

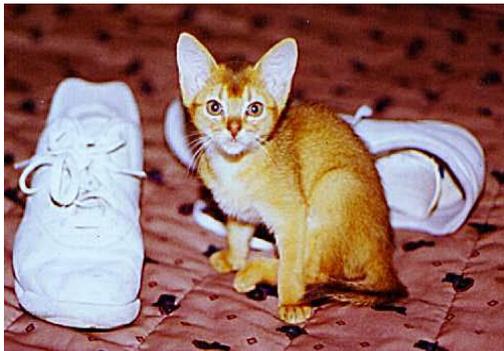
The Chocolate Abyssinian Hiding in plain sight?

by Robin L. Sessler (TICA judge)

<http://www.leotie.com/>

Clicking on a cat's name will take you to the Leotie webpage with photo or the E.R.o'S. pedigree for that cat. Additionally, these cats may be found in the [Leotie Abyssinian Pedigree Database](#)

I acquired my first Abyssinians in 1985 and 1986. They were registered in the Cat Fancier's Association (CFA): a ruddy female, [CH Neferra's Tara of Leotie](#); a sorrel (called red by CFA) male, [CH Caesarean of Leotie](#); and a blue female, [CH Neferra's Blue Velvet of Leotie](#). Almost from my beginnings with the breed I heard about the almost legendary deep red Abys, and how that it was generally thought that there were 2 shades of red, what I thought of as a bright, or coppery red, and what was referred to as a dark, mahogany or "Diablo" red. Diablo is in reference to a red Aby sire, [CH Dh Mahl's Diablo](#), who is in many Aby pedigrees today. In an article in the 1976 CFA yearbook about red Abyssinians, Edna Field states "Some bloodlines produce red kittens that are quite pale at birth but within a few months they will darken to a good red, while others produce deep reds that do not show distinctive ticking, but resemble a solid colored cat." In my own Aby breeding experience, all my sorrel Abys have been the same bright color, various amounts of rufusing, but having the same tail tip and ticking color. The rufusing seems to have the most effect on the undercoat, and non-ticked areas of the cat. In dilutes, heavy rufusing seems to create a patina effect on the blues, and probably has some effect on the other dilute colors also. For many years I was under the belief that the "Diablo" red was a result of the cumulative effects of the rufus polygene, and accepted the word of the more experienced Aby breeders that the chocolate gene did not exist in the US Aby genepool.



I started showing in [The International Cat Association](#) (TICA) in 1987. Since then I have owned or bred over 30 TICA Grand Champions, Grands to Supreme Grands inclusive, most of which were Abyssinians, plus 1 Persian, and 1 Household Pet. One of my sorrel girls, [RW QGC Leotie's Serenity](#), was both TICA's International 3rd Best Abyssinian Kitten and International 3rd Best Abyssinian Cat in 2000. I owned and bred

silver Abyssinians in four colors between 1994 and 2002. I earned a licence from TICA to judge Household Pets in 1998, and after an additional 2 years of training, I was licensed as a TICA Provisional Specialty Judge. In 2006 I was advanced to Provisional Allbreed judge. I have earned an Associate of Science degree from Illinois Valley Community College, where I graduated Magna Cum Laude.

In 1999, Pat Harbert, of [Ohmy Abyssinians and Bengals](#) in Oklahoma, contacted me about getting a sorrel Aby female, [CH Leotie's Dragonsong](#). She did acquire this cat and later we exchanged a pair of kittens. She got a ruddy girl from me, and I got a sorrel girl from her. This was [GRC Ohmy Radio Star of Leotie](#), pictured above. I was so pleased

with the intensity of her color, and the darkness of her ticking. This cat was in my house, running around with my other sorrel Abys for 6-7 months before I looked at her one day, and things just clicked. The darker ticking, the darker tail tip, the dirty pink paw pads, eyeliner and lip liner. She was not like any sorrel Aby I ever remembered having. Could she be chocolate? I almost couldn't believe it.

Red, Sorrel, and Chocolate Abys in History

Chocolate Abys are the black sheep of the Aby family. Very few Aby breeders will admit that they exist. Many see them as not being real Abys, since most acknowledged chocolate Abys today were created using another breed to introduce the chocolate gene. Cats not descended from these out-crosses that were actually chocolate or lilac could have been misidentified as red, sorrel, ruddy, or fawn. The majority of these cats are no longer alive, or available for inspection, and it is impossible to verify their color. The color in photographs can be very deceptive due to lighting, background color, and the photo processing. In some cases we have to rely on the memory of people who have seen or owned the cats. Anyone who has tried to match paint or fabric, without a sample in hand, knows how unreliable this can be. Individual observations can vary greatly, depending on one's frame of reference, but those observations can give us food for thought.



Early mentions of red Abyssinians that are ancestors of today's Abys are quite sparse. In fact, some of the earliest Aby foundation cats weren't Abys at all. One, in particular, was a cat known as Ras Brouk, or Mr. Brooke's Red Self. This cat, presumably of a solid, non sex-linked color, was introduced to the Aby breed in the late 1920's by Mr. H. C. Brooke to improve the color of the ruddy Abyssinian. Almost nothing is known about this cat, including its parentage. Mr. Brooke doesn't even mention him in his own book, "The Abyssinian Cat" published in 1929. [Tim the Harvester](#), a ruddy, is the only cat on record as being sired by Ras Brouk. A ruddy son of his, [Woodrooffe Ras Seyum](#), pictured at left, was born in 1935, and was considered one of the best Abys of his time. He sired in England before being exported to the United States prior to 1938. Other offspring from Tim, that stayed in England, helped establish some of the early British lines. One curious thing about Ras Brouk. In the 1972 CFA yearbook, Dr. Rosamund Peltz states that this cat, generally thought of as one of the original sources for the red/sorrel/cinnamon gene in the Abys, had been described as being chocolate in color.

Early generations of Abyssinians probably had a good number of cats that we would today not consider Abyssinians. One born in 1929 was [Woodrooffe Nigra](#), a self, or solid, black. Another, born in 1933, was [Woodrooffe Leo](#), a self red. This was a separate incidence of a self red in the Aby genepool, since as far as we can tell, Ras Brouk was not an ancestor of this cat. An early red Aby was [Nona's Red Chiki](#), born in 1943. She was a blending of the lines descended from Ras Brouk, and the lines that produced Woodrooffe Leo. Her pedigree also shows that her maternal grand-dam, [Miss Melodious Venture](#), was a Siamese. Chiki appears 9 times in the ancestry of [Taishun](#)

[Kephra](#), a red male born in 1960. Also appearing in his pedigree are both [Bruene Achilles](#), a ruddy, and [Nigella Contenti](#), also a ruddy, though some sources claim he was red. These two cats, or their grandsire, [Croham Abeba](#), are behind most red Abyssinians. Many of Kephra's offspring were exported from England to contribute to Aby breeding programs all over the world. The first British Champion red Abyssinian was [CH Bernina Heidi](#), born in 1964.

1964 was also the first year that CFA accepted the red Abyssinian. Prior to this, red Abys bred by Francis Schuler-Taft (Selene), and the Cowells (Du-Ro-Al) were show as exhibition only. [Du-Ro-Al Sorrel Sue of Pallady](#) was acquired by Marge Pallady. A daughter of this cat, [GRC Pallady's Sun Song](#) was the first red CFA Grand Champion, and received an award for Best Abyssinian female. While there doesn't seem to be any modern day descendants of these two, cats descending from Sun Song's sire, [CH Three-D Danny of Pallady](#), are quite widespread. One line that descends from Danny is the Darken line, bred by Michele Guthrie in the 1970's. Her cats, especially [CH Darken's The Red Machine](#), figure prominently in Sandra Thompson's Highsteppers line. In 1998, I sold one of my sorrel girls to Michele (Guthrie) Gauthier. She contacted me looking for a kitten descended from her Darken breedings. While the sorrel kitten I sent her, [CH Leotie's Red Return of Darken](#), was a very good colored cat, Michele told me that she didn't have the dark color that she remembered having on Red Machine and her other reds. Red Return descends from a full brother of Red Machine, [CH Darken's In The Red](#).

Identifying Chocolate



Identifying a chocolate Abyssinian can be difficult, since the differences from sorrel are not glaring. Photographs are practically no use in determining color when a cat is pictured by itself. The photograph at left of a group of three Abys, clearly shows there is a difference in the three colors, from top to bottom are shown a cinnamon, a lilac and a fawn female Abyssinian. It would be much more difficult to identify the colors if each cat were pictured by itself. So the objective is to find some unique characteristics of chocolates and lilacs to help us determine that they are not really sorrel or fawn. Pigmentation on the lips may indicate the cat is chocolate or lilac. Other traits can also be indicators, such as distinctive spine lines and paw pad coloration. The coloration of the tail tip

seems to be the most reliable visible trait to distinguish chocolate from sorrel. Just by examining the last ½ inch of the tail, disregarding the rest of the cat, the chocolate tail tip will be the color of dark chocolate, and the sorrel tail tip will more closely resemble milk chocolate. Telling lilac from fawn is much more difficult. TICA judge, genetic instructor, and former Genetics committee chairperson, Gloria Stephens, author of "Legacy of the Cat", gave me the following advise when I contacted her concerning chocolate Abyssinians:

"Chocolate may be anything from a dark chocolate to a light chocolate in color. Cinnamon - to me is it the color of Hershey's Coco .. it is a further dilution of Chocolate.

Bear in mind, the colors vary greatly. With the Aby/Somali, it is even more difficult, because the bands and ground color are highly rufoused. That is why CFA people still call the Sorrel Aby a Red Aby because it looks almost red. However, if they were to see a true sex-linked red Aby, they would know the difference immediately. One sure way to find out what color is to breed the chocolate (the cat would have to be carrying (d) to another cat carrying (d) .. in hopes of getting a lilac or a fawn. Lilac is a strange color .. it is almost on the grey-green side, where fawn is on the pink/beige side. . . . I would not be the least bit surprised if some of the 'Sorrel' Abys are not indeed chocolate. As far as chocolate or cinnamon goes - these are recessive genes to the brown tabby or black. To the best of my knowledge, cinnamon is recessive to chocolate and therefore can not carry chocolate."

In a separate message Gloria notified me that:

"I looked again at the hair samples you sent me and I honestly can't tell the difference between the chocolate and cinnamon .. hate to tell you, but they both look like chocolate to me And don't give up .. if the cats are truly chocolate, they should be registered correctly."

Pictured at right is Ohmy Maria TallChief, a chocolate female that has been genetically tested and confirmed as having the chocolate gene. Other than a genetic test, one way to get clues on how to determine color in Abys is to look at breeds that have both chocolate and sorrel as accepted colors. Ocicats make a good subject for this, since the breed was created using Abyssinians as a foundation breed, and still allows out-crosses to the Abyssinian. Sonja Moscoffian, breeder of Blackwater Ocicats in North Carolina, sent this information to the FIFe (Federation International Feline) list at Yahoogroups that clearly illustrates the range of color chocolate can manifest as, and details on how to tell the difference between chocolate and sorrel (cinnamon):



"In Ocicats we see all shades of chocolatefrom a very HOT type of chocolate who has very rufus background and almost red brown spots to a cold mute bittersweet chocolate...the background being almost a gray color and spots more dark brown then chocolate. We had to add to our standard the tail tip color to keep judges from trying to make bittersweet chocolates Tawnies.....brown spotted tawnies Chocolate and hot chocolates Cinnamon. Of course the trick is to get the rufus background with dark spots . . . Breeding bittersweet to hot usually doesn't give you the inbetween stage...normally you get a little of both."

Ian Francis, of [Cattery Van Gelre](#) in Lincoln, United Kingdom, breeds chocolate/lilac, dilute and silver Somalis. His first cat was a sorrel (then red) abyssinian, PR Ceianda MacGragor, who was one of the earlier cats of that color to gain a GCCF title. Ian also owned one of the very first fawn somalis in the UK He sent this anecdote to the Chocolate Aby list at Yahoogroups, that shows that confusion determining the color of sorrel and chocolate Abys is not limited to the inexperienced:

"I am fortunate in now living in a country where choc aby/somalis have been around for many decades. It is however still a huge problem for breeders and judges even here to decide on the correct colours - and we had a symposium a couple of weeks ago in which this very discussion took place. In particular WHICH sort of chocolate? Lighter or darker? Continental or British? That might seem silly - but the senior judge who was running the symposium had several pieces of chocolate to show the differences. We also saw a supposed chocolate cat that we ALL agreed was just a bad sorrel. Seeing it for real made a huge difference."

Some anti-chocolate Aby breeders ask that if the difference can't been seen by most people, then why are we trying so hard to force chocolate and lilac descriptions into the Aby breed? The reality of the situation is that chocolate and lilac are not genetically the same as sorrel and fawn. The differences are usually visible if they are looked for, and the trait can be tracked through generations. There are some people, men especially, but also some affected women, who really cannot see the difference. Mimy Sluiter, who besides breeding cats for over twenty years, also is a published author on many feline genetics and cat subjects. She has lectured at several fanciers courses organised by cat clubs and also gives lectures upon invitation at the veterinary faculty of the Utrecht University. She sent this information to the FIFe list regarding the subject of distinguishing chocolate from cinnamon and kindly sent me additional information for this article:

"Actually, some male judges *are* red-green color-blind in different degrees (no, I am *not* joking here, it is simply reality that 1 in 10 males has the trait on the X chromosome!). These judges all *do* have problems distinguishing reddish nuances in cats and consequentially then later influence opinions in discussions and decision making. This became f.e. very clear when a known Dutch red/green color-blind judge was commenting on how difficult it was to distinguish between chocolatepoint and cinnamonpoint Siamese a couple of years ago while the cats on the table he was comparing were clearly different to the normal eye and we all were puzzled what he was trying to explain as *we* saw something quite different! This was during the official FIFe-recognition show of cinnamon/fawn ORI/SIA.

On the other hand I also noticed that some ABY/SOM breeders do make mistakes in determining chocolate from cinnamon and sometimes the strong wish to "see" chocolate can blur the reality a bit. It is of course sometimes difficult to distinguish hairs of a ticked tabby cat well. People then take parts of the coat that are not relevant. I strongly advise people ONLY to use guard hairs with clear ticking ends and preferably from the spot between the ears or a long clear topcoat hair from the tail and put those for comparison on a clear piece of white paper and evaluate them *in clear daylight* only. Unless you do this, errors in determining chocolate from cinnamon (or lilac from fawn) can easily lead to errors since there are many nuances anyway and a ticked tabby coat has many hairs of many nuances and only a clear ticked tabby tip of a guard hair should be used to determine things."



A picture of an Abyssinian family. From left to right: Leotie Little Guy, on top of RW SGC OD Leotie's Mox Ruby, both cinnamon, CH

Leotie Sirocco, chocolate, and Leotie Cocoa, lilac. Sirocco is the sire of both Little Guy and Cocoa, and Ruby is a multiple grand-aunt of the other three. Note the difference in the color on the top of Sirocco's head from that of Ruby and Little Guy.

Below are some pictures of Mariah, an Aby that was found wandering in Ocala, Florida in 2000. She was found on the streets when she was around 6 months old. The pictures show that this cat is a chocolate. Notice the dark eye and lip liner, the dark, not black, spine line and the tell-tale rosy pink paw pads. It is very unusual for photographs to show chocolate with such certainty at these. It would be real interesting to know where, and what lines, she originally came from.



Ambiguous Standards

The identification of color is further confused by the wording of Abyssinian standards. The CFA Standard for the ruddy calls for a coat "ticked with various shades of darker brown or black", "tail tipped with black", and that paw pads should be black or brown. The description for red calls for a coat "ticked with chocolate brown", "tail tipped with chocolate brown", and that the paw pads should be pink. Fawn calls for a coat "ticked with light cocoa brown", "tail tipped with light cocoa brown", and that the paw pads should be pink. The standard states that "off-color pads" are to be penalized and that "Any color other than the four accepted colors." should be disqualified.

The TICA standard for the ruddy calls for a coat "ticked with two or three bands of either black or dark brown", "tail to be tipped with black", and "paw pads to be black or dark brown". The description for sorrel (cinnamon) calls for a coat "ticked with cinnamon", "Tail tipped with cinnamon" and "Paw pads pink". Fawn calls for "a warm pinkish buff with powdered effect ticked with a deeper shade of pinkish buff", "tail tipped with a deeper shade of pinkish buff" and "paw pads to be pink-mauve". The standard states to penalize cats with "Wrong color or patching in pads."



Just by comparing these two standards it seems that in both CFA and TICA, a chocolate Aby could qualify as a ruddy, with the dark brown ticking. But both standards call for a black tail tip, and black or brown paw pads, which are not characteristic of chocolate. For the red color, the CFA standard more resembles a description for chocolate, actually using the word chocolate in the wording, while the TICA standard for sorrel clearly calls for a lighter color, cinnamon. Red, or sorrel, and chocolate Abys both have pink paw pads, so no real conflict there. There is even more a difference in the fawn

descriptions. Ticking is "light cocoa brown" in CFA, and "pinkish buff" in TICA. CFA does have the paw pad color correct, pink, while the TICA standard states "pink-mauve", a color that better describes the paw pad color of chocolates and lilacs. CFA tries to close the loopholes in their standard by disqualifying "any color other than the four accepted colors" without clearly identifying which genetic color the cats they call "red" should be. In all other breeds, and in all breeds in all other associations, red is the term used for the sex-linked phaeomelanistic color, not the eumelanistic colors, chocolate and sorrel (cinnamon), that are recessive variations of black. We can only assume that they mean red to be the same as what other associations call sorrel or cinnamon, since CFA chose to use the term "fawn" to call their dilute red Abys, the term used by all other associations for dilute sorrel or cinnamon. (Pictured, Abychat Cara Mia, chocolate female ©Rebecca Eagland)

Looking at Abys standards from associations based outside of the United States, where chocolate is an accepted color, we can get both further clarification, and a clue to some of the confusion. In the CCCA (Cat Co-ordinating Council of Australia), the standard for ruddy (called tawny there) states that the coat should be "ticked with black/dark brown", the tail "tipped with black", and the paw pads to be "black or brown". Chocolate should be "ticked with deep chocolate brown", while sorrel (called cinnamon there) should be "ticked with bright tan brown". Lilac should be "ticked with deeper lilac", and fawn should be "ticked with light cocoa brown". Tails are to be tipped with the same color as the ticking in all cases. Chocolate paw pad are to be "chocolate-pink", sorrel paw pads are to be "pink", lilac paw pads are to be "lilac-pink" and fawn paw pads are to be "rose beige". The NZCF (New Zealand Cat Fancy) standard for ruddy is very similar to the ones mentioned earlier. Chocolate is to be "ticked with dark chocolate brown" while sorrel is to be "ticked with chocolate brown". Paw pads are to be "pinkish chocolate or pink" and "pink" respectively. Lilac is to be ticked with a deeper shade of pinkish mushroom, and the pads to be "mauvish-pink". Fawn is to be ticked with a deeper shade of warm fawn, and the paw pads to be "pink or pinkish-tan". Both

these standards make a clear distinction between the chocolate/lilac and sorrel/fawn colors.



The British GCCF (Governing Council of the Cat Fancy) has the most exacting standard for the ruddy (called usual there). The ticking, tail tip and paw pads are to be black. Chocolate is to "ticked with dark chocolate", tail tipped the same, and the paw pads to be chocolate. Sorrels are to be "ticked with chocolate, tails tipped the same, and paw pads to be pink. Lilacs are to be ticked with a deeper shade of "warm (pinkish) dove grey", tail tipped in a "similar colour to spine", and paw pads to be "mauvish-pink". Fawn is to be ticked with a deeper shade of "warm fawn", tail tipped in a "similar colour to spine", and paw pads to be "mauvish pink". This standard shows one of the most obvious reason why chocolates have not been identified in the United States. The paw pads on a chocolate cat can vary from chocolate to almost pink, and should not be used as the sole indication of the actual color. In my expericence looking at chocolate cats, I've seen mostly pads that could be described as pink, tending toward a mauve shade.

(Pictured, Abychat Lilac Liberty, lilac female ©Rebecca Eagland)

Chocolate Genetics

The basis for most of my genetic knowledge is from college biology classes, my own reading and research, breeding experience, and numerous genetic seminars and presentations by TICA judge Gloria Stephens; Dr. Adriana Kajon, a TICA judge, formerly a researcher of viral pathology at the University of Georgia, and currently a research scientist at the Lovelace Respiratory Research Institute in New Mexico; and Dr. Heather Lorimer, Assistant Professor of Molecular Biology and Microbiology at Youngstown State University in Ohio, and breeder of chocolate and lilac Siamese and Oriental Shorthairs. Genetics, especially feline genetics, has not been as thoroughly investigated as other branches of science, and it seems that the more we discover about the mysteries of inheritance, the more we realize how little we actually know.

Jacques Le Renard, of Cattery des Fauve et Or in France, breeder of Somalis since 1988, is the owner of the [Electronic Register of Somalis](#) (E.R.o'S.) on-line pedigree database. He is currently a research director for the Museum National d'Histoire Naturelle in Paris, and a specialist in zoology, genetics, and scientific databases. He provided the members of the Chocolate Aby list with two different hypotheses on chocolate genetics:

"1.- The "usual" genotypic model. Here, the intrinsic colour of all cats is explained by one locus having three possible allelic states, namely: black (noted "B"), brown or chocolate (noted "b"), and cinnamon or light-brown (noted "b¹"). "B" is dominant over

"b", and over "b¹" ; and "b" is somehow dominant over "b¹" It is not excluded that a chocolate carrying cinnamon has a more or less intermediate phenotype.

2.- The "alternative" genotypic model. Here, there are two loci, each with two allelic states. Both loci could be situated on a same chromosome, or not. In this model, the intrinsic colour is either black or brown, with a modifier gene "diluting" black to cinnamon, and brown to a lighter shade of cinnamon when homozygous. This model allows more flexibility, and implies that four more or less different phenotypes could be present."

Ian Francis, breeder of [Van Gelre Somalis](#) in Lincoln, England, is a professional hospital consultant, and feels that his medical background helps in his understanding of feline genetics. He shared his views on chocolate genetics with the members of the Chocolate Aby list:

"My belief is that nowadays we do have three distinct alleles. Two of these have at some point in distant history originated from some selection process from a single brown allele, just as black and brown may well have separated even further ago. The distinction between the chocolate and cinnamon alleles is nowhere as distinct as between choc and black. Hence some considerable potential for confusion of colours. It may well be that the two 'brown' alleles may interfere somehow with each other in a heterozygous (choc-cinnamon) cat to produce a 'mixing' of colour density. Could this perhaps be some sort of incomplete penetrance? However, our own experience is that our choc-silver girls are heterozygous and display striking dark colour. The wide variation of colour in UK chocs could perhaps relate to some other modifier. Caramel (see below) is a possibility.

I think I am correct in saying that breeding with all three alleles has been going on for longest in the UK, and the experience of breeders working with all three colours has not disproven the presence of a series of 3 alleles of progressive dominance. Proving it however is far harder. Sorrels cannot carry choc or usual/ruddy. Choc can carry sorrel but not ruddy. It seems to work in real-life breeding, and to me that seems like proof, but is it enough?

If we move on to the fawn/lilac problems there is a further complicating factor, the caramel modifier, which is quite possibly in the breed as well. Whilst this gene can account for odd-coloured fawns (and blues), current belief is that it cannot effect a change in colour of non-dilutes as it modifies the dilution gene."

Recent Chocolate Findings



[GRC Ohmy Radio Star of Leotie](#), (pictured) the product of two CFA and TICA registered red, or sorrel, Abys, has a distinctly darker tail tip and ticking than any of the sorrels I have ever remembered owning. There is not a black hair on this cat's body. Her paw pads are a dirty pink. Compared to a cinnamon sorrel only, she looks almost ruddy, and when compared to a ruddy, looks sorrel. Examination of her parents revealed that her dam was of the bright color that I was the

most familiar with, and that the sire, [CH Ohmy Red Radio Flyer](#), had the darker tail tip that resembled his offspring. I had handled both of these cats during training for my judge's licence, one each on two different occasions. I did not notice the darker ticking on the sire at the time I saw him.

I took Radio Star to a TICA show in Delaware, Ohio in March of 2001, along with a sorrel, [RW QGC Leotie's Rubaiyat](#), and a near handful of ruddies. I specifically asked the opinion of two very experienced judges, Don Caruthers and Connie Webb, who both agreed that Star was not ruddy, or sorrel, but probably chocolate. One of the judges I asked about the color, had judged both cats as sorrels the day before. I went up to the judge with both my sorrels and asked if they were the same color. The judge's first response, pointing to Radio Star, was "That's a ruddy." Of course, then when compared to a ruddy, it was apparent that she was not. Candice Massey was there with some of her chocolate Havanas, and was willing to do some direct tail tip to tail tip and paw pad to paw pad comparisons. The colors matched exactly.

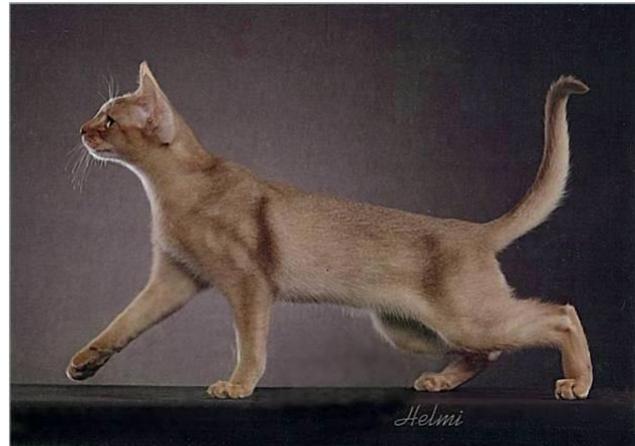
I took Radio Star and 4 Abys of the standard colors to a TICA judging school in Waukesha, WI in April of 2001, taught by Connie Webb with 9 participants. Only Connie and I knew there was a chocolate in the group. The sorrel color was represented by [RW SGC Leotie's Mox Ruby, OD](#). Fawn was represented by [RW QGC Leotie's Iskandar](#), twice TICA's International Best Fawn Abyssinian, and 11 years old at the time. Two ruddies were also there, [RW SGC Leotie's Tiamat](#), and [CH Leotie's Moon Shadow](#). There were several judges of varying experience present at this school besides myself and Connie Webb. We did an exercise in determining the color of each of the Abys present, with the premise that none of us had ever seen an Aby before. A color chart, developed from the TICA color descriptions, and the Aby standards from TICA, CFA, the British Governing Council of the Cat Fancy (GCCF), and the Australian (RASCC), were used as a reference. These last two were included since both have chocolate and lilac described in their Abyssinian standards. Every participant, including the non-judges, identified Radio Star as being chocolate, and identified the other colors correctly as well.

A breeding to Radio Star by my sorrel male, [TGC Leotie's Sultan](#), resulted in what appeared to be 2 chocolate females and a sorrel male. Unfortunately, this was an emergency c-sect, no kittens survived, and Star was diagnosed and treated for a uterine infection. A repeat breeding resulted in a miscarriage due to a re-occurrence of the infection. As of this date, I have not been able to get another litter from her. She was later spayed and placed in a pet home.

In the meantime, Pat Harbert of [Ohmy Abyssinians and Bengals](#) did a breeding with the sire of CH Ohmy Red Radio Flyer, [Winwalker Gaby Haze of Ohmy](#), a ruddy, to the sorrel girl, [CH Leotie's Dragonsong of Ohmy](#), that she had gotten from me, and produced a litter. In August of 2001, I got to see one of the cats from this litter. [CH Ohmy Ali Katzam of Gateway](#) had the same darker ticking, tail tip, and brown lips seen on Radio Star. This made the grandsire of Radio Star, Winwalker Gaby Haze of Ohmy, the carrier of the chocolate gene in this line. Being a ruddy made it simple to determine which of his parents supplied the chocolate gene using the usual genetic model of three distinct alleles. His dam is a blue, a dilute ruddy, so she contributed the dominant gene for ruddy. His sire is a sorrel, [Highsteppers Big Red of Kimoci](#). The recessive chocolate gene carried by Gaby Haze had to come from this cat, and because of that, it can be

concluded that Big Red was actually chocolate, not sorrel. From this it can also be concluded that the fawns, [RW SGC Ohmy Dragonfly](#) and QGA Ohmy Nikko, from the same litter as Ali Katzam, are actually lilac.

In May of 2002, these three members of this litter were present at a show in Oklahoma City. After judging on Sunday, we were able to get them all together, along with a chocolate kitten from a repeat of the same breeding. Also present was [CH Ohmy Nile Dragon of Leotie](#), a lilac male out of CH Leotie's Dragonsong of Ohmy, sired by CH Ohmy Red Radio Flyer. Additionally for comparison we had CH Leotie's Renaissance, a sorrel female, and



Leotie's Platinum of Kittyharbor/Ohmy, a fawn silver female. Pat Harbert, Patricia Loynd of [Gateway Bengals](#), owner of Ali Katzam, and myself were there to present them to Sue Becknell-Bower (Von Becknell cattery) and Maureen Nottingham (Nile cattery (US)), both TICA Allbreed judges and Aby breeders. We did tail tip and paw pad comparisons with the cats. The difference between the tail tips of Ali Katzam and Renaissance was very noticeable. Both Sue and Maureen agreed that Ali was chocolate, not ruddy or sorrel. When looking at the tail tips of the 3 lilacs, Dragonfly's and Nile's were the exact same color, while Nikko's was a rosier shade. Following the established model for inheritance, if his litter mates are chocolate and lilac, then he also has to be lilac. The difference can be attributed to the effects of the rufus polygene, or the theoretical caramel modifier gene. Nikko's tail tip and Platinum's were very close in color, showing that the ranges of phenotypic expression of lilac and fawn can overlap. Pictured is Ohmy Tishamingo, lilac male.

Pedigree Research

Pedigree research can give us clues as to where the chocolate gene could have descended from in these Aby lines. My personal Aby database has more than 6500 cats, and is by no means complete for the breed. I have made the effort to track back, to the foundation of the breed, the cats I have in my breeding program, and also of these found chocolates. This has been the work of many years, and the people who contributed information to it are too numerous to mention. The members of the Shorthair Linechasers e-mail list at Yahoo groups have been very helpful. In some cases certified pedigrees were used for the information on some cats. I also have used on-line sources of Abyssinian pedigree information: the [Baton Rouge database](#) has just over 24,000 Abys; the [Clarion database](#) has over 8000 Abys; and the [Electronic Register of Somalis](#) (E.R.o'S.) has more than 30,000 Abys and Somalis in it's database.

I did a study of the complete ancestry of the chocolate/lilac Aby line positively identified so far. The pedigree of [Highsteppers Big Red of Kimoci](#) is complete to the breed foundation, with 771 different cats. I do want to point out that none of the Burmese or Siamese crosses done in the 1970's appear in this cat's ancestry. Two cats are of particular interest:

DHMAHL'S DIABLO HIGHSTEPPERS LONER

These two cats, born in the 1980's, are both registered as red, or sorrel. One, or both of these cats, had to be chocolate. There is a color picture of Diablo in the 1986 TICA yearbook, and even though color identification using pictures is unreliable, I can look at it and believe this cat is chocolate. The picture shows a very dark tail tip, dirty pink paw pads, and possible eye liner. It may be that the legend of the "Diablo" red is a red herring, in several instances Diablo was bred to a descendant of Loner. TICA judge Penny Garrett, Pengar cattery, upon seeing [CH Ohmy Nile Dragon of Leotie](#), and learning of this theory, told me that she thinks that a fawn she bred, [Pengar's Goldie Hawn](#), descended from Loner on both side of her pedigree, was probably really a lilac. I do not have a complete pedigree for this cat, so I am unaware if Diablo appears or not.

Looking at the pedigrees of these two cats, it is seen that Diablo received one of his two non-ruddy genes from [GRC Badfinger's Genesis of Catknapp](#), via ruddy [GRC Badfinger's Bumin' Around TQ](#), and the other through his ruddy dam, [CH Abanth's Sabra of Dhmahl](#). Loner received one of his two non-ruddy genes from his maternal grand-dam, [GRC Helium's Misfire](#), who gave the gene to her ruddy daughter, [QGC Helium's Meg of Highsteppers](#). The other non-ruddy gene carried by Loner came from his sire, [CH Darken's The Red Machine](#). Red Machine in turn, received one of his color genes from [CH Mi-Si-Am Tangela](#), via her ruddy daughter, [CH Abv-Syn Samba Dancer of Tapp-An](#), and the other color gene from [GRC Thieroff's Flash Farkel](#), a color bred red, heavily inbred to [Taishun Kephra](#). A New Zealand red, [Finisterre Phara](#), appears on Flash's dam's side, along with an early American red, [CH Three-D Danny of Pallady](#). Danny appears in the pedigrees of both Diablo and Loner. All this illustrates is that the question of where the chocolate gene actually came from will probably never be answered to anyone's satisfaction, and all we can tell is that it is firmly incorporated into the breed.

Conclusion

Even if it can never be deduced exactly where the chocolate gene came from in the Abyssinian, it can be concluded with very little doubt that it has been present since the 1980's and likely since the 1960's and earlier. My theory on this matter is that chocolate has always been present in the Aby genepool, descending from Ras Brouk, or other cats that were used in the early years of the breed's history. The Burmese and Siamese that were used then could have easily contributed a chocolate gene that has been carried through the generations recessively, or unrecognized. In more modern times, it appears that both the chocolate and cinnamon variations have been registered as red in CFA and as sorrel in TICA. The ancestors found in the pedigrees of the found chocolates and lilacs that are the basis for this article are common ancestors to almost all Abys alive today. There is no recorded evidence of hybridization. The differing traits are being expressed in the same manner as currently recognized for the black/chocolate/cinnamon series of alleles. Paw pads and tail tips on the non-conforming Abys are not the same color as seen on a cinnamon sorrel Aby, but are identical to those of a chocolate Havana. Direct comparison shows that the tail tip and paw pads of a cinnamon ticked tabby Oriental Shorthair are the same color as a true sorrel Aby.



Many people who have been contacted who have not seen these found chocolates and lilacs, or have seen them labeled as sorrel and fawn, do not believe they are truly chocolate and lilac. This is extremely frustrating, but their scepticism can be understood. Unless one can actually physically see a suspected cat and are looking for differences in color, it makes sense to reserve judgement. It can

be interesting to research the pedigree to see how many similarities with the found chocolate lines show up in the ancestry. It's very possible that either the chocolate or sorrel genes are more frequent in different parts of the country. Where one has seen mostly chocolate and lilac Abyssinians labeled as sorrel and fawn, there is no realization that the examples are not really sorrel and fawn, and the lighter colors could be considered pale or washed out. Conversely, where the true sorrel and fawn predominate, the darker chocolate and lilac can easily be explained away as being heavily rufused examples of sorrel and fawn. In the case of chocolates, some may see them as color faulted ruddies, having pink paw pads. Lilacs may actually have been selected over true fawns in breeding programs and the judging ring, as the color shows off the contrast of the ticking much more distinctively than the true fawns. This picture is of Leotie Little Guy, cinnamon, and Leotie Cocoa, lilac.

Breeder's reactions to the thought of chocolate Abyssinians is varied. The very best of them have the opinion of "to each his own". Others have such a negative reaction that they threaten legal action against those who wish to have naturally occurring chocolates and lilacs re-registered as their correct color. Others see the acceptance of these colors as the first, or next, step in the destruction of the breed. Some will stoop to slander, making claims that breeders are not claiming the true parentage on cats from non-accepted out crosses, and that any pedigree from those breeders is likely false. They seem to feel a breeder who is openly working with these colors would also falsify pedigrees to "sneak" those colors in. There is no logic to this, just emotions and prejudice. These negative opinions seem to be deliberate attempts to obscure the truth, and influence the less informed. Chocolate is in the US Aby genepool, and not the product of known out-crosses. Open-minded judges, breeders, and geneticists who have seen these cats, and asked about their color at the time they see them, agree that they are chocolate and lilac. What is being seen is not just the variable effects of the rufus polygene, or the "fevered imaginations" of wishful thinkers.

The cats themselves really don't care what color they are. The "Aby-ness" of these cats is not affected in the slightest. They have the same origins and heritage of most Abyssinians born today. TICA is a genetic registry, and these cats should be registered in it as their correct genetic color, not continue to be mis-labeled as sorrels and fawns. In writing this article, I have not discussed the silver varieties of the colors. The observations on color made in this article also apply to



the silvers, though there seems to be an actual or visual effect where the ticking on a sorrel silver will appear darker than expected. This is either caused by an effect on the deposition of melanin granules by the silver inhibitor gene, or an optical effect created by the increased contrast between the ticking and the ground color. In these cases, the tail tip is still the most reliable indicator of the actual color. Pictured are littermates CH Ohmy Deep Deuce Latta, chocolate silver, and Ohmy Maria TallChief, chocolate. Both these girls have been genetically confirmed as having the chocolate gene. The suppositions I have made about the possible sources of the chocolate gene in this article are just that. Future findings may prove or disprove these theories. Any theory is open to modification, and can evolve as new information is brought to light. Discoveries are not made by closed minds, and their nay-saying won't change the facts. Others will consider the facts and theories encompassed by this article, and chocolate and lilac will no longer be the unseen Abyssinian colors.