

## Progress Towards a Healthier Breed by Selective Outbreeding

### Finnish Kromfohrländer Club Review: September 6, 2013

For several years The Finnish Kromfohrländer Club has been actively seeking opportunities to improve the genetic diversity of the Kromfohrländer breed in order to ensure the health of the breed. The Finnish Kromfohrländer Club has worked to strengthen co-operation with breed clubs from other countries (especially clubs in Germany and Switzerland) for the purpose of determining whether or not resources needed to expand the Finnish Kromfohrländer gene pool might be available in foreign populations. The Kromfohrländer breed was originally established in Germany, and the largest population of the breed still resides there. Since 2007 Germany, Switzerland and Finland have used a common database of the breed's health statistics which is maintained by the German Kromfohrländer Club (Rassezuchtverein der Kromfohrländer e.V.). Essentially, the database includes all pedigree and health information since the foundation dogs of the breed.

Additionally, The Finnish Kromfohrländer Club has been involved in professor Hannes Lohi's genetic research at the University of Helsinki since 2006. At the end of 2011 there were blood samples of 258 Kromfohrländers in the research group's blood databank; approximately 50 of those samples were obtained from German dogs. Roughly 200 dogs have been DLA-tested by the Finnish Breed Club. In this genetic overview, Lohi's research group found 5 different MHC haplotypes in the breed. This number is one short of the maximum to be expected in the breed in the light of the known pedigree.

Furthermore, there have been attempts to identify the specific genes causing epilepsy, hereditary cataracts and hyperkeratosis. Thus far these efforts have been unsuccessful.

The German Breed Club has sought to improve the health of the breed, both by selective breeding and by scientific research. Among other things the German Breed Club has conducted an extensive study of their own pedigree data. The study is entitled "Pedigree Analysis for Conservation of Genetic Diversity and Purging" (Pfeiffer & Wellman 2009). The results of this study revealed that there was little genetic diversity within the breed. In fact, there were no genetically varied populations even if comparing individual dogs of different appearance (for example, different types of coat) or considering the dogs' geographic origins. Different coat types, as well as dogs from the different locales and countries have been used for breeding on a wide scale, yet has produced little genetic variation.

In 2013 almost 100 Kromfohrländers took part in the MyDogDNA pilot project. The results of the project were made available in the summer 2013. The project included dogs from both Finland and Germany; both hair types, wire haired and smooth, were present. The average level of heterozygosity of the breed was found to be 21.3%. The average of all breeds is 28.6%. (*Ed: Higher levels of heterozygosity represent greater genetic diversity.*) Neither the German or Finnish, nor the wire haired or smooth dogs formed genetically diverse populations.

*More information about the results of this research can be found here:*

<http://www.mydogdna.com/breed-health/392/kromfohrländer>

Despite the genetic basis of the breed being narrow, the breed appears to be quite vital. The dogs normally breed and whelp without problems or human intervention. The average litter size is 7, with a range of 1 to 13 puppies. However the extremes are rare. Most Kromfohrländer dogs are healthy and of good physical structure.

The methods to increase genetic diversity of the breed and to decrease genetic disease in the population have been analyzed carefully. These goals are very difficult to achieve, and for this reason The Finnish Kromfohrländer Club began discussions of an crossbreeding project. The Finnish Kennel Club was initially contacted in the spring of 2011 with an inquiry about crossbreeding Kromfohrländers with other dog breeds. In order to give the Scientific Committee of The Finnish Kennel Club a clear and reliable picture of the basis and status of the Kromfohrländer breed, the Kromfohrländer Club provided breed related genetic information, scientific research, health statistics and other details. In April of 2013 the Scientific Committee gave its permission to proceed with crossbreeding. (Scientific Committee, April 2013).

### **Preparing the Prospective Crossbreeding Project**

As a result of the Breeding Board's positive reaction, The Finnish Kromfohrländer Club prepared for crossbreeding. In the summer 2011 a study was initiated to identify the breeders' collective ideas for the project and to determine the breeders' willingness to personally participate in the crossbreeding project. In the autumn 2011 a task force was established at a breeders' meeting. The meeting was open to everyone interested in the matter at hand. The task force consisted not only of breeders and members of the Kromfohrländer Breeding Board, but also other dog owners who had an interest in the future of the breed. In order to keep the members of The Finnish Kromfohrländer Club informed about the work the task force had done, another crossbreeding meeting was convened in the beginning of the year 2012.

Both the questions and the discussions at the meetings clearly demonstrated that all the people interested in the breed were involved and willing to ensure the future and well being of the Kromfohrländer. Many people expressed satisfaction with the breed itself, but also felt that crossbreeding was necessary to increase the gene pool to ensure the future health of the breed. All directives to the breeders and members of the Club have emphasized the role of the Kromfohrländer's temperament, and importance, both for the present and the future, to hold on to the characterization currently in the breed standard,:

*“Adaptable, docile and high-spirited companion and house-dog, somewhat reserved about strangers, with moderate hunting instinct. Aggressiveness and timidity not desired.”*

The next phase of the project was to look for suitable other breeds for partners in the project. After much discussion the following breeds were deemed potentially suitable with regards to their temperament, size and health:

*the Tibetan Terrier, the Parson Russel Terrier, the medium Poodle and the Wire Haired Fox Terrier.*

As far as the history of the Kromfohrländer is known, none of the foundation dogs were registered pedigree dogs. The first litter of Kromfohrländers was sired by a griffon, presumably a French wire haired pointer. The dam of the litter was an unregistered black and white female terrier. She has been said to resemble the dog that has become well-known as the “His master’s voice” dog.

Two of the four breeds that were chosen for further consideration in the project –the Parson Russel Terrier and the Wire Haired Fox Terrier- are likely to most closely resemble the foundation dam. However, both of those breeds are hunting breeds unlike the Kromfohrländer. The temperament is something all the participants in the project want to retain and therefore no additional hunting breeds were introduced. Two other breeds –the Tibetan Terrier and the medium Poodle- were chosen from the FCI group 9, companion and house-dogs.

These four breeds, with explicit reasons why they were chosen in the project, were introduced to the Scientific Committee of the Finnish Kennel Club in the spring 2012. The Scientific Committee found anyone of these breeds acceptable but, “the individual dogs used in the project must be chosen with extra care and when considering the temperament one must be very critical.” The Scientific Committee supports the crossbreeding project, the primary goals of which are: health, genetic diversity and the temperament. (Scientific Committee, February 2013)

### **Permission to Start Crossbreeding Project**

During the summer of 2012 the project was put into practice. This meant looking for suitable individual dogs for the project. In August 2012 an application for the first crossbreeding combination was sent to the Scientific Committee which then gave a positive response. The Board of the Finnish Kennel Club addressed the application at a meeting on September 12, 2012, and approved the combination with the following conditions:

1. The Board of the Finnish Kennel Club approved the first individual crossbreeding combination: a black medium Poodle as the sire and a Kromfohrländer as the dam. The litter will be registered as pedigree Kromfohrländers but instead of the usual FI-registering, the litter will be in the Appendix Register.
2. The Board decided to approve the entire crossbreeding project the Finnish Kromfohrländer Club was planning, and authorized the Scientific Committee of the Finnish Kennel Club to consider and approve the future combinations, which are to be carried out through the end of the year 2017. Each case must be approved individually.
3. As the Breed Association (FCI group 9 Companion and house-dogs) supports the project, there is no need to deal with each individual case by the Breed Association.
4. The Finnish Kromfohrländer Club is obliged to inform The Finnish Kennel Club of the results and progress of the project.
5. The Finnish Kennel Club will inform The Scandinavian Kennel Union and FCI of the project.

## Results

While realizing the crossbreeding project, the Finnish Kromfohrländer Club continues to cooperate with the German Breed Club (Rassezuchtverein der Kromfohrländer e.V.), as well as the Swiss Breed Club (Schweizer Kromfohrländer-Club), with the intent to further enhance the project. Both clubs support the project that the Finnish Kromfohrländer Club is carrying out.

**The first Crossbred litter, Bingis B-litter was born on January 21, 2013:**

<http://jalostus.kennelliitto.fi/frmKoirat.aspx?Uusi=1&R=192&Nimi=bingis%20b&Kotimaiset=0>

<http://bingis.wordpress.com/>

*Text: Viivi Snellman*

*Translation: Päivi Lepola, David Meyer*