VOLUME 2022, ISSUE 11 NOVEMBER 11, 2022

Seward County Kennel Club

A CLUB FOR PERSONS INTERESTED IN DOGS AND THE SPORT OF DOGS.

Information for the newsletter, including brags, needs to be submitted by the first week of the month to be included in the next newsletter. Please email submissions to the editor.

WHAT MAKES THE MERLE IN DOG COATS? THE SCIENCE BEHIND THE PATTERN

Merle in dogs is one of the most intriguing coat patterns in the dog world, both in its appearance and its genetics. Also known as dapple, merle is characterized by irregular blotches of fur set on a lighter background of the same pigment, such as solid black on gray (called blue merle) or solid brown on tan (red merle). Blue and partially blue eyes are often seen with the merle pattern, as well.

Although beautiful and unique, this color can also be associated with health problems, primarily deafness and blindness. Awareness is key to responsible breeding; it is not recommended to breed two merles together.

There are several merle dog breeds where the pattern is commonly found and accepted as a breed standard, including: Australian Shepherd, Miniature American Shepherd, Collie, Shetland Sheepdog, Dachshund, Cardigan Welsh Corgi, Pyrenean Shepherd, Great Dane, Mudi, Catahoula Leopard Dog, Chihuahua, Border Collie, Pomeranian

Research shows that the gene responsible for merle in dogs is the same in every breed, indicating that it is an ancient mutation that predates the formation of dog breeds. It is unlikely to have arisen independently in different breeds.

What Gene Causes Merle in Dogs' Coat?
The merle coat color lies in basic genetics, where there is a dominant and recessive trait to produce those gorgeous splotches. This is the merle allele (M) and one copy of the non-merle allele (m). The merle (M) allele is a semi-dominant gene, meaning it only takes one copy of the M allele to produce a merle. So, every merle dog has one copy of the merle allele (M) and one copy of the non-merle allele (m), meaning every merle dog has an Mm genotype, and, therefore, every non-merle dog has an mm genotype.

The merle allele was first discovered at Texas A&M University's College of Veterinary Medicine

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NEXT MEETING November 17, 2022
Seward Civic Center 616 Bradford St, Seward, NE 68434
No Special Program - General Meeting 7:30pm

MEETING MINUTES

Seward County Kennel Club
October 20, 2022
Seward Civic Center

Members present: Diane Nitz, Kayla Thomas, Linda Soukup, Kathy Jackson, Tabitha Dvorak, Troy Dvorak, Mary Bristol, Tanya Williams, Shelene Costello.

Meeting called to order by President Tabitha at 7:30

Correction to September's minutes brag jar money to buy title winners 1 free meal per family at the January Awards night. Diane made motion to accept minutes with correction. Linda 2nd motion passed.

President: No Report.

Secretary: Humane AKC donation. Discussion to donate local instead of the AKC. Tanya will check into places in Seward and get back to the club for donation in November meeting.

Treasures: Report read. Motion made by Diane to accept Treasures report. Kayla 2nd Motion passed. Fast cat check of $1,572 has been received. Mary will be getting an account set up with Edward Jones in order to purchase CDs.

Membership: Karen Lacey read and approved. Welcome to the club Karen and Joey.

Show: Trophies- Cindy

Sponsorships- Tanya has gotten $200 in pledges so far for the 2023 show.

Tabitha reported- Fast cat vendor is now offering farm dog and behavior testing. Discussion to find out if there can be 2 judges so that participants can title. They wouldn't need any volunteers to run Fast cat or farm dog. The only thing they would need is a farm animal. Such as chickens, ducks, or goat for farm animal.

Food stand- Tanya will ask Pizza Kitchen to see if he will cater.

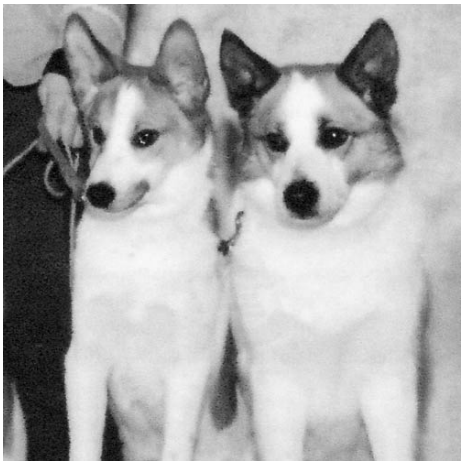
Obedience: Mary reported that attendance has been great for this fall session! CGC on Monday

Unfinished business: Goldenrod Award-
1) SCKC Founder's Award dedicated to all members, past, and present, for their service to the club
2)SCKC Founder's Award Remembering the people who started and built SCKC and thanking present members for service to the club. Motion made by Shelene to change the Goldenrod award to 1) SCKC Founder's Award dedicated to all members, past, and present, for their service to the club. Kayla 2nd the motion. Discussion. Motion passed.

Tanya made motion to adjourn meeting. Kayla 2nd motion.

Meeting adjourned at 8:16 pm

BREED SNAPSHOT: NORRBOTTENSPETS



The Norrbottenspets is a small, slightly rectangular spitzdog, well poised, with sinewy and well-developed muscles. Alert with head carried high, they have a fearless attitude and are extremely agile. They are calm, keen, and attentive, with a kind disposition.

Nobs aren't large dogs (a big male stands a shade below 20 inches) but their tough, sinewy bodies are built to withstand punishing terrain and harsh climates. They are a small-sized hunting dog of Spitz-type, which was thought to be extinct but survived as a farm and hunting dog in the Northern parts of Sweden and Finland. To be able to navigate the rough terrain and climate of the Scandinavian forests and hold large dangerous game, like moose, Norrbottenspets evolved to be extremely agile, rugged, and weatherproof with a fearless attitude, while at the same time kind and affectionate companions at home. They exhibit no extremes in physical characteristics because they must do all things well.

History

For centuries, the people of the world's northernmost climes have bred a type of dog known as spitz. These Nordic breeds can be burly like the Alaskan Malamute or dainty like the Pomeranian, but spitz types share certain traits. These include a profusely coated tail curved tightly over the back, a wedge-shaped head usually bearing a foxlike expression, and erect, pointed ears. The Norrbottenspets (nor-bo-TEN-spets) is a member of this ancient clan of cold-weather hunters and workers.

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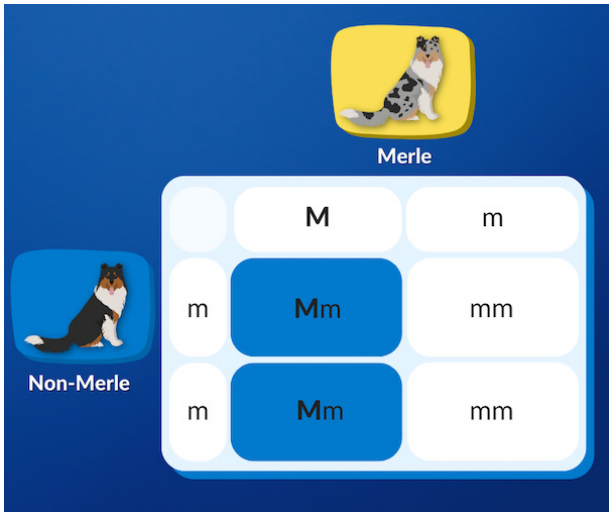
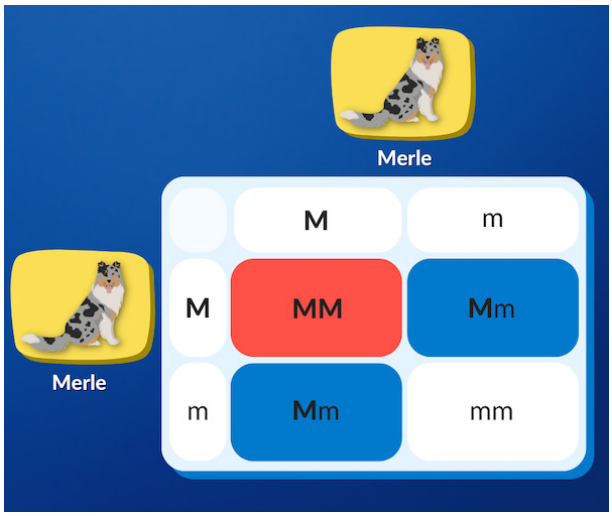
MERLE continued from front page.

in 2006. The merle coat color is governed by a type of mutation called a SINE insertion in the SILV (also called PMEL17) gene.

What about dogs with two merle alleles (MM)? These "double merles" (or "double-dapples") don't look like merles. They usually have much more white on them—and some can be almost pure white. The fully pigmented splotches are much smaller, and the background color is much whiter.





What Health Concerns are Associated With a Merle Coat?
The merle pattern can lead to a slew of health problems. The most common is hearing loss in one or both ears. Having even a single M allele actually raises the chance of being deaf, although the chance of an Mm merle being bilaterally deaf is still less than 1 percent. The presence of two M genes, however, greatly increases the chance of deafness, depending on what breed it's in. For example, in one study, about 10 percent of MM Catahoula Leopard Dogs, about 56 percent of MM Australian Shepherds, and about 85 percent of all other MM dogs studied were deaf in both ears.

Double-merle dogs also often have microphthalmia, in which the eyes are abnormally small (sometimes barely there) and often nonfunctional. They may also have abnormal pupils.

Researchers don't yet know why any of these abnormalities are associated with double merle; possibly it's because the merle mutation affects melanocytes, the cells that produce melanin pigment, and melanocytes are found not only in the skin but in the eye and inner ear, as well as the bones and heart.

Regardless, it's best to avoid breeding a merle to a merle. Because both parents will have the Mm genotype, on average only half the offspring will be merle (Mm). More importantly, you're likely to produce a quarter that are double-merle (MM).

How DNA Tests Can Help Determine Merle
Although not all double-merles have auditory or visual problems, it's best to avoid taking the chance. That sounds simple enough: Just don't breed two merles together. The problem is that not all merles are obvious, such as "hidden" merle and "cryptic merle."

In hidden merle, the merle pattern is hidden by the action of genes at another location. The recessive "ee" genotype inhibits the expression of any dark pigment, including the dark pigment in merles. If a dog were Mm and ee, it would just look cream or red in any pigmented area since the merle mutation only affects dark pigment. In cryptic merle, the merle pattern is expressed only in very small areas, so small you might not notice them unless you searched the dog's entire body for a trace. But these dogs can also carry the M allele and may produce merles as well.

That's why it's essential to DNA test before you breed any dog from a breed or family known to produce merle. A DNA test can tell you if your dog has zero, one, or two M alleles.

As you can see, while the inheritance of merle in dogs seems simple at first, it can get pretty complicated. Fortunately, you don't really need to know any more about the science to appreciate its beauty and to make wise breeding decisions.

Why Do Some Dogs Have More Merle Than Others?
You may notice that some dogs only have the merle pattern on their face, for example, while others show splotches on their entire body. There's some additional science behind that. The SILV gene involved with merle in dogs is responsible for producing a matrix that essentially holds the pigment in place. In a non-merle dog, the matrix is completely formed and pigment stays put. But if one SILV allele has this insertion of extra genetic material in it, the matrix has holes in it. Pigment granules escape from the holes, leaving a faded coat color.

However, the length of this genetic insertion is not very stable, and as cells divide during embryogenesis, which is the process of the development of an embryo, it may shrink or expand. In some embryonic cells, it shrinks to the point of being nearly normal, and the matrix these cells produce is almost complete. During development, cells derived from these near-normal embryonic cells give rise to patches of the fully pigmented coat.

Thus, merles are a mosaic of copies derived from cells with various degrees of "leaky" matrixes and normal matrixes. The size of each patch depends on how early in embryogenesis the insertion size mutated, with larger patches descended from earlier mutation events.

Merle is a complicated and fascinating color pattern—both in appearance and in genetics. That's why dog breeders and geneticists alike consider merle in dogs beautiful.

Caroline Coile, PhD, November 1, 2022, akc.org.

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The Norrbottenspets (or Norrbottenspitz in English) means spitz from the county of North Bothnia and probably originates from small Laika type spitz that were known to live with hunting people in the North Cape area in prehistoric time; small hunting spitz have survived for thousands of years through natural selection. In the very harsh areas of the northern parts of the Scandinavian Peninsula, hunting for food and fur was a necessity for survival. Precious furs like sable, marten-skin and ermine were the only valid currency for centuries. When fur prices dropped drastically after World War II, so did the interest for the Norrbottenspitz. The breed vanished and had no registrations for many years; hence the Swedish Kennel Club (SKK) declared it extinct. But only a decade later, news came that some true-to-type specimens had been found living as pets and watch dogs on small homesteads in the inland area of North Bothnia. Due to the very dedicated work of a few men, this old type hunting spitz was saved. In 1967, the Norrbottenspitz was reintroduced to the Registry in Sweden and a new standard was drawn up. The FCI accepted the new breed standard and the official name became Norrbottenspets.

Following the Swedish Kennel Club´s desire, Finns began to search the remote countryside of North Finland for native dogs that matched the standard to broaden the gene pool. They were successful and the majority of foundation dogs came from Finland. The studbook is still open in Finland, but was closed in the 1980s in Sweden. The Norrbottenspets population is about 1600 in Sweden and 1300 in Finland with scattered individuals counted in some tens around the world.

Norrbottenspets were accepted to the American Kennel Club's Foundation Stock Service in November 2007. As of November 2012, 181 Norrbottenspets, 175 of these with 3-generation pedigrees, were recorded with the American Kennel Club's Foundation Stock Service.

akc.org

Seward County Kennel Club

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