies and the breeders cannot be blamed for these cases. They had no way of knowing it would develop. If glaucoma was common we would expect to see a lot more dogs going blind.

We currently know little about the genetics of glaucoma in Border collies. If it has a genetic basis we do not know how it is inherited. Glaucoma is a build up of pressure in the eye because the fluid drainage system is blocked. Blockage could be more likely in animals with particular eye structure, perhaps inherited. As in the case of Collie Eye Anomaly, just because a dog has the unusual eye structure does not mean it will develop symptoms.

There are currently no DNA tests for predisposition to glaucoma in Border collies. If samples are collected from cases now, research can be done and in several years a test might be developed, if a funding source is found for the work.

Breeders with dogs related to glaucoma cases who are worried about breeding from them could have them tested by a veterinary ophthalmologist to see if the dogs are

predisposed to glaucoma. However, this will not tell them whether any pups they produce will become affected. Only a small proportion of dogs related to glaucoma cases are likely to develop the condition. It is an individual decision for each breeder whether to use glaucoma related dogs or not.

2/3/09

My point is that people should not panic. We know little about the inheritance of glaucoma in Border collies yet. The ophthalmologists may know more from experience with other breeds.

I prefer the wait and see approach. We need more information before taking any drastic measures.

From a research point of view, it would be great to have Gonioscopy test results from relatives of affecteds and some unrelated dogs for comparison and to get samples for DNA from them. The question is how useful will the information be for breeding. Do the ophthalmologists know what the increased risk of glaucoma is in a dog with a narrow angle versus one with a wide angle? How do the grades relate to likelihood of glaucoma occurring later in life?

The inheritance of glaucoma is likely to be more complex than for CL or TNS. There may be factors other than genetic ones involved. In a similar way to not all CEA affected Borders having sight affected, not all Borders predisposed to glaucoma by their genes may develop glaucoma. Currently, I do not know what the risk of glaucoma is in litters from relatives of glaucoma cases (or litters of glaucoma cases themselves). We have a cluster of a few related cases which is worrying, but only a few seem affected in each generation.

Glaucoma in the breed is something worth monitoring and researching. I am keen to start collecting samples for this purpose. The most useful samples are from affected animals. Modern genetic analysis would take 20 affected and 20 controls and look for regions of dog genome associated with the glaucoma. Traditional genetic analysis may also be useful and that involves looking at large pedigrees with several affected animals and their relatives. So parents and grandparents of affecteds and siblings would be useful samples. Other relatives of glaucoma cases may be useful if they later develop the disease or have descendants that do. So while they are not immediately of value, if the opportunity to obtain a sample is presented we would be happy to have a sample now.

I will be looking for methods to fund this research. The Aust government does have grants that will match contributions from interested parties. Breed clubs were partners in successful grant for the CL research. Applications for funding go in at end of April or late October. April will be a bit too close to organise anything for this year I think.

PETER BEDFORD

4/2/09

The inheritance pattern for angle closure glaucoma is unknown. As such it is difficult to give the correct advice. A clear from an affected must have abnormal DNA, but how much and whether it will express is just not known. This form of glaucoma is easily the worst inherited eye disease a dog could get -- both painful and blinding -- so I guess the safest advice is that you avoid breeding from the parents, siblings and offspring of an affected, even though the animals in question have normal angles. Not popular I know, but nobody I know would want to be responsible for producing an affected dog by breeding from

stock linked to known affecteds. Those who do take the risk would be guilty of spreading the disease within the breed.

23/2/09

The big problem is that the genotype for the clinically unaffecteds produced from an affected grandparent is unknown simply because the inheritance pattern is unknown -- and if several genes are involved then it is more than impossible to predict. The gonioscopy has its limitations and in the absence of a DNA test.....

The official scheme does not permit grading -- its either pass or fail, but when I explain the fail result I have always thought it helpful to equate the degree of predisposition to simple numbers. Perhaps I am trying too hard to spread comprehension!

I think with other breeds not using affecteds has been advocated -- we did this with the Siberian Huskies and the incidence of the the disease seems to have remained very low in the UK.

3/3/09

As with most things its all a matter of detail and the aetiology of glaucoma is difficult to understand. I can paint a simple picture but it will not fit all situations. I think odd looking pectinate ligaments are present throughout dogdom and because they look odd we call them dysplastic. The really significant feature in PLD (pectinate ligament dysplasia) is whether or not the angle is narrowed as a result. Where gross PLD exists and the angle is really narrow, then actual angle closure and resultant glaucoma are possibilities, but, as you say quite correctly, not all predisposed dogs, even with gross PLD, will get the disease.

There has to be a balance between panic and caution -- concentrating testing on those around clinical cases of disease is sensible. Lets see what your clinic throws up as its a useful number of dogs -- to date the vast majority of dogs I have tested have been normal. Maybe -- and hopefully -- this will turn out to be another lens luxation story for the breed.

JEFF SAMPSON

11/03/09

Hi Jeff

I've been asked to contact you regarding the recent discovery of narrow angle glaucoma in Border Collies. This is a fairly new problem for us - a pup presented with glaucoma in December last year. Since then we, as a breed, have undertaken gonioscopy testing across widespread lines with mixed results.

At the time of his statement, only one line appeared to be affected. However, since then, we have had affected results across more lines so I have been asked to find out your opinion, as a geneticist, as to what breeders should do with regard to breeding from dogs who are found to be affected following gonioscopy testing?

Regards
Sam Tydeman
Pastoral Breeds Health Foundation Secretary

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Dear Sam

Thanks for that. I think that the Animal Health Trust is aware of the situation and taking steps to collect any relevant DNA samples.

Jeff

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Hi Jeff

So is Alan Willton in Australia

Do you have any comments regarding breeding from affected (tested) animals that I can share with everyone?

Regards
Sam

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Dear Sam

I wish I had. The problem is that we still don't know the precise mode of inheritance and so making predictions of genotype is extremely difficult. However, I think there would have to be some pretty exceptional circumstances for deciding to breed from an affected dog. The problem is what advice you give about an affected dog's near relatives.

Jeff

With all this in mind, it was agreed that it was essential to start fund raising again so we had funds available to further the research into Glaucoma and it was agreed at the last meeting that Alan be contacted on how we could best assist and what funding would be appropriate. In the meantime, blood from the lines so far tested as either having glaucoma or the predisposition to Glaucoma are being sent out to Alan to start the research.

The two groups i.e. Breed Council and PBHF both agreed that blood would be taken free of charge at the Breed Council Day from the lines and sent out to Alan Wilton – full details on the flyer enclosed.

In addition West of England will also take blood on their testing day on 3rd June 2009 in Bristol – full details on the flyer for our day.

The group were also informed that the eye testing specialist would be meeting in May to discuss the development of glaucoma and we hope will also come up with an agreement on the testing – as one is grading, and others are not.

Please look out for up to the date information on our website.

I have been asked to write some information on Glaucoma – which is included in the newsletter as a separate information sheet.

Please do not hesitate to contact your reps – Sue Ader and myself if you need any further information on either of the Groups.

Kathie Kinton