

Guides for Judges and Exhibitors

Fifth Edition

2021



An almost complete list of

Breeds & Colors



Lesli Kathman

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Assessing Color and Breed

In model horse competitions, the goal is to faithfully recreate the equestrian world in miniature. It is what exhibitors strive to do and what judges consider when evaluating a table of entries. One aspect of that evaluation is whether the color of the model is realistic. In order to assess this, a judge must be able to distinguish between visually similar (but often genetically distinct) colors and patterns and determine whether or not the color depicted on the model is suitable for the breed the entrant has assigned. This task is complicated by the fact that many participants—who are at heart collectors as well as competitors—are attracted to pieces that are unique or unusual.

So how does a judge determine which colors are legitimate for a particular breed and which are questionable or outright unrealistic? When it comes to the range of colors within each breed, there are three basic considerations. Breeds are limited by the genes present in the population (what is possible), by any restrictions placed by their registry (what is permissible), and by what is counted as a fault in breed competitions (what is penalized). The first is pretty absolute in any venue where realism is considered, while the latter two have some room for interpretation.

What is *possible*?

In any breed with a closed stud book, the range of color is limited by the genes found within the existing population. In these cases, the registry may not have official prohibitions against certain colors. For example, the Arabian registry does not restrict the colors for that breed. In theory, an Arabian could be any color. In actual practice, the breed has a number of limitations simply because some colors, or even entire categories of colors, are not part of their closed gene pool. The problem is not that the colors are prohibited, but that depicting them on a purebred is unrealistic. In the context of competitive model horse events, where realism is the primary criteria, that is a more serious issue than violating a registry rule. Most judges consider this a non-negotiable limitation.

What is *permissible*?

In other situations, the issue is not so much which genes are present, but how a color is viewed by the governing body for the breed. When a color is considered undesirable, one approach that a breed club can take is to deny registration. At its most extreme, this can mean that a horse is not recorded or in any way acknowledged. In other cases, horses of undesirable coloring are given limited registration status, either in a separate and lesser section of the stud book or with restrictions placed on their inclusion: often gelding or spaying. Sometimes full registration status is granted, but the registration papers carry a notation that the horse has a serious fault.

Remember

Three things can change the list of possible colors found in a particular breed:

- the discovery of unexpected colors in obscure or “lost” lines
- the appearance of genes previously hidden (usually by the action of other genes)
- new mutations.

Upgrading or outcrossing schemes also bring in new possibilities—some intentional and some not. For that reason, any list of possible colors should be considered provisional, especially in breeds with open stud books or large, poorly documented founding populations.

What is *penalized*?

At the moment, the most widely used approach registries take to regulate undesirable colors is the use of show ring rules. Instead of restricting colors at the studbook level, registries can require that certain colors be penalized in the show ring. Typically these kinds of rules apply to breeding classes, but not to halter classes for geldings or classes where the horse is shown under saddle or in harness.

Penalized should not be confused with stigmatized. Colors can be viewed as undesirable by breeders because they violate their perceived notion of “tradition”. The problem with this type of penalty is that it is subjective and hard to quantify. Opinions about what is proper can vary, but faults that have wide agreement get put into writing.

Two different schools of thought...

Imagine a model with a blaze like the Cleveland Bay mare below. The breed standard for Cleveland Bays only permits a small star. How does a judge weigh a trait that is genetically possible but officially penalized?

The answer to this question depends on the judge's frame of reference. There are two basic schools of thought when it comes to evaluating model horses. The first and oldest is the "role-playing school." Judges using this approach view entries as if they were real horses entered in a halter class for their breed. The show itself is, in effect, a tabletop simulation of a horse show. For these judges, registry rules carry great importance when placing non-standard colors.

More prevalent today is the "miniaturist school." Judges with this perspective tend to view breed classes as a logical way to divide entries into manageable groups but do not treat them as classes at a horse show. Entries are expected to accurately reflect their breed but not necessary show ring examples of it. For miniaturist judges, realism carries greater importance than show ring standards.

Entrants wishing to show models with non-standard coloring are well-advised to use documentation under either type of judge. In the example of the Cleveland Bay mare with excessive white, those showing under role-playing judges may also consider including a notation that they are depicting an entry at an open show.

Why studbooks matter

The structure of the studbook helps to determine the answer to that first question about possibilities. In the breed summaries that follow the charts, the system used is noted. Here is what each one means.

Closed studbooks

A closed studbook means that only offspring from registered parents are included in the breed. This is what many people assume being a "real" breed means, especially if their understanding of breeding and exhibiting animals comes from dogs and not livestock. In actual practice, truly closed studbooks are uncommon in the horse world.

Studbook with a grading scheme

This is probably the most common system for horses. Grading schemes allow horses (usually mares) that are not part of the existing population—either because they were never registered or because they did not meet necessary requirements for full registration—to have their descendants included. Grading registers are also used as a way to retain horses that have non-standard colors, which puts these horses in a gray area for entrants and judges.

Studbooks with outcrossing

Studbooks that allow direct outcrosses consider the first generation cross to have full status (or at least close to full status) as members of the breed. Outcrossing was more common in the past but is less so now.



Open studbooks

An open studbook accepts horses that are not descended from registered parents. This does not mean there are no requirements. Indeed, many open studbooks have more stringent requirements than closed books: inspections, performance tests, genetic tests. This can also serve to limit available colors, if horses must get approval to enter the breeding population.

Landrace

These are the breeds not governed by an organization or government. Without written rules determining inclusion, there can be conflicting information about which colors are legitimate for the breed.

The Breed Color Charts

The following charts are designed to be used as a quick, at-a-glance reference. More specific information can be found in the breed summaries that follow, and extensive details can be found in the *Equine Tapestry* book series. For the purposes of these charts, every effort is made to use genetic tests for final verification of colors. However, for colors that do not yet have a test, or where testing is not widely used, designations are based on visual identification using strict criteria for phenotype.

Definitive

The color is considered a defining point of the breed. This does not necessarily mean that other colors do not occur or that they are not recorded, though in some breeds only the definitive color is granted full registration status.

Present

These are colors that are found within the breed. The frequency within the population may vary, but generally this means more than one individual or small family can be found. When frequency cannot be readily determined, this is the default.

Rare

Rare colors are those considered very unusual for the breed, but are confirmed as present. For some listings, this can mean just one individual exists. A primary purpose of this designation is to alert readers that finding references may be difficult.

Suspected

Although not confirmed by testing, the color is suspected to be present based on phenotype or presence in related breeds.

Unknown

Colors that cannot be proven to exist in the breeding population are listed as unknown. For some entries, this can mean it is pretty certain that a color is not, and has never been, part of the breed. For others, there was not enough information to conclusively prove or disprove the existence of a color. This designation is also used when colors or patterns that mask the presence of other colors (like grey) are common. Because new discoveries are always possible, reasonable consideration should be given to entries with persuasive documentation contradicting this designation.

Restricted

These colors are subject to official limitations by the registry. This can mean that the color is barred from either registration or is penalized in the show ring. These rules do not always encompass the full range of phenotypes within a color category, so the breed summary should be consulted for more complete details. Passive restrictions—that is, lists of specific *accepted* colors—are not reflected in this designation, but are explained in the breed summary.

Historical

Historical colors are those thought to have been part of the breed but have been lost over time. Because this is often based on stud book records, old photographs and artwork, these designations are speculative.



1. Wild bay dun (without mealy)



2. Bay with frosted mane



3. Chestnut with flashy markings



4. Chestnut "sabino roan" (W22)

	Bay	Brown	Black	Chestnut	Mealy	Sooty	Flaxen	Grey	Roan	Ticked
Fell Pony	Blue	Blue	Green	Red Triangle	Yellow	Green	Yellow	Blue	Brown	Brown
Finnhorse	Blue				Green			Green	Blue	
Frederiksborg					Yellow			Blue	Yellow	
Freiberger			Blue					Blue		Blue
French Trotter								Blue	Blue	Yellow
Friesian	Brown	Brown	Green	Red Triangle	Yellow			Brown	Brown	Brown
Furioso-North Star			Blue	Blue		Green		Green	Yellow	Yellow
Galiceño								Brown	Green	Blue
Garrano			Yellow							Yellow
Gelderlander	Blue		Blue					Blue	Brown	
German Classic Pony								Yellow		Yellow
Gotland Pony								Brown		
Groningen				Blue	Yellow			Blue	Blue	
Gypsy Horse					Blue			Green	Green	Yellow
Hackney					Yellow		Blue	Brown	Blue	Green
Haflinger	Brown	Brown	Green	Green	Green	Red Triangle	Green	Yellow	Yellow	Red Triangle
Hanoverian					Yellow		Blue	Green	Yellow	
Highland Pony				Blue	Blue					
Holsteiner				Blue	Yellow		Blue		Yellow	
Hungarian Coldblood									Green	
Huzul				Red Triangle			Yellow	Red Triangle	Red Triangle	Red Triangle
Icelandic					Blue			Green	Green	
Irish Draught			Blue		Yellow					
Italian Heavy Draft	Blue	Yellow							Green	
Jutland	Blue	Blue	Blue		Green			Brown	Brown	
Kathiawari/Marwari					Blue					
Kerry Bog Pony					Yellow				Blue	
Kinsky	Blue							Yellow		
Kisbér Félvér				Blue			Blue	Green		Red Triangle
Kladruby	Blue	Yellow	Green	Blue				Green		
Knabstrupper								Blue	Red Triangle	
Konik	Red Triangle	Red Triangle	Green	Red Triangle	Green	Blue		Green	Red Triangle	Yellow
Landais					Yellow			Brown		Blue
Lewitzer							Blue	Red Triangle		
Lipizzaner				Blue			Yellow	Green	Blue	
Lundy Pony			Yellow	Brown	Brown				Brown	
Lusitano									Blue	
Malopolski							Blue		Blue	Blue
Mangalarga								Blue	Blue	Green
Marchador					Blue				Green	Blue
Mérens Pony	Green	Brown	Brown	Red Triangle	Yellow			Yellow	Yellow	Blue
Miniature Horse									Green	Green
Missouri Foxtrotter					Yellow					Yellow
Morgan					Blue			Blue	Blue	Blue
Moroccan Barb									Blue	
Mountain Pleasure	Blue	Blue			Yellow			Blue	Blue	Yellow
Murgese	Yellow	Yellow	Green					Yellow	Blue	Red Triangle
Nat. Spotted Saddle								Blue	Blue	
New Forest Pony									Green	Blue
Nonius	Blue	Blue			Yellow					
Nordland								Yellow		
Noriker					Blue			Yellow	Green	Blue
Norman Cob			Yellow				Blue			

	Bay	Brown	Black	Chestnut	Mealy	Sooty	Flaxen	Grey	Roan	Ticked
Norwegian Fjord										
NA Spotted Draft										
North Swedish										
Oldenburg										
Orlov Trotter										
Paint										
Paso Fino										
Percheron										
Peruvian Horse										
Poitevin Mulassier										
Polish Coldblood										
Pony of the Americas										
Pottok										
Quarter Horse										
Rocky Mountain										
Russian Bashkir										
Saddlebred										
Selle Francais										
Shagya										
Shetland Pony										
Shire										
Silesian										
Sorraia										
Spanish Colonial										
Standardbred										
Suffolk										
Swedish Ardennes										
Tarpan (Heck Horse)										
Tennessee Walker										
Tersk										
Thoroughbred										
Tori										
Trakehner										
Vladimir Draft										
Vyatka										
Welsh Pony (A/B)										
Welsh Cob (C/D)										
Wielkopolski										
Yakut										



5. Brown



6. BendOr spotting



7. Classic splashed white

	Dun	Non-Dun	Cream	Silver	Champ	Alt Cream	Varnish	Leopard	Blanket
Norwegian Fjord									
NA Spotted Draf									
North Swedish									
Oldenburg									
Orlov Trotter									
Paint									
Paso Fino									
Percheron									
Peruvian Horse									
Poitevin Mulassier									
Polish Coldblood									
Pony of the Americas									
Pottok									
Quarter Horse									
Rocky Mountain									
Russian Bashkir									
Saddlebred									
Selle Francais									
Shagya									
Shetland Pony									
Shire									
Silesian									
Sorraia									
Spanish Colonial									
Standardbred									
Suffolk									
Swedish Ardennes									
Tarpan (Heck Horse)									
Tennessee Walker									
Tersk									
Thoroughbred									
Tori									
Trakehner									
Vladimir Draft									
Vyatka									
Welsh Pony (A/B)									
Welsh Cob (C/D)									
Wielkopolski									
Yakut									



8. Chestnut tostado



9. Bay with silvered cannons



10. Wild bay

	Bragada	Patchy	Sab.Roan	White	Sabino1	SW1	Splashed	Tobiano	Frame	Manchado
Norwegian Fjord										
NA Spotted Draft										
North Swedish										
Oldenburg										
Orlov Trotter										
Paint										
Paso Fino										
Percheron										
Peruvian Horse										
Poitevin Mulassier										
Polish Coldblood										
Pony of the Americas										
Pottok										
Quarter Horse										
Rocky Mountain										
Russian Bashkir										
Saddlebred										
Selle Francais										
Shagya										
Shetland Pony										
Shire										
Silesian										
Sorraia										
Spanish Colonial										
Standardbred										
Suffolk										
Swedish Ardennes										
Tarpan (Heck Horse)										
Tennessee Walker										
Tersk										
Thoroughbred										
Tori										
Trakehner										
Vladimir Draft										
Vyatka										
Welsh Pony (A/B)										
Welsh Cob (C/D)										
Wielkopolski										
Yakut										



11. Spontaneous roan



12. Rabicano



13. Bay "sabino roan"

White markings, pattern modifiers and eye color

Solid horses have no white. The second two columns refer to “ordinary” white markings not associated with any of the pinto patterns: stars, strips, pasterns and socks. Flashy markings refer to broad blazes and high stockings. Badger faces have a large colored patch that overlaps a face marking. Belton spots are small, round spots visible across white markings or patterns. The *Cryptic* modifier dramatically reduces the amount of white patterning expressed. Blue eyes do not include those from blue-eyed creams. Tiger eyes are golden eyes on a non-diluted color. Breeds that do not allow any white have solid as Definitive and all markings listed as Restricted.

	Solid	Face	Legs	Flashy	Badger	Belton	Cryptic	Blue eyes	Tiger eyes
Akhal-Teke	Blue	Green	Green	Green	Blue	Yellow	Yellow	Green	Yellow
Altai	Green	Green	Green	Blue	Yellow	Yellow	Purple	Blue	Yellow
Am. Bashkir Curly	Green	Green	Green	Green	Yellow	Yellow	Yellow	Blue	Yellow
American Belgian	Blue	Green	Green	Green	Yellow	Yellow	Yellow	Blue	Yellow
Am. Cream Draft	Green	Green	Green	Green	Yellow	Yellow	Yellow	Blue	Yellow
American Shetland	Green	Blue	Blue	Blue	Yellow	Yellow	Green	Blue	Yellow
Andalusian (PRE)	Green	Green	Green	Blue	Yellow	Yellow	Yellow	Blue	Yellow
Appaloosa	Green	Green	Green	Green	Yellow	Yellow	Yellow	Green	Yellow
Arabian	Green	Green	Green	Green	Yellow	Yellow	Yellow	Blue	Red
Ardennes	Green	Green	Blue	Yellow	Yellow	Yellow	Yellow	Blue	Yellow
Asturcón Pony	Green	Red	Red	Red	Yellow	Yellow	Yellow	Blue	Yellow
Australian Pony	Green	Green	Green	Green	Yellow	Blue	Purple	Blue	Yellow
Australian Stock	Green	Green	Green	Green	Yellow	Blue	Purple	Yellow	Yellow
Bañei Horse	Green	Green	Green	Blue	Yellow	Yellow	Yellow	Blue	Yellow
Banker	Green	Blue	Blue	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Bardigiano	Green	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Belgian Brabant	Green	Green	Green	Brown	Yellow	Yellow	Yellow	Yellow	Yellow
Black Forest Horse	Blue	Green	Green	Green	Blue	Yellow	Yellow	Red	Yellow
Boulonnais	Green	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow
Breton	Blue	Green	Green	Red	Yellow	Yellow	Yellow	Blue	Yellow
British Riding Pony	Green	Green	Green	Blue	Yellow	Yellow	Yellow	Yellow	Yellow
British Spotted Pony	Green	Blue	Blue	Yellow	Yellow	Yellow	Purple	Blue	Yellow
Budyonny	Green	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow
Byelorussian Harness	Green	Green	Green	Blue	Yellow	Yellow	Yellow	Blue	Yellow
Camargue	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Campolina	Green	Green	Green	Blue	Yellow	Blue	Yellow	Yellow	Yellow
Canadian Horse	Green	Blue	Blue	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Caspian	Green	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow
Chincoteague	Green	Green	Green	Green	Yellow	Blue	Purple	Green	Yellow
Cleveland Bay	Green	Red	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
Clydesdale	Brown	Brown	Brown	Green	Blue	Yellow	Yellow	Green	Yellow
Coldblood Trotter	Green	Green	Green	Green	Yellow	Yellow	Yellow	Green	Yellow
Comtois	Green	Red	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
Connemara	Green	Green	Green	Blue	Yellow	Yellow	Yellow	Blue	Blue
Criollo	Green	Green	Green	Green	Blue	Blue	Yellow	Blue	Yellow
Dales Pony	Green	Red	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
Dartmoor Pony	Green	Blue	Blue	Red	Yellow	Yellow	Yellow	Yellow	Yellow
Døle	Green	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow
Dülmen Pony	Green	Blue	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Dutch Harness	Blue	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow
Dutch Warmblood	Green	Green	Green	Green	Yellow	Yellow	Yellow	Blue	Yellow
Eriskay Pony	Green	Red	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
Estonian Draft Horse	Blue	Green	Green	Green	Yellow	Yellow	Yellow	Blue	Yellow
Estonian Native	Green	Blue	Blue	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Exmoor Pony	Green	Red	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow
Felin Pony	Green	Green	Green	Blue	Yellow	Yellow	Yellow	Blue	Yellow

	Solid	Face	Legs	Flashy	Badger	Belton	Cryptic	Blue eyes	Tiger eyes
Norwegian Fjord									
NA Spotted Draf									
North Swedish									
Oldenburg									
Orlov Trotter									
Paint									
Paso Fino									
Percheron									
Peruvian Horse									
Poitevin Mulassier									
Polish Coldblood									
Pony of the Americas									
Pottok									
Quarter Horse									
Rocky Mountain									
Russian Bashkir									
Saddlebred									
Selle Francais									
Shagya									
Shetland Pony									
Shire									
Silesian									
Sorraia									
Spanish Colonial									
Standardbred									
Suffolk									
Swedish Ardennes									
Tarpan (Heck Horse)									
Tennessee Walker									
Tersk									
Thoroughbred									
Tori									
Trakehner									
Vladimir Draft									
Vyatka									
Welsh Pony (A/B)									
Welsh Cob (C/D)									
Wielkopolski									
Yakut									



14. White ticking (*salpicada*)



15. Chestnut "patchy sabino"



16. Bay frosty roan (*atypical*)

The Breed Summaries

Akhal-Teke

closed studbook

Akhal-Tekes have all four basic colors: chestnut, bay, brown and black. Shades tend to be brighter or deeper, and sootiness is very common. Dark shading on the forehead is often seen, and contrast between the shoulder and barrel can be very stark. Flaxen chestnuts are rare, while chestnuts with dark manes and tails are more common. The golden chestnut with dark red points typical of some of the Russian breeds can also be found. Greys vary with vivid dappling, fleabites, chubari spots, mismarks and blood-marks. Although rare, rabicano patterning can be found. The cream dilution is common, and blue-eyed creams are accepted. The intermediate dun allele, *non-dun1*, is likely responsible for individuals with primitive markings. True dun is believed to be absent. All colors can have a metallic sheen, though it tends to be most noticeable in palominos, buckskins and light bays. Blue eyes occur with surprising frequency. These are often paired with irregular stars and snips, but the full classic splashed white pattern has not been documented. Sabino markings are sometimes seen, but the edges tend to be crisp—not lacy or roany—and white on the body is rare. A few individuals have had badger markings. The full range of ordinary white markings can be found, though there is a tendency for more white on the legs than the face. Solid, unmarked individuals are unusual.

Altai

landrace

The Altai is found in all four basic colors: chestnut, bay, brown and black. Grey is present, and dark-headed roan individuals are sometimes seen. As with many of the rustic Russian breeds, dun is common. Appaloosas are common and the vast majority are leopards or near-leopards. Tobiano is present and is often minimized, suggesting that the *Cryptic* modifier may be present. It is not unusual to see tobiano-leopard pintaloosas. There have been examples of bragada sabino and a minimal sabino roan, but sabino phenotypes are not typical. Most Altai are unmarked or have only minimal white on the face, and white legs are rare unless the horse is a tobiano. Blazes are more common on tobianos and one had a blue eye.

American (Bashkir) Curly

studbook with grading scheme

American Bashkir Curlies come in all four basic colors with a full range of shades and variations. Grey and roan are present and white ticking is sometimes seen. Dun and cream are present, and champagne is found in some of the Missouri Foxtrotter lines. Silver is seen rarely among smaller Curlies of obvious pony type. All types of appaloosas patterns are present and pintaloosas are not penalized. Tobiano, frame, and all four sabino phenotypes are present. Because many of the sabino roan Curlies are Missouri Foxtrotters, it is likely that *Sabino1* is present although this has not yet been confirmed by testing. There is a full range of white markings, from unmarked solids to fully white faces and high stockings. Blue eyes are occasionally seen.

American Belgian

closed studbook

The American Belgian is overwhelmingly chestnut. Shades tend towards the paler end of the spectrum and the mealy pattern is common. Flaxen manes and tails are more common than self-colored. Extensive dappling is sometimes seen. Sootiness is uncommon. Bay and brown are rare and are almost always paired with dark-headed roan. A few blue roans have been recorded in the present population but not non-roan black. Usually the gene for bay or black comes from a recent import, so horses of those colors are more like a Brabant in type. Roan in pure American lines is rare. Frosty roan is sometimes seen. There were greys among the early imports but that color was lost over time. Some of the palest flaxen mealy chestnuts have a body color lighter than the average palomino, but the cream dilution is not present. Silver is present but tends to remain hidden until the breed is crossed with something that carries bay or black. Flashy white markings are common. Phenotypes that fall somewhere between sabino roan and spontaneous roan are found, but body spotting is relatively rare. Blue eyes are rare but they have occurred in individuals with sabino-type patterns.

American Cream Draft

studbook with grading scheme

The definitive color for the American Cream Draft Horse is gold champagne. Horses in the main section of the studbook are genetically chestnut. Because the standard calls for a cream coat, pink skin and amber eyes, most also carry the champagne gene. There have been palomino and even pale blonde chestnut horses registered in the past, and some portion of the population carries both the champagne and the cream gene. In general, cream champagnes are paler than gold champagnes, but as long as the eyes are hazel and not blue-green they qualify for full registration. Cremello mares, as well as those with dark skin, can be used in the grading scheme but do not have full studbook status. The breed standard states that white markings are desirable, and blazes and socks or stockings are common.

American Shetland Pony

closed studbook

All four basic colors are present, with bay and black the most common. Wild bay and sooty are present, but the mealy pattern is rare. Some chestnut ponies have flaxen points, though many ponies described as blonde sorrel are actually bays with the silver dilution. Grey is present but is rumored to have come from undocumented crossing to Welsh Ponies. Dark-headed roan is present. White ticking is rare except in ponies with one of the sabino patterns. Appaloosa patterns are prohibited, though it is rumored that Miniature Horses with the pattern were slipped in and that the color persists in some grey lines where the aging process hides them. The silver dilution is common, though speculation that the mutation originated in the breed proved to be mistaken. The cream dilution is present, and blue-eyed creams are accepted. Dun is rare. Tobiano

is common, and the prevalence of minimal patterns and dark legs suggest that the breed carries the *Cryptic* modifier. At least three frame overo stallions were slipped into the registry. Although their pattern is proof of non-Shetland blood, their descendants were grandfathered into the studbook and are accepted as purebred. *Sabino1*, which is not known to exist in the British pony breeds, has been confirmed by testing. Not all white ponies have tested to be homozygous for *Sabino1*, so it is possible that another form of white spotting (*W*) is present. The presence of classic splashed white (*SW1*) has been confirmed by testing, but it is unclear whether the pattern came from the original Shetland imports or from more recent (undocumented) crosses to the Welsh Mountain Pony, where the allele is fairly common. Not all blue-eyed ponies test positive for any of the identified splashed white mutations, however, so there may be additional splashed white mutations. Blue eyes are accepted and the standard expressly forbids penalizing a pony based on eye color. White markings on the face or legs are rare in American Shetlands that do not have some type of pinto pattern.

Andalusians (*Pura Raza Espanola*) *closed studbook*
Andalusians are found in all four basic colors, though chestnut is rare. Shades are frequently dark or sooty. Grey is common and vivid dappling is seen on some individuals. Depigmentation of the face and undersides is found on some greys and more rarely on non-greys. The Spanish grey variant, which progresses more slowly and in a slightly different pattern than ordinary grey, is found in at least one strain. Rabicano is rare. The cream dilution is present and blue-eyed creams are accepted. Pearl is also present, so golden-eyed creams (cream pearls) and horses that look a lot like champagnes (homozygous pearls) are found. The breed has *non-dun1*, and while some of those horses do have some degree of body dilution, they lack the contrast of a true dun. One stallion tested positive for *Dun*. There have been rare bay individuals with silvery or flaxen manes and tails, and one dirty flaxen chestnut has tested as bay, but the silver dilution is not present. Bragada sabino has been found on a few individuals but so far all have had relatively low levels of white. One patchy sabino colt was born in Sweden but his registration status has not been confirmed. There is one bald-faced, blue-eyed mare suspected of carrying a new splashed white mutation. Blue eyes have also been documented in a handful of solid or moderately marked individuals. Crop-out appaloosas are rumored to have occurred, but this has not been conclusively documented. White markings tend to be more conservative. At one time Spain refused to register unusual colors, including chestnut, but this restriction was lifted in 2002.

Appaloosas *studbook (outcrosses)*
Appaloosas come in all four basic colors, with a full range of shades and variations. Grey is present but it is considered undesirable by many breeders. True roan occurs but is rare. The cream and dun dilutions are common, and blue-eyed creams are accepted. Champagne is present but relatively rare, and at least one horse has tested positive for silver. In addition to the

true dilutions, the basic appaloosa gene can shift black pigment to a bronze or pewter tone. Registry rules that require horses without patterns to have mottled skin and either visible sclera or striped hooves ensure that the basic appaloosa gene, *Leopard Complex (Lp)*, is present in all Appaloosas with regular papers; many also have the additional genes needed to create blanket or leopard patterns. The bragada sabino phenotype is found in some lines. The original form of splashed white (*SW1*) is present in at least one popular line and a new splash mutation (*SW5*) occurred in a separate line, though the latter does not appear to cause body-spotting. There have been a handful of Appaloosas with what look like frame overo patterns. A horse with pinto patterning that extends past the head and ears or the tops of the legs may be registered if it has two Appaloosa parents, but it cannot be shown in halter classes. The registry rules state that all eye colors are permissible. Solid horses from parents with regular papers can be registered and compete in classes that permit Non-Characteristic horses.

Arabians *closed studbook*
Arabians come in all four basic colors. The wild bay variant is present and some display unusually pale silver-flaxen manes and tails that mimic bay silver. Flaxen manes and tails are common on chestnuts, and some bay and black Arabians have flaxen in their tails. This trait, called Gulastra's Plume, often fades with age. There has been at least one mare with a pronounced mealy pattern, but the tendency is towards clear, bright coloring. Sootiness is possible but heavily dappled sooty is uncommon. Grey is widespread in the population and vivid dapples and heavy fleabiting are seen in some lines. Blood marks are seen on some greys and in rare instances they are extensive enough to give the impression the horses is a pinto with a white-grey background. Facial depigmentation is seen on some greys and occasionally on non-greys. Rabicano is present and can result in extensive roaning, particularly when paired with sabino. Several cases of spontaneous roans have been documented; all were chestnut. Although some breeders have claimed to have purebred palominos, the cream gene is not present. There have been three recorded instances of a rare dilution called light black, but only one individual is still living. Testing has shown that *non-dun1* is surprisingly common, but appears less likely to mimic the dun phenotype than in other breeds where it is common. All four sabino phenotypes are found in the purebred population. The bragada phenotype is common, particularly on chestnuts, while patchy sabino, sabino roan and white phenotypes are relatively rare. Three white spotting patterns, one near-white (*W3*) and two patchy sabinos (*W15* and *W19*), have been formally identified in the breed. At least two splashed white mutations are suspected but have not yet been confirmed by testing; both produce a moderate form of white patterning similar to *SW2* and *SW3* in Paint Horses. Tobiano is not present in purebreds but one tobiano mare was fraudulently registered for a short period. A single manchado was documented in Argentina in the middle of the twentieth century. There have been at least two chimeric brindles. White mismarks,

Birdcatcher spots, chubari spots and lacing have all occurred. Blue eyes are occasionally seen. American registry rules call for blue eyes to be penalized in halter classes for mares and stallions. Arabians display a full range of markings, from solid to fully white faces and high stockings. The American rule penalizing excessive white was eliminated in 1978.

Ardennes

studbook (outcross)

The two most common colors in the Ardennes are bay and bay roan. Both ordinary (fully black points) and wild bay are found, with a clear, medium shade the most common. Dark bay and brown are rare. Chestnut is less common, and comes in a full range of shades including pale blonde. Black is not an accepted color in France though it does occur on rare occasions. Black Ardennes are sometimes registered as brown as that color is tolerated, although it is not considered desirable. The studbook in Belgium registers without regard to color. A quarter of all Ardennes are roan and the French registry will accept black roan even though it will not accept solid black. Many roans have frosty manes and tails, and some have the modifier that allows the head to be roaned along with the body, making them difficult to distinguish from greys. True grey is no longer present and is not accepted by the French registry. In 2009 a blue-eyed all-white foal was born in France. The colt, who is assumed to be a dominant white, was accepted into the studbook but has not been licensed. A bay colt with a broad blaze and blue eyes was born in 2007 and there are rumors that there have been others like him, but otherwise most Ardennes are solid. White markings of any kind are unusual, especially on the legs.

Asturcón Pony

closed studbook

The most common color in Asturcón Ponies is black, followed by brown or bay. Bays tend to be dark with fully-pigmented points. Chestnut was once prohibited but concerns about the loss genetic diversity led to its acceptance in 2012, though it remains rare. Images of flaxen-maned bay and even black ponies might give the impression that silver is present but this is from sun-fading. Small stars are permitted but most of the ponies are unmarked.

Australian Pony

studbook (outcross)

All four basic colors are present. Sootiness is common in all its varieties. Flaxen manes and tails are common in chestnuts. Because two Exmoor stallions were used during the formation of the breed, the mealy pattern was once present but appears to have been lost. Grey is common. Dark-headed roan is present and some roans have frosty manes and tails. Cream dilutes are currently popular and blue-eyed creams are accepted. Silver is present and some lines are notable for an unusually dark variation with self-colored (rather than flaxen) points. Although Australian Ponies were not among the breeds used in the study that identified *non-dun1*, the presence of dorsal stripes on some non-dun ponies suggest that the allele may be found in at least some ponies. The most common pinto pattern in the breed is tobiano, but bragada sabinos can also be found and some of the tobianos have the

kind of roaned, irregular pattern that suggest the pony also carries some type of sabino pattern. At least one tobiano line is known for extensive face white and blue eyes. Given the strong influence of the Welsh Pony, both historically and as the one remaining allowed outcross, the presence of the classic splashed white (SW1) pattern seems likely. At least one tobiano stallion has what looks like belton patterning and others have the kind of minimized pattern that suggests they carry *Cryptic* or some other strong white suppressor. Unless a pinto pattern is present, the markings tend to be conservative.

Australian Stock Horse

studbook with grading scheme

All four basic colors are present with a full range of shades and variations with the possible exception of the mealy pattern. Grey, roan and white ticking are all present. Cream and silver have a long history in the breed and champagne was introduced through a more recent Quarter Horse cross. Dun is rare and most registered duns are actually buckskin. Based on phenotype, some of the horses registered as “black dun” appear to be black with the *non-dun1* gene. There are tobianos and some have the suppressed pattern that suggests the *Cryptic* modifier (or something similar) may be present. One family of tobianos has pronounced belton patterning. Frame overo was introduced into the population by an outcross to a Paint Horse in the 1980s. A full range of face and leg markings are found but conservative amounts of white are typical.

Ban'ei Horse

open studbook

Developed primarily from crossing registered Belgian, Breton, Percheron and Ardennes, the Japanese Ban'ei combines the color options of many of the common draft breeds along with a few that are not typical in heavy draft horses. All four basic colors are present and can be found in a full range of shades from light to dark. Mealy wild bay with a frosted mane—a color most often seen in Swedish heavy horses—can be found. A wide range of sooty phenotypes, including vivid overlay dappling, occur. Chestnut horses may have dark, self-colored or flaxen manes and tails, with flaxen the most common. Grey is present and some individuals show dramatic skin depigmentation. True roan is surprisingly uncommon given the use of Breton and Ardennes. There is one tobiano line and one documented all-white mutation (*W17*). A few sabino roans of the all-over roan, blaze and white stockings variety can be found; all appear to be chestnut. The full range of white markings, from unmarked solids to broad blazes and stockings, occur though extensive face markings are more common than high white on the legs. The two dominant white horses (mother and son) each had one blue eye.

Banker Ponies

island landrace

The four basic colors are found among the different herds of the Carolina Outer Banks. Many of the chestnuts have flaxen manes and tails and the full mealy pattern is sometimes seen. Several of the herds have horses with the silver dilution, and there are dun and cream dilutes in the Carrot Island herd. Two colors—tobiano and grey—are found in the ponies of Ocracoke Island. Grey is believed to have been introduced

from outcrossing to an Arabian stallion in the late nineteenth century. Most Bankers do not have white markings, though conservative white markings do occur.

Bardigiano

closed studbook

The Bardigiano is found in bay, brown and black, with dark bay or brown preferred. There are clear red bays but the darker shades are more typical. The standard allows for a small star and some white on the feet but most Bardigianos are unmarked. It is possible to find rare individuals with larger stars and even narrow blazes, but to date no examples of ponies with even the permitted amount of white on the legs have been found. It should be noted that reference images sometimes used to show that roan is present are bay ponies that have been body-clipped. The blue or purple cast of a newly-clipped dark bay can look roan, especially in photographs.

Belgian Brabant

closed studbook

Where American Belgians are typically chestnut, the Brabant is most often bay, brown or black. Chestnuts are found but less often than in the American lines. The wild bay variant is present, as is sooty. The mealy pattern is common and flaxen manes and tails are common among the chestnuts. Some horses appear to be silver bay but this has not been confirmed by testing; assessing silver by phenotype alone is not always reliable. No other diluting factors are present though very pale mealy individuals are sometimes mistakenly called dun. Dark-headed roan and frosty roan are very common. Some frosty roans could be mistaken for steel grey. True greys are rare. In the past some chestnuts had flashy markings and there is a record of one white-born foal from solid parents, but in the modern population white markings tend to be minimal.

Black Forest Horse

studbook (outcrosses)

The color most closely associated with this breed is a deep liver chestnut with a pale flaxen mane and tail. This coloring is often mistaken for black silver, but testing conducted on the stallion population revealed that all were chestnut. Although less common, red chestnut does occur. Breeders have worked to preserve a bay mare line that also carries black. That same line has occasionally produced the frosted manes seen in some bay Nordic horses. Breeders using a Welsh Cob outcross brought in a second bay line. A second outcross—to a Freiburger—brought in flashy markings and pronounced flank roaning. There is a rare mare line that carries grey and efforts are being taken to preserve the color. Dark-headed roan has been lost in the modern population but there have been a few instances of chestnuts so heavily ticked with white that they appeared roan (spontaneous roan). There was a successful blue-eyed sabino roan mare shown in the 1940s, but current rules prohibit stallions with large belly spots from being licensed. Blazes are common in the breed but white on the legs is slightly less common.

Boulonnais

studbook with grading scheme

Most adult Boulonnais are white grey. Because the most common color after grey is chestnut, it is likely that most of the

greys are genetically chestnut. A full range of shades, from dark liver to pale dusty tan can be found, but the majority are a bright, medium red with a flaxen mane and tail. Bay and black are rare, and most trace to a black stallion incorporated into the studbook in 1996. Boulonnais have been selected for early greying and it is not unusual to see weanling foals that have already turned white. Facial depigmentation is common—more than a third of approved grey stallions have visibly mottled skin—and is sometimes so extensive that it can be difficult to distinguish from white or near-white sabino. Roan was present in the population at the turn of the last century, but does not appear to be part of the modern population. Chestnut Boulonnais often have white ticking on the flanks and at least one gelding was so extensively ticked that he appeared sabino roan. Blazes are typical on both the greys and the chestnuts, and socks and stockings are common. Bay and black Boulonnais tend to be solid or have only conservative white markings.

Breton

studbook with grading scheme

The most common color for Bretons is chestnut with bay, brown and black found only rarely. Sootiness is common, with some chestnuts so dark they could be mistaken for black. Others have the kind of concentrated shading around the lower legs that could be mistaken for wild bay. In addition to dark manes and tails, self-colored and flaxen manes and tails occur. Roan is present and chestnut roan is the second most common color after chestnut. A modified form of true roan, where the roaning extends over the head, is found in some lines. In the past grey Bretons were common but the color is no longer found in the modern population and is specifically prohibited by the Brazilian registry. Several stallions are registered as rabicano. Silver is suspected but has not been confirmed by testing and it is possible that the horses in question are sooty chestnuts. Classic splashed white (*SW1*) has been confirmed by testing. Homozygous splashed white horses are not accepted as Bretons but are recorded in the French state studbook as *Origine Constatee*. Flashy markings are common in the breed but a rule limiting white to the head and legs was adopted in 2011. Blue eyes are seen on rare occasions and may be a sign that the *SW1* gene is more widespread.

British Riding Pony

studbook (outcrosses)

British Riding Ponies come in all four basic colors, with bay and brown the most common. Most of the chestnuts have self-colored manes and tails. Grey and dark-headed roan can be found, though the latter is relatively rare. Some ponies have white hairs on their flanks but pronounced rabicano patterning is rare. Palomino and buckskin ponies are popular and there have been successful blue-eyed creams including the 1961 Pony of the Year, *SECOND THOUGHTS*. Dilutions present in the Welsh Pony (dun and silver) could be introduced but at the moment do not appear to be present. There are tobianos in the main section of the studbook but most of the pinto and appaloosa ponies end up in the appendix register because they do not meet pedigree requirements. It is not clear if there are any patchy sabino, sabino roan or classic splashed white

ponies in the current population but like the dilutions they could be introduced through outcrossing to the Welsh Pony. However, while there is no rule against white patterns the Riding Pony is a breed where “proper” and “traditional” carry a lot of weight. That is why more traditional colors are favored and also why white markings tend to be more conservative even when there is no specific rule regarding white.

British Spotted Pony *studbook with grading scheme*
Because the British Spotted Pony studbook allows outcrossing to any of the British native pony breeds, all the colors, modifiers and patterns in those breeds are possible. The color shifting that happens with many appaloosas might make the identification of muted brown colors like mushroom or silver difficult, though either is possible given the crosses allowed. Grey is also possible, but it is strongly discouraged by the breed society even though it is not formally prohibited. The foundation stock used when the studbook was established carried the leopard pattern, and that remains the most common pattern but the different blanket patterns are also seen. Because many of the native pony breeds—particularly the Shetland, which is the most popular cross—have factors that minimize white patterning, suppressed leopards are common. Likewise, the lack of ordinary white markings in those same breeds mean that the sabino-influenced leopards common in American Appaloosas (think of a leopard like Prince Plaudit) are not typical. All forms of pinto spotting are prohibited but traits that suggest pinto genes (like blue eyes) are not necessarily recognized for what they are. [Note: For this breed, chart entries of “Suspected” refer to the colors readily available in the outcross populations but not yet noted by the author in British Spotted Ponies.]

Budyonny *studbook (outcrosses)*
Most Budyonnys are chestnut though rare bays, browns and blacks can be found. In shade, medium red chestnut is the most common but the unusual pale copper (with a dark mane and tail) sometimes seen in Russian native breeds is also found. Cream is present, but rare. Although subtle sootiness can be seen in the manes and tails of many of the cream Budyonnys, the tendency of the breed is for clear, bright coloring. A full range of white markings occur, but other than the traditional freeze brand on the withers white beyond the face or legs is extremely rare.

Byelorussian Harness Horse *studbook (outcrosses)*
All four basic colors are present and pale, mealy colors are common. Grey was once present, but it is not clear if this is still the case. Most of the founding stallions were either dun or cream and both are widespread in the population. Blue-eyed creams are accepted. Sooty dappling is common on the cream dilutes. There are horses that look to be black or bay silver, though none have yet been formally tested. Most Byelorussian Harness Horses are unmarked, but the existence of one classic splashed white gelding suggests that the ordinary white markings that are sometimes seen may be due to a single copy of the *SW1* gene.

Camargue *closed studbook*
Grey is a requirement for inclusion in the studbook. Camargues can be born any of the four basic colors but grey out rapidly and completely. It is not unusual to see weanling foals with an all-over pale roan or silver-white appearance. Vivid dappling (more common in slow-greying breeds) is not typical and fleabiting (more common in heterozygous greys) is rare. While the majority of Camargues are homozygous for grey, non-grey foals are born on rare occasion. Although they are not granted equal status themselves at least one modern chestnut mare has had her grey foals included in the studbook. Many Camargue foals show pronounced primitive markings, which suggests that the *non-dun1* allele may be present. A range of ordinary white markings are seen, though the tendency is towards the conservative end of the spectrum. Facial depigmentation does occur, but with slightly less frequency as some of the other breeds selected for early and complete greying.

Campolina *closed studbook*
All four basic colors are present. Clear, fully-pigmented shades are more common but there are Campolinas with the full mealy pattern as well as wild bays. There are several popular grey lines but roan is rare. Dun is common. There has been at least one grulla with partial brindling and one bay dun with *bider* marks—dark, irregular patches more commonly associated with Mongolian breeds. Cream is present though less common than dun. Tobiano is present and some individuals have the pronounced belton patterning seen in the two Mangalarga breeds. With the exception of the tobianos, most Campolinas are solid or conservatively marked. The tobianos, however, often have face white. There is also a heavily ticked red dun mare with lacey markings, but she is unusual in a breed where markings tend to be smooth in outline.

Canadian Horse *closed studbook*
The majority of Canadian Horses are unmarked black or brown, but bay and chestnut do occur. There are chestnuts with either flaxen or self-colored manes and tails. There have been greys in the stud book as recently as the 1940s but it does not appear the color is still found in the purebred population. One otherwise solid black mare has a pronounced rabicano pattern. There is one line that carries the cream dilution and another that looks silver diluted though it has not yet been confirmed by testing. Most Canadian Horses are solid, but white on the face or legs does occur.

Caspian *closed studbook*
All four basic colors are present. Most bays have fully-pigmented points but wild bay does occur. There has been one bay with a pronounced mealy pattern. Grey is common. One chestnut mare had pronounced white ticking on her flanks and there is a stallion with the “spontaneous roan” phenotype. One of the founding mares was a pale red dun; at least one of her descendants tested positive for the dun (*D*) gene. There was also a Caspian in the dun study that tested positive for *non-dun1*. Most Caspians are solid or conservatively marked,

though blazes and hind stockings occur more rarely. As a general rule, the breed is more inclined to white on the face than white on the legs.

Chincoteague Pony

island landrace

All four basic colors are present. Most bays have fully-pigmented points but wild bays have been documented. Because a grey Arabian stallion was turned out on the islands during the 1960s, it is believed that there were greys for a time but there is no evidence for it now. There are ponies with the cream dilution and a historical photo suggests that the silver dilution may once have been present. There have been at least three sabino roans (two were sisters) but they do not appear to have left descendants. There have been ponies with the classic splashed white pattern, which suggests that the *SW1* gene may be present. An image on an old postcard from the island shows what appears to be a frame overo; this may reflect past outcrossing to mustangs, but there is no evidence for the pattern beyond the one picture. Tobiano is widespread among the ponies. Some appear to have strongly suppressed patterns, suggesting that the Shetlands often credited with bringing tobiano to the ponies may have also added the *Cryptic* modifier. One tobiano has what appears to be belton patterning. Although white markings do occur, face markings are much more common on the tobianos or what are likely to be heterozygous splashed white ponies, given the frequency that blazes and socks are paired with blue eyes.

Cleveland Bays

closed studbook

The breed standard calls for a solid bay horse with fully black legs. Clear red bay is preferred, though shaded and dappled bays do occur. Silvering in the mane and tail is permissible but the trait seems to have disappeared from the breed. The red gene has not been completely eliminated from the population, so occasional crop-out chestnuts do occur. Chestnut mares may be registered though they are noted as being mismarked on their papers. Historical records suggest that dun was once present in the breed. The standard allows for a star no bigger than a fifty pence piece, though individuals with larger stars and even strips do occur rarely. Mares with excessive white can be registered with the same mismark notation that is used for the chestnuts.

Clydesdales

closed studbook

Bay and brown are the most common colors in Clydesdales, followed by black. Chestnut is rare. Sooty dappling is common. The last grey line in North America died out in the middle of the last century. There are no dilutions in the modern population but it is possible that cream and dun were present when the studbook was formed. Clydesdales are uniformly sabino, with bragada, patchy, and sabino roan patterns the most commonly seen. In recent years, the patterns have gotten louder and it is now unusual to see a colored leg, but near-white patterns are extremely rare. All-white individuals have not been recorded in the modern purebred population. Flaxen and mixed manes and tails are common, and are probably caused by the white patterns; these are not related to the silver

dilution, which is not believed to be present. Sabino roans are sometimes called grey or roan, though neither grey nor dark-headed roan are found in the modern population. Some form of splashed white may be present, though sabino patterns can mimic splashed white. The classic splashed white pattern (*SW1*) and *Sabino1* are not believed to be present. Blue eyes are common and are not penalized.

Coldblooded Trotter

closed studbook

The most common colors are brown and black, though bay and chestnut do occur. There were a handful of grey and roan horses in the early twentieth century but both colors do not appear to be in the modern population. There was a stallion with heavily roaned flanks but it is not clear if the color remains. There are a few true duns and the breed was identified as having *non-dun1* in a recent study. The cream dilution is present. There is a flaxen-maned bay that is sometimes identified as silver but he did not test positive for the silver gene and the cause for his coloring is not known. There was a single tobiano in the early twentieth century but his line did not continue. Flashy markings and bragada sabino patterns occur rarely and there has been at least one sabino roan. Classic splashed white is present and blue eyes are not uncommon in the lines known to carry it.

Comtois

studbook with grading scheme

Clear red bay is the preferred base color. Darker bay, brown, black and chestnut are found more rarely. Faded colors are penalized. Dappling is also considered a fault, so sooty colors are rare. The breed is almost uniformly silver diluted. Very pale manes and tails are desired and self-colored manes and tails on chestnuts are considered a fault. Moderate white on the face is permitted but blazes or white on the legs are faults. Although individuals with blazes can be found—and can be registered—most Comtois are solid or have only stars, snips or comets.

Connemara

closed studbook

The common basic colors in Connemaras are bay, brown and black. Chestnut is rare. Colors tend to be deeply pigmented and sootiness is common. Flaxen is present. Grey is common. The breed is known for individuals that grey very late. In some cases, ponies have given no sign of being grey until they were in their teens and never turned truly white. True roan is rare. Some roan Connemaras have pronounced reversed dappling. The cream dilution is present and many of the sooty buckskins are vividly dappled. British Connemara breeders call buckskin “dun”, but the dun gene (*D*) does not appear to be present in the population. *Non-dun1* is present. Blue-eyed creams do occur but rules regarding their registration vary by country. The American registry will not accept double-dilute stallions but will register mares and geldings. European registries, including the parent registry in Ireland, place blue-eyed creams in a separate section of the studbook. Because the graying process can hide cream, and because very sooty ponies may not be immediately recognizable as buckskins, some countries require stallions to be tested for the cream gene.

There have been sooty palomino ponies that closely resemble bay silvers, but the presence of that dilution has not been confirmed. A near-white foal was born in Sweden to solid parents in 2015 and is presumed to have a new white spotting (*W*) mutation. A crop-out appaloosa foal is rumored to have occurred in recent years but this was not documented and his fate is unknown. Some Connemaras have white markings but these tend to be fairly minimal. Flashy markings are rare. One pony was born with a broad blaze and a blue eye but the cause of his markings is not known; he was later gelded. Amber eyes, both on cream dilutes and non-diluted ponies, are seen on occasion. The American registry will not accept pintos but there are no published marking guides to determine eligibility.

Criollo *closed studbook*

All four basic colors are present, and can be found in a full range of shades from light to dark. Grey, dark-headed roan, frosty roan, spontaneous roan and white ticking patterns are all found in the breed. Dun is common and many individuals have pronounced dun factoring. There have been a few instances of brindled duns as well as at least one mare with a brindling pattern resembling one previously identified as having a genetic basis. Cream is common but in many South American countries blue-eyed creams are seen as undesirable “albinos”. All four sabino phenotypes are present. Bragada patterns are particularly common but the breed also has some of the most striking examples of extensive patchy patterns. At least one line produces the broad white faces and blue eyes associated with splashed white patterns and another appears to carry frame overo. The one pattern that is controversial is tobiano, which is accepted in Brazil but not elsewhere. The Criollo is also the one purebred population where multiple examples of manchado have been documented. Criollos also display some of the re-coloring factors seen in other South American breeds: badger faces, reversed markings and belton patterning.

Dales Pony *studbook with grading scheme*

The majority of Dales Ponies are black or brown. Bay and grey are seen more rarely. There are also a few dark-headed roans left in the breed. The breed standard allows for stars, snips and white hind fetlocks, but most ponies are unmarked. Ponies are sometimes born with slightly more white than the standard permits—usually slightly higher hind socks, or some white on a front leg—and are entered in the grading register. Many of the founding ponies had dense ermine spotting, and this trait persists in the modern population.

Dartmoor Pony *studbook with grading scheme*

Bay, brown and black are the most common colors. Dark, sooty colors are typical. Chestnut is rare, and some have the gray flaxen manes and dark shading on the lower legs that is sometimes mistaken for silver bay. Grey is present and a single roan line remains. All forms of pinto and appaloosa spotting are prohibited. Most Dartmoors are unmarked, but stars, snips and white fetlocks are permitted. Ponies with excessive white, like a blaze or stocking, are not eligible for the

main studbook. [Note: Dartmoor Hill Ponies are an unrelated semi-feral herd. Tobiano “Dartmoor” ponies belong to this group and are not registered Dartmoor Ponies.]

Døle *studbook with grading scheme*

All four basic colors are present. Both fully-pigmented and mealy patterns can be found, but dark and sooty colors predominate. Bays with silver or mixed flaxen manes and tails occur. Some bays have pale flaxen along the backs of their cannons. Grey is rare. There was a dark-headed roan mare in the studbook at the turn of the last century, but none of her modern descendants inherited the color. The cream dilution is relatively common, and a few duns have been documented. There have also been what appear to be bragada sabinos, but that color also seems to have been lost over time. There are Døles with the classic splashed white pattern, and it seems likely that they and the blue-eyed horses with flashier markings carry the *SW1* gene. Although white markings of all kinds do occur, the breed is much more likely to have large white markings on the face than white on the legs.

Dülman Pony *(semi-feral) landrace*

The majority of Dülman Ponies are grulla, but bay duns are also seen. Some of the ponies are dark enough in shade to suggest that *non-dun1*, which is recessive to *Dun* (*D*), may also be present. It is also possible that the darker shades are from sootiness rather than variations at the *Dun* locus. Most Dülmans are unmarked, but small stars and snips do occur on rare occasion.

Dutch Harness Horse (Tuigpaard) *open studbook*

All four basic colors are present with chestnut the most common. The tendency is for deeply pigmented colors and a near-black chestnut called *koffievos* is popular. Grey is present. Because the turnout for this breed is similar, online images that claim to be of grey “Hackneys” are more likely to be Tuigpaards. There is a single family of roans descending from a black roan Gelderlander mare. Two Hackney stallions used as outcrosses in the 1990s had extensive roaning on their flanks. Cream was introduced through an outcross to a Saddlebred around the same time. The silver dilution is present and traces back to very old Gelderlander lines. The bragada sabino pattern is common but there have been more extensively marked (patchy) sabinos as well as sabino roans. One all-white stallion was born but was not used for breeding. Because he came from a patchy sabino family it is likely that his color came from having two separate sabino patterns. It is known some of the sabino mutations, when combined, produce all-white foals. Although blazes and stockings are common, this is also a breed where unbalanced markings—where the face is solid or minimally marked while the legs have high stockings—occur with some regularity. Horses without white markings are rare.

Dutch Warmblood *open studbook*

All four basic colors are present. Dark shades predominate, though clear, bright colors can be found as well. Grey is pres-

ent. Dark-headed roan is rare, though efforts have been made to preserve it. White ticking is found in rare individuals. The cream dilution is present. Blue-eyed cream is possible, but to date no stallions of this color have been approved. The silver dilution is present but is rare. The tobiano pattern is present, primarily through the popular SAMBER sire line, though there are others. Bragada sabino is present. There were a handful of suspected *Sabino1* families in both the Groninger and Gelderlander when those breeds were absorbed into the studbook; while those horses have modern descendants, the color appears to have been lost. A handful of patchy sabino and sabino roan individuals have been documented. At least one stallion produces the kind of broad face markings and blue eyes that are consistent with splashed white, though the presence of any of the known splashed white patterns has not been confirmed. The breed has a complete range of face and leg markings, and most have white markings of some kind.

Eriskay Pony *studbook with grading scheme*

The majority of Eriskay Ponies are born black and turn grey, though some are born brown or bay. The ponies are often vividly dappled and because most are homozygous grey, fleabiting is rare. Because there are rare heterozygous greys in the population, ponies can be bay, brown or black. For non-grey ponies, the standard gives preference to seal brown though technically any solid, unmarked color is permitted. Although dun is not specifically prohibited, a rule against ponies showing a clear dorsal stripe effectively removes dun from registerable colors. With such a small population, however, it is unlikely that other colors (even chestnut) are present.

Estonian Draft *closed studbook*

Chestnut and bay are typical, though brown and black are found more rarely. Although fully-pigmented colors are found, the tendency is towards paler shades. Wild bay and the mealy pattern are common, and bays with muted points, frosty manes or silvered cannons occur. Some Estonian Drafts are sooty, but this is more often the kind of that overlays a pale color rather than an all-over dark tone. Roan was present due to the influence of the Ardennes, but it is not clear if it is still part of the modern population. Some chestnuts are ticked with white, particularly those with flashy white markings. The silver dilution is present. A full range of white markings, from unmarked through bragada sabino, are present although ragged or lacey outlines are not typical. At least two of the flashy-marked stallions have blue eyes.

Estonian Native *closed studbook*

The Estonian Native has an unusually wide range of solid colors. All four basic colors are present and can be found in a full range of shades from pale and mealy to dark and sooty. Both grey and dark-headed roan are found, though grey is much more common. Dun, *non-dun1*, cream and silver are all present. Cream dilutes are popular, and blue-eyed creams are accepted. White markings are permitted, though unmarked solids and moderate face and leg white are more common than blazes or stockings. White on the body is prohibited.

Exmoor Pony *closed studbook*

The Exmoor Pony is the one breed that is uniformly mealy, with pale areas around the eyes (“toad eyes”), muzzle and flanks specified in the breed standard. Most Exmoors are some shade of bay, but brown ponies can be found. Many ponies are sooty in addition to having the mealy pattern. Historical accounts mention grey ponies, and at least one historical photo shows a grey pony in an Exmoor herd. Although the standard does list “dun” as a permitted color, no dilutions are present in the population and it is likely that this refers to pale mealy bay. Although the gene for silver is not present, some Exmoors develop dramatic flaxen manes from sun-fading. No white of any kind is permitted.

Felin Pony *open studbook*

The Felin Pony was envisioned as a smaller version of the Polish Malopolski, and in color range it is quite similar. The biggest difference is that some of the foundation animals were Koniks, so dun is common. Cream is also present but came from the Welsh Pony rather than from native breeds. The Welsh Pony influence also ensured that dark-headed roan was more common than with the warmblood breeds. While pintaloosas do occur in the two Polish warmblood breeds because tobiano and the appaloosa patterns are present, in the Felin the two patterns have been intentionally combined, in part because the breed was originally developed at an agricultural research center.

Fell Pony *closed studbook*

The majority of Fell Ponies are black, with brown and bay seen more rarely. In the past there were also chestnut ponies, but they are no longer admitted into the studbook. Grey is still present though rare. In the past there have been both true roans and rabicanos with the last known roan registered in the 1960s. There are also ponies entered in the early studbooks as dun, though whether they were truly dun or cream is not known. Three piebald or skewbald ponies were entered in the early studbooks. Though their patterns cannot be determined with certainty, given the region and the terminology of the time it seems most likely that these were tobianos. Present rules bar pintos from inclusion in the stud book. Most Fell Ponies are unmarked, but a small star and hind fetlocks are permissible. Though it is considered a fault, ponies with excessive white markings are still entered into the studbook.

Finnhorse *closed studbook*

The traditional color for the Finnhorse is chestnut and almost every shade and variation on that color can be found within the breed. Flaxen manes and tails are common. Bay and black can be found more rarely. Grey is present and many are vividly dappled. Roan is rare. There have been individuals with dramatic rabicano patterns and several individuals that fall along the spectrum of spontaneous roan to sabino roan. Cream, dun and silver are all present; the last is primarily found within the pony section of the stud book. Several slightly diluted black ponies have been documented and it is possible they carry *non-dun1*. Bragada sabinos and heavily

ticked sabino roans can be found. There is one instance of the odd one-sided hip spotting similar to what was seen on the Arabian mare LAVA RIDGE POTEKA. The paper written in the 1930s first describing the splashed white pattern was based on a study of a Finnhorse family, and one of the descendants of that family recently tested positive for classic splashed white (*SW1*). Blue eyes occur with some regularity, and one chestnut stallion has golden eyes.

Frederiksborg *studbook (outcrosses)*

At one time the Frederiksborg Stud of Denmark provided colorful horses to many of royal studs of Europe. A few horses still remained from their white breeding program at the turn of the last century, and their spotted lines would be used to create the Knabstrupper. Today, however, most Frederiksborgs are red chestnut or bay with flashy white markings. There are also cream dilutes through a mare born in the 1940s. Some horses have had belly spots and a few individuals have had badger markings. A grey stallion was recently approved; his coloring came from a Shagya outcross.

Freiberger *closed studbook*

Although most Freiberger horses have traditional coloring—bay, brown and chestnut—this is a breed known as much for its exceptions rather than what is typical. When it comes to horse color research, it is one of the most extensively studied populations. The first documented white (*W1*) mutation was found here. Members of that family are typically born with a patchy phenotype that fades to white or near-white as they mature. Although there are rare greys within the breed, the fading in this family is not due to greying. An unrelated horse was born with a patchy phenotype, blue eyes and a diluted body color. Called “macchiato” by his breeders, the color was sabino in terms of phenotype by the mutation was located on a gene normally associated with splashed white patterns. Unlike the dominant white family, however, the founder proved sterile. There are other body-marked Freiberger horses ranging from bragada sabinos through sabino roan. There is also at least one instance of a spontaneous roan. Studies of the genetics of white markings have shown that the average amount of white on Freiberger horses has been steadily increasing over time. Although not yet studied, some Freiberger horses show signs of having the belton pattern.

French Trotter *closed studbook*

Like many of the modern harness racing breeds, French Trotters tend towards dark, conservative colors; more than three-fifths of the breed are bay or brown. Chestnut is a little more common than in the American Standardbred, and grey is much more rare. Roan does occur rarely, and at least one had a dramatically frosty mane and tail. There have been several instances of white or near-white foals, though only a few have been used for breeding. There have also been a number of bragada sabinos. One bragada sabino has the unbalanced type of pattern sometimes seen in Hackneys, with high stockings, body white and a solid face. Conservative white markings are more typical, however.

Friesian *closed studbook*

The registry requires that Friesians be solid black for inclusion in the studbook. Purebred chestnuts, sometimes called Fox Friesians, can be found but do not have full registration status. Mandatory screening for the recessive chestnut gene in stallions began in 1998, but this was recently discontinued out of concern for genetic diversity. Prior to 1918, when the black color became mandatory, some of the mares were chestnut, bay or brown. During that same time there were a handful of mares suspected of being silver dilutes, as well as one suspected palomino. There were also a few mares that may have been either grey or roan, and white ticking persisted in at least one line until the middle of the twentieth century. There have been attempts to restore what some European breeders are calling “pinto Friesians”. In this case, the pinto pattern is tobiano, but the claim that there were once tobiano Friesians are somewhat misleading. There were tobianos in the studbooks of Friesland but most were Bovenlanders, which was a heavy coaching breed that shared the studbook with the Friesian during the early part of the twentieth century. The last entry of a pinto—presumably a tobiano—into the section reserved for the Friesian breed was in 1908. Under current rules, a small star is permitted but is not considered desirable. More extensive white markings do occur on rare occasions and at least one colt has been born with white markings and a partial blue eye.

Furioso-North Star *open studbook*

Like other royal breeding operations in the nineteenth century, the Mezöhegyes Stud in Hungary was divided by color. This breed takes its name from the two stallions used for the bay herd. It is not surprising then that most Furioso-North Stars are bay or brown. Although wild bays are seen in rare instances, dark bays with fully-pigmented points are more typical. Sootiness is common. Black and chestnut is seen more rarely. The most common chestnut is medium in shade with a self-colored mane and tail, though liver chestnuts (also with self-colored points) do occur. Grey is seen occasionally. White markings, when they are present, tend to be fairly conservative but smooth-edged blazes and stockings are seen upon occasion. One of the unusual aspects of flashy markings in this breed is that they are linked to brown or dark bay, rather than chestnut (which is typical of most breeds).

Galiceño *landrace*

Galiceños come in all four basic colors, though black is uncommon. Though colors tend to be fully pigmented it is possible to find wild bays. Chestnuts can have self-colored or flaxen manes and tails. Roan is relatively common given the small size of the population. It is not clear if grey, which was once found in the breed, is still present in the modern population. At least one Galiceño had pronounced white ticking on his flank overlaid with BendOr spotting. Dun and cream are both present, and blue-eyed creams are considered acceptable. There are no appaloosa or pinto patterns in the Galiceño, but conservative white markings on the face and legs are common.

Garrano *(semi-feral) landrace*
Garranos are uniformly bay or brown. Medium red bay is the most common shade, but dark and sooty bays can also be found. Research on genetic diversity in European rustic pony breeds found that a significant portion of Garranos tested to carry the recessive gene for chestnut, but no chestnut ponies were identified. Most Garranos are unmarked, though some have a small star. One brown stallion has golden (tiger) eyes.

Gelderlander *studbook (outcrosses)*
The most common color chestnut, though bay, brown and black are found. Grey is uncommon. Although roan is not present in the current population, the roan line preserved in the Dutch Warmblood comes from the Gelderlander and could be used to reintroduce the color. There are single lines for cream and for silver. The silver line, which traces back through the stallion IREGON, is also the source for the color in the other Dutch breeds. Most Gelderlanders have flashy white markings and belly spots are sometimes seen. In the 1970s there were also several families believed to carry *Sabino1*—the Gelderlander was the breed where the pattern was first studied—but it is thought that the color was lost. There is one remaining tobiano, but he is a stallion and not approved by the KWPN so that may not be true in the future. There is also a mare with stockings, a white face and blue eyes that is suspected to have a splashed white pattern. Like many horses with this phenotype, she has produced foals with almost identical markings to hers.

German Classic Pony *open studbook*
This relatively new breed was created by blending American and British Shetlands. The favored color is silver dapple, though all colors and patterns are permitted. European rules for harmonizing stud books required the removal of appaloosa (“tiger”) Shetlands from the German stud books because the parent registry in the United Kingdom did not permit the color. Some of those ponies have since been used in the German Classic Pony, so those patterns can be found even though neither parent breed accepts them.

Gotland Pony *closed studbook*
The Gotland Pony is an unusual breed in terms of available colors. The breed has all four basic colors and there is a strong tendency towards their more primitive versions. Shades tend to be clear (not sooty), mealy patterns are common and dark points are often minimized. But despite this, true dun is not present. There are cream dilutes which go back to the earliest stud books, but the original founder was actually a leopard appaloosa. The basic appaloosa gene remains in the population so there are varnish roans, but the breed appears to have lost the patterning genes necessary for producing blankets or leopard patterns. The breed is similar to the British Shetland in that it also seems to lack the genes for “ordinary” white markings. The breed does have classic splashed white (*SW1*) and the rare Gotland with moderate white markings is usually heterozygous for it. Unlike breeds that have both *SW1* and the factors that produce white markings, Gotlands with one

copy of the gene do not usually have flashy white or blue eyes. Like the Shetlands, there have also been instances of homozygous classic splashed Gotlands who had minimized or even skewed patterns. Two bay ponies have golden eyes.

Groninger *open studbook*
The most common colors are black, brown and bay. Chestnut is uncommon. A grey Silesian stallion was approved as an outcross. There is a single roan mare in the studbook. Cream and silver were once part of the breed but have since been lost. One of those families was also known for producing tiger eyes. *Sabino1* is present and a stallion with the pattern was approved for breeding. There was an all-white mare with blue eyes born shortly before the original Groninger studbook was absorbed into the Dutch Warmblood. She produced white and sabino roan foals, and it is assumed that she carried a new white (*W*) mutation. She does not have any modern descendants. The well-known tobiano Dutch Warmblood SAMBER got his color from his Groninger dam TINA, and one of her tobiano descendants is in the current Groninger studbook. Most Groningers do have white markings, though on the whole the breed tends to be less flashy than the closely related Gelderlander.

Gypsy Horse *open studbook*
Black is the most common basic color, though bay, brown and chestnut are present in the population. Sootiness appears to be common. Many of the chestnuts have flaxen manes and tails, but it is relatively rare to find one with the mealy pattern. The most common dilutions are cream and silver. Some of the black silvers are vividly dappled with highly contrasted pale manes and tails. Pearl and dun are seen less often. A new alternate form of cream similar to the pearl, *snowdrop*, was recently identified in one mare. Like pearl, it is recessive so it may later be found in more lines within the breed or even in other breeds. Grey and dark-headed roan are found in some lines. Most Gypsy Horses are pintos, and the most common pattern is tobiano. Because many tobianos have extensive white on the face, it is suspected that some Gypsy Horses carry additional white patterns; tobiano Gypsy Horses with unmarked faces are uncommon. Of the sabino phenotypes present, bragada is probably the most common, though there are patchy sabino and sabino roan individuals. *Sabino1* has been confirmed present by testing, and a few homozygous (sabino white) individuals have been born. The high number of blue-eyed Gypsies, and the absence of horses with the classic homozygous pattern, suggests that there may be forms of splashed white in the breed that cannot yet be identified by testing. The appaloosa patterns of varnish roan, blanket, near-leopard and leopard are present, but are much less common than the pinto patterns. Snowcaps and fewspots are rare. Pintaloosas do occur and are accepted, but the relative rarity of the appaloosa patterns mean they are not often seen. There are Gypsy Horses with ordinary white markings on the face and legs, but these are uncommon. Individuals without any white marking are rare, though some breeders have begun to specialize in them.

Hackney*closed studbook*

All four basic colors are present, with bay particularly common among the American-bred ponies. Colors tend to be deeply pigmented, and sooty individuals can be found. Wild bay and flaxen chestnuts are rare and the full mealy pattern does not appear to be present. Palomino and dun were present when the breed was formalized in the late nineteenth century but were soon lost. At least one silver pony of questionable parentage was registered in the mid-twentieth century, but his line did not continue. Grey was lost to the breed in the middle of the twentieth century, though one English strain was preserved outside the studbook and is rumored to still exist. Dark-headed roan can still be found in one line in the Netherlands. A wide variety of white ticking, including rabi-cano, can be found. Some Hackneys are so heavily ticked that they could be mistaken for true roans. Tobiano was lost to the breed around the same time as the diluted colors, though for a time one American line remained in the now-extinct Moroccan Spotted Horse. There is one family with the manchado pattern in Argentina. Other patterns, including dominant white, splashed white and leopard are recorded in the early studbooks, though like tobiano these patterns were lost soon after the breed was established. In the modern population both the bragada and the patchy sabino phenotypes can be found. Some Hackneys have extensive white on the body, but the outline and placement is slightly different from the patchy phenotype. This unusual form of patterning, which is sometimes mistaken for tobiano, is discussed in greater detail in *The Equine Tapestry: Draft and Coaching Breeds*. Other Hackneys have ordinary white markings on the face and legs. Solid, unmarked Hackneys do occur, but are rare. In general, the American pony lines are more conservatively marked than the horses.

Haflinger*closed studbook*

Haflingers are uniformly flaxen chestnut, though at one time bay, brown and even black ponies were part of the breed. Shades tend to be light and the mealy pattern is common. Darker shades, including liver chestnut, are accepted but are rare. Sootiness, self-colored points, dappling and roaning are considered faults; depending on the country, this can result in ponies that either cannot be registered or cannot be used for breeding. Although sometimes described as palomino, the cream dilution is not present in the population. Several images of a red dun Italian stallion appear in the popular *Ultimate Horse Book*, suggesting that true dun may have persisted in the modern population. In most cases, however, primitive markings are probably caused by *non-dun1*, which is confirmed present. Because Haflingers are uniformly chestnut, the silver dilution would not be visible, but the number of silver-diluted crossbred foals suggest that some portion of the population carries the gene. Three separate spontaneous white foals—one in the United States and two in Germany—were born in recent years. It was previously assumed that each was an instance of a newly mutated white (*W*) pattern, but a recent study revealed what a significant number of Haflingers test positive for a single copy of the *Sabino1* gene. The high

incidence of that gene, possibly paired with a *Cryptic*-type modifier, might explain the unusual nature of white markings in the breed. In Haflingers, it is not unusual to find blazes that extend over the lips and chin, but leg markings are relatively rare. The parent registry in Tyrol describes face markings as desirable, but white on the leg to be a fault with penalties that increase with each additional marked leg. Four white legs or white above the hocks excludes a horse from the regular section of the studbook. The American registry does not specifically penalize white leg markings, but has said it would deny registration to any Haflinger with “significant” white. The desire to have blazes without leg white could lead to inadvertent selection for both a sabino gene and a suppressing modifier. None of the white-born foals were included in the studbooks in either country, but it is likely given the percentage of *Sabino1* carriers, that more will occur in the future.

Hanoverian*open studbook*

All four basic colors are present, though like many of the warmbloods that were originally bred as heavy coach horses, the traditional colors of bay and brown are the most common. Grey is also common and is the only color beyond the four base colors considered acceptable in the German studbook. The infamous cream-colored (likely a combination of cream and pearl) horses that also carried the Hanoverian name were dispersed—primarily to circuses—prior to the formation of the studbook and reflected the earlier baroque coaching type. Bragada sabinos are sometimes seen and a stallion with belly spotting was approved in 2007, though this caused a certain amount of controversy. A Trakehner stallion carrying classic splashed white (*SW1*) was approved for breeding, and blue eyes are sometimes seen in his descendants. Because the trait is grounds for refusal into the studbook, it is not clear if the *SW1* gene has been retained in the population. Modest white markings are common, and one bay stallion with flashy markings has pronounced belton patterning.

Highland Pony*closed studbook*

The common basic colors in Highland Ponies are bay, brown and black. Chestnut is extremely rare. Colors tend to be deeply pigmented and sootiness is common, but there has been at least one instance of a full mealy pattern. Grey is common and many ponies are vividly dappled. Dun is common. Silver is present in a small group of ponies from Rhum, where the black silver color is sometimes called bloodstone and bay dun silver is referred to as “fox dun”. The latter may reflect the mistaken idea that the ponies are chestnut. In fact, descriptions of the breed that state that there are “liver chestnut” Highland Ponies are likely referring to silver dilutes. The only white considered acceptable is a small star. Any other markings are considered undesirable, and “piebalds and skewbalds” are prohibited.

Holsteiner*open studbook*

Although all four basic colors are present, there is a strong preference for the breed’s traditional coloring of solid bay or brown. Historically chestnut has been viewed with disfavor,

but it has never been banned and even the Verband is currently standing a chestnut stallion. Grey has become more common in recent years due to the influence of the successful jumping stallion CAPITOL I. A handful of palomino and buckskin Holsteiners were born in the 1970s, but the registry chose to eliminate dilutes and no cream descendants remain. (The line did continue in some of the Hungarian warmblood breeds.) There was a family suspected of carrying *Sabino1* in the 1970s but it is not known if it remains in the modern descendants. A white spotting mutation (*W9*) was discovered in an all-white filly in 2007, but she was not identified by name or pedigree and her fate is not known. When white markings are present, the preference is that they be conservative, but flashy white markings do occur on rare occasions. The American studbook prohibits horse with two or more white spots “larger than a dinner plate” or appaloosa patterning.

Hungarian Coldblood *studbook (outcrosses)*

All four basic colors are present. Shades range from medium to dark and unlike most of the heavy draft breeds, the mealy pattern does not appear to be present. Chestnuts almost always have flaxen points, with strikingly pale manes and tails against a deeper body color typical. Grey is present and vivid dapple greys are common. Roan is present and roans with frosty manes and tails are sometimes seen. There is at least one line of leopard appaloosas. Although there are Hungarian Coldbloods with suppressed or near-leopard patterns, true blanket patterning does not appear to be present in the population. There are a few chestnut sabino roans with soft, all-over roaning and flashy white markings. One chestnut Hungarian Coldblood stallion has a small belly spot, and many chestnuts have flashy white markings, but the other colors tend to have minimal white markings. [Note: The more familiar Hungarian heavy breed, the Murakoz, is a subgroup within this breed. It tends towards a slightly lighter build and is invariably chestnut.]

Huzul *closed studbook*

The basic colors of the Huzul are bay, brown or black. Chestnut is not an accepted color, though some countries will register chestnut mares. Grey and roan are prohibited. Dun is common and the frequency of very dark grullas suggests that the intermediate dun allele, *non-dun1*, is also present. The breed is known for having unusually dark shades of dun that make identification without a test difficult. The tobiano pattern is common. Many ponies have strongly suppressed patterns and this was the breed where the *Cryptic* modifier was first studied. Unless the pony is a tobiano, white markings on the face or legs are prohibited. White markings are often seen on the faces of the tobianos, but these appear to be tied to the pattern and are not usually inherited by the non-tobiano offspring. There is a historical photo of a blue-eyed pony with a bald face, but no evidence that it is still present.

Icelandic *closed studbook*

All four basic colors are present. Shades can range from light to dark, though the full mealy pattern is rare. Some Ice-

landics are sooty, but vivid dappling is not especially common. Chestnuts with flaxen or even gray manes and tails can be found. Grey and dark-headed roan can be found. The cream, *non-dun1*, dun and silver dilutions are present. Blue-eyed creams occur, but are not common. Black horses with the silver and the cream dilution sometimes have amber eyes and a pale milk chocolate coat which can be mistaken for champagne or homozygous pearl, but those dilutions are not found in Icelandics. There are light black horses that do not test positive for any known dilution. Many tobiano Icelandics show the same unusual range of expression seen in Shetlands and Miniature Horses. Cryptic tobianos with slipped patterns could be mistaken for frame overo, but that pattern is not present. Classic splashed white (*SW1*) is present, though many of the heterozygous splashed white Icelandics only have minimal white markings and are not necessarily obvious as pintos. Two different white spotted (*W*) mutations, both with a sabino roan phenotype, have been recorded. No other sabino patterns are believed to be present in the population. It is likely that the genes for ordinary white markings are absent, and what appear to be markings are cryptic pinto patterns. One Icelandic mare sometimes described as a “black pinto on a red background” is not a pinto, but a mosaic. A second chestnut-black mosaic with a tobiano pattern is also known to exist.

Irish Draught *studbook with grading scheme*

All four basic colors are present, though black is rare. Grey is common and all varieties can be found including vivid dapple grey. There is a single line that carries dun, though many are also grey so it is not always obvious. Although not currently known to exist in the breed, the fact that the newly instituted grading scheme allows for Connemara blood means that there may one day be cream-diluted Irish Draughts. The breed standard indicates that “excessive” white is undesirable but this is not specifically defined. It is possible to find Irish Draughts with blazes or socks, but most have moderate amounts of white.

Italian Heavy Draft *studbook (outcross)*

The overwhelming majority of Italian Heavy Draft Horses are chestnut, though rare bays do occur. A single black stallion was recently exhibited. The breed standard states a preference for “intense” colors and dark red or liver chestnut is typical. Sootiness is common. Both self-colored and flaxen manes and tails are seen. After chestnut, the second most common color is chestnut roan. It is rare to see an Italian Heavy Draft without white markings, and many have blazes that extend to the chin and socks or stockings. White on the body, belly spots—even small ones—and white extending over the eyes or under the jaw are grounds for rejection from the studbook.

Jutland Horse *closed studbook*

Most Jutlands are chestnut. The shade can range from pale blonde to dark liver, but most are red chestnut and almost all have flaxen manes and tails. Black, brown and bay are rare. Grey and roan were once present in the breed but are

no longer present. There were also dun and cream mares in the early volumes of the stud book, but those colors are no longer found among purebreds. There have been modern Jutlands that appear to be bay silver, but the color has not yet been confirmed by testing. Silver could hide easily in a predominantly chestnut breed and it is found in some of the related breeds. One of the founding stallions was a belly-spotted sabino, but nothing more than blazes and stockings are found in the current population. There was a tobiano family in the late 1800s and several of the mares earned breeding premiums, but the color did not persist much past the early 1900s.

Kathiawari and Marwari *landrace*

All four basic colors are found in both breeds, but black is considered undesirable in the Kathiawari. As with many of the light riding breeds, the full mealy pattern is not typical. Dun is more common in the Kathiawari than in the Marwari, and cream is rare in both breeds. Grey is present. Dark-headed roan does not appear to be present in either population, but sabino roan is common. The type of sabino roan, along with the frequency of white-born horses, suggests that the *Sabino1* gene is present, though this has not yet been confirmed by testing. The Marwari registry has ruled that true white is not acceptable but the color, called *nukra*, is popular in religious ceremonies and among those with “dancing stallions”. Bragada and patchy sabinos can also be found. Tobiano is present. The classic splashed white pattern can be found in some individuals, but so far one blue-eyed tobiano tested negative for that mutation (*SW1*). It may be that the classic pattern in the Indian breeds comes from a different mutation, or that those horses do have the *SW1* mutation and the tested horse had a different splashed white mutation. The full range of face and leg markings, including unmarked solid, can be found within both breeds.

Kerry Bog Pony *closed studbook*

All four basic colors are present. Flaxen manes and tails are common on the chestnut ponies. There is overlap in the phenotypes of some of the sooty chestnuts and the wild bays. Grey and roan are both present, though the latter is rare. Cream and dun occur rarely. Another foundation stallion, THE SPOTTED BADGER, is a cryptic tobiano. The Irish registry places tobianos and “wall-eyed” ponies in a separate section of the studbook, and considers broken colors undesirable. The American registry does not penalize pintos. Ordinary white markings are permitted, but white on the face is more common than white on the legs.

Kinsky *studbook (outcrosses)*

The Kinsky was developed in the nineteenth century as a high-percentage Thoroughbred cross with a golden color. Although other colors are allowed in the stud book including undiluted bay and black, only palominos and blue-eyed creams are allowed to have the word “Kinsky” in their registered name. Sootiness occurs but dark, dappled palomino is not typical of the breed. Some Kinsky Horses have the dis-

tinctive metallic sheen often associated with Akhal-Tekes. It is unusual to see a Kinsky without white and some have flashy markings.

Kisbér Félvér *studbook (outcrosses)*

All four basic colors are present, though black is rare. The shades range from medium to dark, and most chestnut horses have self-colored manes and tails. Although clear colors are more common, sooty colors do occur. Grey is present but dark-headed roan is considered an indication of draft horse blood and is therefore prohibited. There is at least one line of cream dilutes that trace back to a buckskin Holsteiner. The breed displays a full range of white markings, from unmarked solids to blazes and high stockings, but pintos are denied entry into the studbook. The Kisbér Félvér shares a studbook with the Gidran, which is uniformly chestnut. The Gidran is sometimes referred to as the “yellow” strain, but this comes from a literal translation of the Hungarian word for chestnut, and does not refer to any of the dilute colors.

Kladruber *studbook (outcrosses)*

In its country of origin, the Kladruber is considered two closely related breeds: the Old White and the Old Black. The “white” Kladrubers are grey, and most are born black and rapidly turn pure white. Dappling is rare, though crossing to the black horses can make this more likely. One of the current stallions is heavily fleabitten, which is unusual because most of the greys are homozygous. Many grey Kladrubers have facial depigmentation and there are a few instances where the skin is almost entirely white. In the past it was assumed that they were cases of extreme depigmentation, but a recent study showing that *Sabino1* was present in the closely-related Lipizzan raises the possibility that these white horses were homozygous for that gene. That same study showed that Lipizzans also carried the splashed white gene (*SW2*) formerly thought to be unique to the Gunner line of Paint Horses. This might explain the recent instance of a bald-faced, blue-eyed black Kladruber as well as other instances of blue eyes. There are rare instances of bay and chestnut Kladruber and they are entered into the stud book. It is known that a dilution, most likely cream, was present at one time because the Kladruber that helped establish the stud at Lipica, FAVORY, was “dun”. Painting from that time would also suggest that a variety of pinto and appaloosa patterns were present, too. Current Kladrubers can have white markings, though they are much more common on the greys than on the blacks, where they interfere with matching a team.

Knabstrupper *studbook (outcrosses)*

All four basic colors are present, though the color shifting common in appaloosas can make determining the original color difficult. In 2011 a rule was passed that horses from the list of approved outcross breeds must be solid chestnut, bay, or black. The intention was to eliminate pale colors, particularly cream dilutes. Even so, there is at least one approved palomino stallion in the Miniature section of the studbook and there may be others in the existing population. Grey was

present in the past, but as of 2010 horses with the grey gene could not be used for breeding. Since some Knabstruppers have flashy white markings, it is possible that some form of sabino is present. Recently a classic splashed white crop-out colt was born from conservatively-marked parents, suggesting that *Splashed White1* (*SW1*) is present. Although blue eyes are prohibited by the current standard, they have occurred in the past. Because many heterozygous *SW1* horses have dark eyes, the pattern can remain hidden, especially if other white boosting factors (like sabino) are rare or absent. The appaloosa patterns are considered definitive traits in the breed, and all forms of varnish roan, blanket, snowcap, near-leopard, leopard and fewspot patterns are present. Leopard patterns are preferred by many breeders, and are more common than in the American Appaloosa, which generally shows a wider range of pattern types. Solid Knabstruppers are allowed in the studbook if they meet certain requirements. Horses with distinct pinto patterns are not eligible for grading. Stallions that have an eye that is fully blue or a rat tail cannot be used for breeding. A full range of white face and leg markings can be found in the breed, though in selecting for loud leopard patterns breeders have made solid or minimally marked horses more common than those with extensive white markings.

Konik

closed studbook

The definitive color of the Polish Konik is solid grulla. When the studbook was established, horses of other base colors and even non-duns were used, and even now a small percentage are born each year. The appearance of chestnuts and even non-duns is not surprising since those are controlled by recessive genes, but the occasional appearance of bay and bay dun means that some of the grullas are genetically brown or dark bay. The dark shade of some of the grullas suggest that the intermediate form of dun, *non-dun1*, may also be present. Koniks are not supposed to have white of any kind, though faint stars or snips are tolerated on mares. Koniks that do not meet the standard for color or markings cannot be used for breeding, though they are entered in the studbook.

Landais Pony

studbook with grading scheme

All four basic colors are present. Dark shades are common though clear, bright colors can be found as well. Flaxen manes on chestnuts are common, but like most improved pony breeds the full mealy pattern does not appear to be present. A handful of grey individuals were registered during the 1970s when Arabian and Welsh Pony stallions were utilized for outcrossing, but none of those lines continued. Some chestnuts are registered as having white hairs, but neither roan nor the sabino phenotypes are present. Conservative markings on the face and legs are common.

Lewitzer Pony

studbook (outcrosses)

The Lewitzer is envisioned as a true-breeding tobiano pony, so stallions of solid colors and suppressed patterns (those not identifiable visually) are not granted full registration in the studbook. Solid-colored mares can be registered but must be bred to (tobiano) Lewitzer stallions. Black and brown are the

most common base colors, but bay and chestnut do occur. Dun is also present, and recently a dun champagne tobiano German Riding Pony stallion was approved for outcrossing. Grey, frame overo and appaloosas patterns are prohibited. White face markings, including broad blazes and bald faces are common and many ponies have blue eyes. A least one Lewitzer foal was born with loud belton patterning.

Lipizzan

Lipizzans are usually grey, so their basic color is not always obvious. Most are born bay, black or brown, though it is possible that a small portion are born chestnut. Chestnut is present, if rare, in some of the eastern European countries. In the belief that an occasional cross to a non-grey improves skin pigmentation, some studs maintain bay and black stallions. As with many of the breeds selected for early and complete greying, pigment loss, especially around the face, is common. Facial depigmentation does occur in non-greys, though it is rare. Most Lipizzans mature to a white grey, but some individuals are fleabitten and the intense fleabitten pattern observed in some Arabian lines in sometimes seen. A single dark-headed roan mare has been documented in Hungary, and it is possible that other horses carry roan hidden by the greying process. The last tobiano Lipizzan was born in the early twentieth century, and cream was present as recently as the late nineteenth century and unconfirmed reports suggest it might still be in some lines. Individuals with extensive depigmentation on the face and body were thought to be related to greying, but in a recent study several Lipizzans tested positive for *Sabino1*. There has been at least one body-spotted colt, later gelded, with what looked to be a sabino roan pattern; it is not known if his pattern was due to *Sabino1* or an unrelated white spotting pattern. At one time the leopard pattern was present in the population, but it is assumed that both the gene for appaloosa coloring (*Lp*) and for the leopard pattern (*Patn1*) have been lost. It would be possible for the basic appaloosa color to go unnoticed in a breed where greying and skin depigmentation are common. Patterning genes (including *Patn1*) are not visible without the basic appaloosa gene, so they may have been preserved in the population. At least one grey mare had fleabites large enough in scale that they could be mistaken for a small leopard spots. Lipizzans can have ordinary face and leg markings, though extensive white markings are unusual. Blue eyes do appear upon occasion in some lines, and the same study that found *Sabino1* also found the splashed white mutation formerly thought to be unique to Paint Horses. Because the tested horses were not phenotypically splashed white (nor were the *Sabino1* horses visibly sabino), it seems likely that the breed has some type of *Cryptic* modifier.

Lundy Pony

island landrace

The proposed breed standard for the Lundy Pony states that the desired color is "dun" but what is meant is buckskin. There are bay and brown ponies on the island as well as cremellos, but the latter color is considered undesirable. The original herd sire as well as the son that took his place were

roans, but inspectors for the National Pony Society advised that these, along with chestnut ponies, be removed from the herd in the 1970s. Since that time, the stallions brought to the island to expand the gene pool—New Forest Ponies and a Connemara—have all been buckskin. Most Lundy Ponies have white markings and many have broad blazes. At least one bay Lundy has blue eyes. Because blazes and white socks are common but their outlines do not suggest sabino, and because the roan herd sire was a Welsh Pony, there is a chance that the classic splashed white (*SW1*) is present.

Lusitano

closed studbook

The four basic colors can be found in Lusitanos. Chestnut is somewhat more common in Lusitanos than in Andalusians, in part because restrictions that were once part of the Spanish studbook were not adopted in Portugal. Although dark, sooty shades are typical, it is possible to find wild bay. Grey is common and vivid dappling is seen on some individuals. There is at least one dark-headed roan stallion. The cream dilution is present and blue-eyed creams are accepted. Some smoky black Lusitanos have unusually pale golden eyes. Pearl is also present, so golden-eyed creams (cream pearls) and horses that look a lot like champagne (homozygous pearls) are found. Dun has been confirmed by testing. It is likely that Lusitanos also carries *non-dun1* given how widespread it is in Andalusians, but the breed has not yet been tested. White markings tend to be conservative, but horses with broad blazes, socks and even blue eyes can be found.

Malopolski

open studbook

The Malopolski is sometimes called the Polish Anglo-Arabian and its common colors, and the shades and variations of them, are typical of the Thoroughbred-influenced breeds. The Malopolski has a broader genetic foundation than just those two breeds. In addition to the “lost” tobiano Trakehners, Polish breeders also preserved appaloosas from stud dispersed during World War II. Unlike many Old World appaloosa breeds the Malopolski has a wide range of appaloosa patterns beyond leopard. Of particular interest is the large spotted blanket with lightning marks, which is relatively rare in most European appaloosas. The other unusual colors in the population (though in much lower numbers) are dark-headed roan, white ticking, dun, cream and silver. Malopolskis have a full range of white markings and blue eyes are sometimes seen on the tobianos.

Mangalarga

closed studbook

This is the first of two closely-related Brazilian saddle horses. The two breeds split from one another in the 1940s but they share a common history and many of the same colors. All four basic colors are present, though red chestnut is perhaps the most common. Grey and roan are both present but the most common pattern of white hairs is a unique form of white ticking known as *salpicada*. Unlike rabicano which originates at the fold of the stifle and flanks, *salpicada* tends to concentrate higher on the hindquarters. Like rabicano, it is very sensitive to boosting from sabino patterns and markings, which are

also very common in the Mangalarga. One of the other unusual things about the Mangalarga is that belton patterning is very common. It is most noticeable on the tobianos, but it occurs with the sabinos and even the *salpicadas*. When paired with *salpicada*, belton patterning can produce what looks a little like BendOr spotting in the roaned areas. A popular image of a “pintaloosa” Mangalarga (sometimes misidentified as a Marchador) is actually a belton-patterned *salpicada*-tobiano. Perhaps the most unusual aspect of the breed, however, is the prevalence of reversed markings. Tobiano Mangalargas often have a colored sock (and sometimes even two!) and this occurs even with the pattern is obviously influenced by a white booster. The tendency for this to occur with some frequency in the same family of horses has challenged previous assumptions that reversed socks were somatic “accidents”.

Mangalarga Marchador

closed studbook

The Marchador shares many of the same unusual colors and patterns as the Mangalarga, though *salpicada* is much less common and few Marchadors have the loud, patchy forms of sabino that are so common in Mangalargas. Grey and roan are more common in Marchadors and they also have the unusual “Spanish grey” seen in some Andalusians. They also have an additional dilution, dun, as well as the cream found in the Mangalarga.

Mérens Pony

studbook with grading scheme

The Mérens Pony must be solid black for inclusion in the breed’s studbook. During its restoration in the mid-twentieth century, a handful of bay, brown and chestnut mares were accepted, but in the modern breed the only non-black color that occurs is chestnut. These are not accepted as Mérens Ponies but are recorded in the French state studbook as *Origine Constatee*. The breed standard states that white hairs on the flank are acceptable, but this does not refer to a pronounce ticking pattern like rabicano, which does not appear to be present in the population, but rather to scattered white hairs that are not typically visible in photos. Most Mérens are unmarked, though a small star is permitted. Larger stars, snips and even small amounts of white on the coronet have occurred, but would be considered a serious fault or even grounds for denying ponies entry into the studbook.

Miniature Horse

closed studbook

This breed has one of the widest ranges of colors and patterns. All four basic colors can be found, along with their variations and shade modifiers. Grey and dark-headed roan are present. One popular sire was a spontaneous roan and consistently produced that phenotype. At least one individual has shown the reversed dapple pattern, and there have been a few roans that were extensively brindled. Reticulated leukotrichia, known as lacing, is present in some strains and may have a genetic component. Of the dilutions, cream, dun, *non-dun1*, champagne, and silver are all present. A few Miniatures carrying mushroom have been identified. Tobiano is common, and the *Cryptic* modifier seen in British and American Shetlands is also found in Miniatures. Some tobiano Miniatures

show unusually loud cat tracks, and it is possible the breed has some kind of modifier that produces belton patterning. *Sabino1*, classic splashed white (*SW1*) and frame overo have all been confirmed by testing. It is likely that Miniatures carry additional versions of sabino and splashed white, since many that have the characteristics for those patterns test negative for the patterns currently identified. The full range of appaloosa patterns, including varnish roan, blanket, near-leopard and leopard, can be found. Pintaloosas are fully accepted by breeders. The genes for ordinary white markings are present in the population, but in Miniatures markings are more likely to be a sign of a minimally expressed pattern than they are in most riding horses.

Missouri Foxtrotter

closed studbook

All four basic colors are present. Shades tend to be dark. Sooty colors are common, and Foxtrotters with the cream dilution sometimes have heavy dappling. Some chestnuts have flaxen manes and tails, but self-colored points are more common. A smaller number of chestnuts have darker (*tostado*) manes and tails. Grey is present, though some of the grey foundation horses were registered as roan. Dark-headed roan is present and one horse has the reversed dapple roan pattern. The cream dilution is common, and blue-eyed creams are accepted. Champagne, dun and silver are rare. Tobiano is present. *Sabino1* has been confirmed by testing. At least one foundation stallion was a frame overo, though his color is rare in modern Foxtrotters. At least one family produces the classic pattern seen in horses that are homozygous for *Splashed White1*. The full range of white face and leg markings are found in the breed, though it is somewhat unusual to see a Foxtrotter without any white.

Morgan

closed studbook

All four basic colors are present. In shade, the colors tend to be dark and sootiness is very common. Wild bay is rare. Flaxen chestnut is present, and some bay Morgans have had flaxen in their tails. There are two grey lines. There are dark-headed roan Morgans, but the existing lines are represented by a single gelding and an elderly mare so the color is expected to be lost in the near future. Rabicano patterning is rare. A handful of chestnut spontaneous roans have been recorded as well as a few horses with unexplained roan dappling. One horse with the classic dark-headed roan pattern was recently born to non-roan parents. This is presumed to be a new roan (R) allele. The cream dilution is present and blue-eyed creams are accepted. Silver and dun are rare. *Non-dun1* is present and may explain dorsal stripes on some sooty horses. One line carries an unnamed dilution that closely resembles the light black dilution in Arabians, though the Morgans appear to have very pale golden eyes. A handful of appaloosas were entered in the earliest studbooks. Frame overo was present in the past and an elderly mare recently tested positive, but like roan the color may be lost in the near future. There are lines that carry classic splashed white (*SW1*) and horses that have splashed white traits that do not have a testable pattern. Bragada sabinos can be found, but are rare. One individual

has non-chimeric brindling. Black mismarks, bleach patches and lacing have also been found in rare individuals. There has been at least one instance of belton patterning. White markings can be found on the face and legs, but the breed has a strong tendency for conservative markings and unmarked individuals are not unusual. At one time Morgans with excessive white were denied registration, but that rule was rescinded in 1996.

Moroccan Barb

landrace (in native lands)

Barbs come in all four basic colors. Like most riding breeds, the tendency is towards clear, bright coloring rather than washed out or mealy shades. Sootiness is possible, though heavily dappled sooty is not common. Grey is very common and many individuals are vividly dappled. Although some Barbs have white hairs on the flanks the full rabicano pattern has not yet been documented, though given the use of Arabians for outcrossing the possibility exists. A handful of true roan Barbs have been exported to France. The cream dilution is present and double-dilutes are seen on rare occasion. At least one dun mare was exported to Germany, but it unclear if she has been recorded in any of the European studbooks. Barbs were not among the breeds included in the study that identified *non-dun1*, so the status of that allele is not known. All five sabino phenotypes are found with sabino roan the most common. For this reason, and because there are also all-white sabinos, it is possible that *Sabino1* is present, though only genetic testing could prove or disprove this. Outside of the sabinos, which tend towards the louder and roany phenotypes, most Barbs have fairly conservative white markings and many have no white at all. At least one sabino roan mare has two blue eyes.

Mountain Pleasure Horse

studbook with grading register

All four basic colors are present, with black the most common. Flaxen manes and tails are common on chestnuts. Grey and roan are present. Black silver ("chocolate") is popular but it does not define the breed in the way that it has the Rocky Mountain Horse. Cream is also common and palominos are particularly popular. Blue-eyed creams are accepted. Champagne and dun are rare. One registry states that spotted horses are not desirable for showing or breeding, but has no formal rule prohibiting their inclusion in the studbook. A second registry restricts the amount of white on the face and legs, and limits white on the belly to a small spot, but also maintains a separate Spotted Mountain Horse studbook that contains tobianos and sabinos. Among the tobianos in that studbook, some of the palominos display the calico variant, which have random dark patches mixed with the gold.

Murgese

closed studbook

Only two colors are accepted by the stud book: black and black roan. Roan is rare, with only two roan stallions out more than a hundred currently standing at stud. Horses with white markings cannot be entered into the studbook, and while roan is an accepted color white ticking on the flanks of the black horses is not permitted.



17. *Classic champagne*



18. *Black (color shifted) "sabino roan"*



19. *Near-white sabino*



20. *Varnish roan*



21. *Buckskin spotted blanket*



22. *Tobiano with belton patterning*



23. *Splashed white*



24. *Nose-to-toes leopard*



25. *Chestnut "sabino roan"*



26. *Bragada sabino*



27. *Silver dapple tobiano*



28. *Varnish roan*

National Spotted Saddle Horse

open studbook

There are two competing registries for Spotted Saddle Horses: the National Spotted Saddle Horse Association (NSSHA) and the Spotted Saddle Horse Breeders and Exhibitors Association (SSHBEA). The primary difference is that the first allows all pinto patterns (and prohibits all action devices) while the second only registers tobianos. Both registries maintain open stud books for horses that perform an easy gait and meet their color requirements, so it would be possible to introduce colors and patterns not listed as present. Both registries have provisions for including solid-colored offspring of registered parents in the studbook, though they are generally prohibiting from competing alongside spotted horses.

New Forest Pony

closed studbook

All four basic colors are present in a wide range of shades. Some sooty chestnuts have the dark heels that could cause them to be mistaken for wild bay. There are others dark enough to be mistaken for silver dapple, though it does not appear that gene is present. Grey is common and some lines are prone to facial depigmentation. An influential brown stallion had pronounced facial depigmentation. Roan is present and some roans have frosty manes and tails. One mare has flank roaning and no other white. There is at least one line that carries true dun. Cream has long been part of the breed but recently rules were put in place that barred palomino, cream or even light chestnut from being issued a stallion license. (Oddly enough, buckskin is not restricted.) Blue-eyed creams are prohibited. Pinto and appaloosas are expressly prohibited, and white cannot extend past the head, knees or hocks. The parent registry in the United Kingdom prohibits blue eyes, but many of the daughter registries in Europe do not, and blue eyes are seen occasionally.

Nonius

closed studbook

The Nonius can be thought of as the Hungarian version of the Kladruber—a tall harness horse with a convex profile and a very limited color range. In the case of the Nonius, the majority of the breed are black, with bay and brown occurring more rarely. Bay Nonius are dark in shade and may have sooty dappling. Most Nonius are unmarked, but stars and small amounts of white on the hind legs to occur. Leg markings are slightly more common on the bay horses than on the black or brown, and heavy ermine spotting is common.

Nordland Pony

closed studbook

Almost half of all Nordlands are chestnut, with red chestnut with a flaxen mane and tail the most typical variation. Bay, brown and black are also found. Grey is common and many ponies are dappled. The cream dilution is present, but blue-eyed creams are not accepted in the studbook. Silver is common and is sometimes paired with cream. White face markings are common but blazes that extend to the eyes are not accepted. White on the legs is permitted as long as it does not extend over more than a third of the cannon, but even moderate leg markings are less common than face markings. Blue eyes or white on the body disqualify a pony from the

studbook. An image of a crop-out pinto foal from the 1980s suggests that the classic splashed white pattern (*SW1*) might be found among the registered ponies. (It is notable that this breed, the closest relative to the Fjord, does not appear to have the two colors that define that breed: dun and mealy patterning.)

Noriker

closed studbook

Like many Baroque-era coaching breeds, the Noriker was traditionally bred in color groups. Unlike the others, however, almost the full range of original colors has been preserved. This means that all four basic colors can be found. In shade the breed resembles the other coaching breeds, with dark, fully-pigmented colors rather than the pale, mealy colors of the Belgian-influenced draft breeds. The majority of chestnuts have flaxen manes and tails. There are a handful of grey Silesian Norikers, which is separate from the Austrian breed. Dark-headed roan is present. Because the roan families are either crossed together or with black families, it is rare to see anything other than blue roan. The historical photo of a brindled roan was a Silesian Noriker. There were cream dilutes as late as the early nineteenth century. It had been speculated that silver was present but doubts were raised after tests showed that similar horses in the closely-related Black Forest Horse were chestnut. Some bay Norikers have frosty or flaxen manes, but this trait is not related to the silver dilution. There is an appaloosa strain once referred to as the Pinzgauer. It is sometimes stated that unlike the American Appaloosa, the Noriker does not have varnish roan. Because varnish roan is the base on which all the appaloosa patterns are built, it is a given that all appaloosa Norikers carry the gene responsible. Most also have the patterning gene for leopard. There are horses that inherit the varnish roan without a pattern, but that type of color is not favored. Suppressed leopard patterns, which are common, can look a lot like a large blanket pattern but true blanket patterns are rare. Tobiano was reintroduced in one line in the 1970s. There has been at least one pinto appaloosa Noriker. A recent study revealed that both *Sabino1* and *SW2* are present in the breed, but the horses that carry them—and some of the tested horses carried both—do not show visible signs. Breeders have traditionally favored unmarked horses, even going so far as to avoiding crossing blue roans to chestnuts in the belief that chestnut carriers are more prone to white markings. This favored horses that carried white suppressing factors. Another aspect of this discovery is that Norikers have been widely used for outcrossing in the light draft breeds, which opens the possibility that both genes may yet be found in previously unexpected places.

Norman Cob

studbook with grading scheme

For inclusion in the stud book, Norman Cobs must be bay, brown or chestnut. The standard permits all varieties of those three colors, but the tendency in the breed is towards the darker shades. Some of the brown Cobs come very close to black even though that color is not officially permitted. Most of the chestnuts have self-colored manes and tails, but flaxen does occur more rarely. Although there are no specific pro-

hibitions against white markings or patterns, most Norman Cobs have only moderate white markings.

Norwegian Fjord *closed studbook*

The modern Fjord is uniformly dun, though rare non-duns are rumored to occur. Beneath the dun dilution, bay, black and chestnut are present. It is likely that most, if not all, bay dun Fjords are wild bays. This would explain the minimal nature of their dark points and the pronounced white frosting on their manes and tails. It is also likely that most carry the mealy pattern, which tends to amplify frosting on manes and tails while making the body color lighter. Black dun (called *grå*) Fjords lack the mealy muzzle so typical of the breed; the mealy pattern does not show on a black horse. There are rare individuals that also carry the cream dilution. Blue-eyed creams have occurred and can be registered. Dorsal stripes and other dun factors can be seen on blue-eyed creams, though they are subtle. Generally speaking, dun factors on Fjords are lighter and less pronounced than in duns of other breeds, and some have unusually thin or incomplete dorsal stripes. This may be due to the absence of sootiness, which probably contributes to more dramatic dun factoring in other breeds. Additionally, some Fjords have black points that have shifted to a warm pewter tone, but the cause is not known. There were tobianos (*skjevet*) in the earliest studbooks, though as with Shetlands and Icelandics, the expression was often minimal. Non-duns were once more common and were accepted into the studbook. A photograph of what may be varnish roan or perhaps a reversed dapple was used illustrate the breed in a book published in Norway in 1902, but it is not clear if any individuals with that coloring were ever included in the early studbooks. In the modern breed, only small stars are considered acceptable. Larger stars, snips and even blazes occur in rare instances, but are considered a fault. White on the legs is extremely rare, and tends to be very minimal when it does occur. In most countries, a stallion with more than a small star cannot be licensed for breeding. The standard used by the American registry does not give specific guidance on white markings, but does indicate that blue eyes are a fault.

North American Spotted Draft *open studbook*

This breed was founded with a family of black tobiano part-bred Percherons, and that remains the most common coloring (and breed type) in the registry. There are other base colors, and because Paint Horses are often used some colors not typically seen in heavy breeds, like dun and champagne, can be found. Frame overo can be found, but sabino patterns are relatively rare; while many produce enough white to qualify for registration, Clydesdales have not been widely used. Among the tobianos, simple patterns and solid faces are the norm and blue eyes are rare. Appaloosa patterns are prohibited.

North Swedish Horse *studbook with grading scheme*

The North Swedish Horse is closely related to the Døle and has very similar coloring. North Swedish Horses do have an unusual variation of bay that features a pronounced silver or flaxen mane and (to a lesser extent) tail. This looks different

from bay silver in that, instead of dark roots and lighter ends, the dark and light hairs are mixed together. It is a trait that can be seen in a number of other Swedish breeds, but it is widespread in the North Swedish and may have originated with the original forest horses used to create this breed. The other way in which the North Swedish Horse is different from the Døle is the presence of dun horses in the population. Although the gene for splashed white (*SW1*) is thought to be found in the breed, horses with the classic pattern cannot be entered in the main section of the studbook.

Oldenburg *open studbook*

The Oldenburg began as a private stud producing Spanish horses in the exotic colors in demand during the seventeenth century. It was known in particular for its pale colors: white greys, whites, creams. By the nineteenth century it had transitioned to the production of heavy coaching horses in dark, conservative colors. As a modern warmblood breed, it might be said to have returned to its roots as it has the reputation for being one of the studbooks most open to exotic colors. There are cream Oldenburgs. Tobiano stallions have been approved for breeding in Europe and a frame overo mare has been approved for breeding in North America. One near-white foal and her sabino roan dam were identified as having a new white spotting pattern (*W16*). At least one mare with flashy white markings had blue eyes, but no obvious splashed white phenotypes have yet been documented. [Note: There are efforts to preserve what is left of the heavy coaching lines as the Alt-Oldenburg.]

Orlov Trotter *closed studbook*

All four basic colors are present, though chestnut is rare. The color most closely associated with Orlovs is grey, and vividly dappled grey in particular. In addition to dappled greys, some Orlovs have the dense fleabitten phenotype more commonly seen in Arabians. Individuals with extreme facial depigmentation can be found, including the Olympic dressage competitor BALAGUR. One stallion from the nineteenth century was black with an extensive rabicano pattern, but it does not appear he passed on his color to later generations. A color that did get passed down, however, was cream. The gene was hidden for generations by grey until a buckskin colt was born in the 1980s. Some lines produce the bragada pattern and sabino roans of the all-over roan type are occasionally seen. An unusual white pattern that does not fit any known category was recently documented in a bay Orlov colt.

Paint *studbook (outcrosses)*

All four basic colors are present. A full range of shades, light to dark, can be found. Sooty is present. The wild bay variant is rare, but is present. Chestnuts may have flaxen manes and tails, and some bay or brown individuals have mixed flaxen tails. Grey and dark-headed roan are present. White ticking, including the rabicano pattern, is present though many forms of sabino also have flank roaning and coon tails. The cream dilution is common, and blue-eyed creams are accepted for full registration provided the horse has the required white

patterning. Dun is also common, and *non-dun1* is present. Champagne, pearl and silver are rare. Tobiano, frame overo and the full range of sabino phenotypes are found. The presence of *Sabino1* has been verified by testing. One white family (*W10*) originated with a double-registered Quarter Horse stallion, and descendants of the white spotted (*W*) Thoroughbred families can be found as well. Classic splashed white (*SW1*) is present, and two other testable forms of splashed white (*SW2* and *SW3*) can be found. It was originally believed that *SW2* originated in this breed, but it has since been documented in two Old World breeds. At least one chestnut and black mosaic has occurred. All known factors that recolor white areas—badger faces, reversed markings and belton patterning—can be found. Horses must have a proscribed amount of white beyond ordinary face and leg markings, or color in the case of mostly white horses, to qualify for regular registration. Horses that do not meet these requirements can be registered as Paint-Bred and can compete in that division.

Paso Fino *closed studbook*

All four basic colors are present. Sootiness is common, though all-over dark colors are more common than those that are heavily dappled. Black chestnuts, similar to those in Morgans, can be found. Some chestnuts have flaxen manes and tails. Wild bay individuals with some mealy patterning are sometimes seen. Grey and dark-headed roan are present. White ticking is found and can be quite pronounced, even on horses without significant white markings. Both the cream and the dun dilutions are present. Tobiano is present. Sabino roan and white-born foals occur in some families. Bragada sabino is present, and rare instances of spontaneous roan and patchy sabino have been documented. Some of the tobiano patterns have ragged, irregular outlines, which indicates that some form of sabino is present. Classic splashed white patterns have occurred in Puerto Rican lines, suggesting that *SW1* is present. Reticulated lacing is found in some lines. Golden eyes unrelated to the dilution genes, known as tiger eyes, appear in some individuals. Paso Finos display the full range of ordinary face and leg markings.

Percheron *closed studbook*

In most countries, the only basic color present in the Percheron is black. In the United States, all four basic colors can be found. Bay and brown are particularly rare with just a handful of horses remaining; most Percherons identified as dark bay are actually faded blacks. Close to half the population in both America and France are grey. The breed has been selected to grey slowly, and vivid dappling is common. It is not unusual to see very dark dapple greys with very pale manes and tails. This is not a sign of the silver dilution but is a variation in the progression of the greying. Fleabitten grey does occur, but is uncommon. Dark-headed roan is present in American lines but is rare. Most American Percherons are solid or only minimally marked with white, though the chestnuts tend to have more extensive white markings. French Percherons are slightly more likely to have white on the face but rarely have white on the legs. Although the color range in the population

is quite limited, the American registry does not deny registration based on color. In France, only grey or black horses are accepted for registration.

Peruvian Horse *closed studbook*

All four basic colors are present. In shade, the colors tend to be dark. Among the chestnuts, flaxen manes and tails are common. Grey, roan and rabricano are all present. Cream and dun can be found, though the latter is rare. One of the cases that led to the discovery of the pearl gene was a Peruvian filly; to date the Peruvian is one of only two New World breeds known to carry pearl. There have been bragada, patchy sabino and sabino roan Peruvians, but while the American registry no longer prohibits pintos, even flashy white markings are controversial with many breeders. A rule prohibits albinos from registration; in most registries this type of wording is intended to prohibit blue-eyed creams, but the American registry has clarified that this only applies to “pink-eyed albinos”.

Poitevin Mulassier *studbook with grading scheme*

The basic color of most Mulassiers is black or dark brown. Bays are less common and also tend to be dark. Chestnuts are rare. Grey and roan can both be found within the breed, but what the Mulassier is best known for is the presence of dun. This is the only draft horse breed where dun could be said to be common. In addition to ordinary dun factors, at least one dun gelding had partial brindling. The preference among breeders is to avoid white markings, though small stars and snips and lower socks do occur.

Polish Draft Horse *open studbook*

All four basic colors are present, though close to half the registered horses are bay. Because the registry is open to any horse that meets the type and size requirements, all the variations of the basic colors found in European heavy horses can be found within the breed. Grey and roan are also present, though grey is rare. (Generally speaking, the Belgian Brabant and Ardennes have had more influence on the breed than the Percheron.) There are horses with white ticking, including those with enough white hairs to appear all-over roan. Dun is rare, but comes from the original foundation stock. Silver is also rare and comes from recent importations of Comtois. There are occasional bragada sabinos, though the prevalence of modestly-marked breeds like the Brabant has reduced the chance of getting extensive white. There are a handful of louder sabinos in the studbook; all are the offspring of an imported Clydesdale.

Pony of the Americas *studbook (outcrosses)*

Because small Appaloosas were used to help establish this breed, the range of colors and patterns are similar to those available in the Appaloosa. The only major difference is that the breed takes a more restrictive approach to white markings and pinto patterns, which are prohibited. Face markings are limited to an area from the center of the ear to the corner of the mouth and then down the chin, and on the legs to the top of the knees and hocks. Ponies with white beyond those

boundaries can be registered but cannot be used as breeding stock. Males must be gelded but mares with excessive white are issued restricted papers. Blue eyes are not considered a fault unless the pony has excessive white markings.

Pottok *studbook with grading register*
The original semi-feral Pottoks were dark bay, brown or black. Tobiano was introduced into the herds in the early nineteenth century and is part of the purebred (Section A) portion of the studbook. There are a few other colors in the Sport section of the studbook (Section B), but these usually come from outcrossing. Purebred Pottoks do not have white markings, but in a situation similar to that of the Huzul, the tobianos often do have face markings—and in some cases significant amounts of white on the face. Just as with the Huzuls, this trait is linked to the tobiano pattern and their non-tobiano offspring do not have face markings.

Quarter Horses *studbook (outcross)*
All four basic colors are present, and can be found in a full range of shades from light to dark. A wide range of sooty phe-

notypes are seen, and chestnut horses may have dark, self-colored or flaxen manes and tails. Grey, dark-headed roan, spontaneous roan and white ticking patterns (including rabi-cano) are all found in the breed. The cream, dun, champagne and silver dilutions are present, though the last two are rare. Blue-eyed creams have been accepted since 2005. There is one known pearl line. *Sabino1*, frame overo, and most testable splashed white patterns have been confirmed by testing. The bragada sabino phenotype is common. Varnish roan survived in at least two lines because the true nature of the color was not recognized. There is at least one horse with a true blanket pattern, and it is possible that other lines carry appaloosa patterns, since those are not visible unless paired with varnish roan. In the past horses with excessive white—either pinto or appaloosa—were denied registration. That changed in 2005, though they are issued papers that indicate they have a fault. There have been several cases of chimeric brindles, some of which have been confirmed by testing. A few duns have shown isolated brindling. Other unusual patterns found include Birdcatcher spots, chubari spotting, reversed dapple roaning and a variety of mismarks. Factors that recolor white

Guide to Accepted Outcross Breeds

The difference between an accepted outcross and a grading register is that a breed that allows outcrosses considers the first-generation offspring of a cross to be members of the breed, entitled to compete and produce offspring. A grading register offers a path for horses outside the existing studbook to work up to recognition over a number of generations, but do not typically have the ability to be exhibited as members of the breed.

Appaloosa	Quarter Horse, Arabian, Thoroughbred
Ardennes	Belgian Brabant
Australian Pony	Welsh Pony
Black Forest Horse	Individual stallions chosen
Budyonny	Thoroughbred, Trakehner
Frederiksborg	Danish Warmblood, Oldenburg, Hanoverian, Holsteiner, Shagya, Arabian, Trakehner, Thoroughbred, Lusitano, PRE, Lipizzaner
Gelderlander	Dutch Harness Horse, Saddlebred, Hackney Horse
Hungarian Coldblood	Percheron, Belgian Brabant, Noriker
Italian Heavy Draft	Breton
Kisbér Félvér	Gidran, Thoroughbred, Shagya, Furioso-North Star
Knabstrupper	Frederiksborg, Oldenburg, Trakehner, Shagya, Arabian, Danish Warmblood, Holsteiner, Thoroughbred, Lusitano, PRE, New Forest, Welsh Pony, Connemara, Dartmoor, Shetland Pony, Miniature Horse
Lewitzer	German Riding Pony
Paint	Thoroughbred, Quarter Horse
Polish Draft Horse	All European heavy breeds
Pony of the Americas	Connemara, Morgan, Quarter Horse, Appaloosa, Arabian, Thoroughbred, Welsh Pony
Quarter Horse	Thoroughbred
Tersk	Arabian, Thoroughbred, Trakehner

areas, including belton patterning, can be found in some lines. The full range of white face and leg markings can be found.

Rocky Mountain Horse *closed studbook*

All four basic colors are present, with black the most common. Although strongly associated with the silver dilution (called “chocolate” by breeders), Rocky Mountain Horses have all the known, testable dilutions with the exception of pearl. Combinations of these not often seen—sometimes also paired with true roan—are one of the features of this breed. Although some Rocky Mountain Horses are registered as grey, most appear to be misregistered roans. The registry accepts what it terms any “solid body” color, but does not allow bald faces or white above the knees or hocks. A bald face is defined as extending past the inside corner of an eye or the corners of the mouth, or beyond the chin. There is a family of Rocky Mountain Horses that have produced classic splashed white offspring, but the heterozygous horses fit within the white limits. There is no prohibition against blue eyes.

Russian Bashkir *landrace*

While the American Curly uses the same name, this primitive landrace is unrelated—and not particularly noted for being curly. It is frequently dun, and somewhat less often cream diluted. Some dun individuals have displayed bider markings. Most Bashkirs are solid or only minimally marked, but extensive white and even blue eyes are sometimes seen. Given the nature of those markings, it is possible that some type of splashed white pattern is present.

Saddlebreds *closed studbook*

All four basic colors are present, with chestnut the most common. Colors can be found in a full range of shades from light to dark, though the tendency is for the darker shades. Some horses are sooty, and chestnuts can have flaxen manes and tails. Grey is uncommon and historically has not been popular, though it is not penalized or restricted. Dark-headed roan is rare. Most Saddlebreds identified as roan fit the phenotype for spontaneous roan rather than true dark-headed roan. Horses with white ticking can be found, though the classic rabicano pattern is rare. At least one horse has a pronounced reversed dapple roaning. Both the cream and champagne dilutions are present. Because there has historically been a focus on breeding palomino Saddlebreds, bay and black dilutes are less common. True dun is not believed to be present, but *non-dun1* can be found. Blue-eyed creams are accepted. There is at least one line that carries the silver dilution. Tobiano is present, and many have irregular face markings and blue eyes, but the specific cause is not known. Frame overo appears to have been present in the breed from its founding but has always been rare. Classic splashed white patterns can be found and is likely caused by the *SW1* mutation. Because some of the early horses carried crosses to OLD COPPERBOTTOM, it is possible that some carried *Sabino1*, but it has not been found in the modern population. Bragada sabino is present, but extensive body-spotting is rare. There have been individuals with extensive Birdcatcher spots, and there was one well-known case

of a horse that developed the large white patches associated with fungal infections. The breed has the full range of face and leg markings, though with a few exceptions the popular show lines tend to have conservative amounts of white.

Selle Francais *open studbook*

All four basic colors are present, though brown and black are less common than bay and chestnut. Colors tend to be deep and fully pigmented (not mealy) and most chestnuts have self-colored manes and tails. Grey is present. Cream can be found in the modern population, though some of the cream mare lines unique to the breed appear to have been lost. There are several tobiano lines and at least one tobiano mare displays dramatic belton patterning. Frame overo is present through some of the descendants of the stallion VIC ALTAIR. A black leopard with a broad blaze and blue eyes was foaled in 2018; his dam was a Wielkopolski accepted into the French studbook. All-white, sabino roan and patchy sabino patterns occur in the descendants of the white Thoroughbred MONT BLANC II. There have also been other instances of spontaneous white foals, though most have not been used for breeding. Selle Francais have a full range of white markings, from unmarked solids to fully white faces and high stockings.

Shagya Arabian *closed studbook*

The majority of Shagya Arabians are grey, and the colors of those that are not grey suggest that most are born bay or brown. Chestnut is less common. Although Shagyas have a high percentage of Arabian blood, on average the population is darker in shade (when not grey) and more conservatively marked than the purebreds.

Shetland Pony (British) *closed studbook*

Solid black is the traditional color, particularly in the larger Standard Shetlands, but all four basic colors can be found. Wild bay and both the sooty and mealy patterns are present. Grey and roan are present. The cream dilution is present and blue-eyed creams are accepted. Dun is relatively common, particularly among the smaller (Miniature) Shetlands. There are silver dilutes in the German, Danish and Australian studbooks. In rare instances black ponies can have flaxen tails and even faded manes, but they are not silver dilutes. The breed also has a unique recessive dilution called mushroom that looks like a dull, undappled black silver. Bay mushroom ponies have taupe-colored bodies and black points. Tobiano is present, and like dun is more common in the smaller ponies. Reduced white patterns, caused by the *Cryptic* modifier, are relatively common; these may have one or more colored legs. In this breed, the tobiano pattern is also prone to slipping or skewing in unusual ways. Blue eyes have occurred, but are rare. Classic splashed white (*SW1*) has been identified in the breed. The British standard prohibits ponies from having an appaloosa pattern, though it is rumored that appaloosa Shetlands were entered in some European studbooks. White on the face beyond a small star is rare in all but the tobiano ponies, and white leg markings not caused by the tobiano pattern are even more rare. This has led to speculation that in

addition to not having any of the sabino variants, the breed also lacks the genes for ordinary white markings.

Shire *closed studbook*

The most common base color in Shires is black, followed by brown and bay. The rare chestnuts are penalized by the British breed standard, but the American standard does not. Shades tend to be darker and sootiness is common. Grey is present, and many are vividly dappled. Dark-headed roan was once present, and there were a number of very successful roan Shires in the United States in the early twentieth century, but the color was lost when the draft horse population declined. Horses called roan in the present population are invariably sabino roans. That pattern is rare, and excessive roaning is considered a fault in both American and British show rings. Some horses are recorded as “dun” in the early studbooks, but their exact color cannot be known for certain since they have no modern descendants. The cream dilution was inadvertently introduced in American lines through a mare used in the Grading Register. Because black is so common, and cream is not obvious on a black horse, the color remained hidden for generations. With so few cream dilutes, all of which are mares and closely related, no blue-eyed creams have been produced; it is not clear what position the American registry might take on the color. Some black-based Shires have mixed flaxen tails, but this is unrelated to the silver dilution. The bragada sabino phenotype is very common, but extensive white on the body is considered a fault and is not common. The extensive sabino patterning common in the Clydesdale is not typical of the Shire. Tobiano was present when the breed was founded, but was lost soon afterwards. Blue eyes are relatively rare. The American breed standard indicates blue eyes are undesirable; the British registry will not permit them in stallions or mares entered into the Grading Register. Badger faces are seen on some horses. Although solid and minimally marked Shires could be found in the past, the modern breed appears to be uniformly marked with white.

Silesian *open studbook*

Although all four basic colors are present, black and dark bay or brown predominate. This is also the heavy warmblood breed where grey is more common. There is at least one mare with the classic rabicano pattern. There are a few tobianos in the stud book; all trace to tobiano Malopolskis and Wielkopolskis. There are a few blanket appaloosa Silesians, but the remaining individuals are older and it does not appear that they have been used to produce purebreds. The full range of white markings are found in Silesians, but they are notable in that flashy white markings are commonly seen on black and brown horses. In most breeds, those markings are more often linked to the chestnut color.

Sorraia *closed studbook*

While the color most associate with the Sorraia is pale grulla, the breed comes in both bay and black dun. The founding population was almost evenly divided: six bay dun and five grulla. Although most exported Sorraias have been grulla,

bay dun is still easily found in Portugal. Non-duns are known to occur on rare occasions, and at least one dark grulla was tested to have *non-dun1*. White markings beyond a small star are extremely rare, though one stallion and his son both have a white fetlock.

Spanish Colonial *(semi-feral) landrace*

The term the American Livestock Conservancy uses for mustangs of proven Spanish descent, or of clear Spanish type, is “Spanish Colonial”. This includes not just the herds in the American southwest, but also the Bankers of the eastern coast and some of the southern gaited landraces like the Marsh Tacky and Florida Cracker. Just about every color and pattern with the possible exception of manchado can be found among the different sub-populations. There is even a unique variant among cream-diluted tobianos known as calico that causes random patches to revert to back to their original (undiluted) color. One of the early breeders objected to the tobiano pattern and the registry he founded still prohibits it but the other four do not. Some of the substrains (like the Marsh Tackies of South Carolina) have more limited color options, but overall this is the breed with the most color options available.

Standardbreds *closed studbook*

Although all four basic colors are present, bays and browns dominate the breed and chestnut has become quite uncommon. The shade is often dark, but some of the chestnut horses have had flaxen manes and tails. Grey is present but has never been common, despite the success of a number of grey horses. Dark-headed roan has a long history in the breed, particularly in the pacing lines, but has become rare. White ticking is rare, and individuals with lacing have been documented. The cream dilution is present in one Australian line. In the United States a perlino-looking horse reported to be a cross-bred Walking Horse and Standardbred proved to have a single cream gene and a new cream allele, *sunshine*. It is not known which breed was the source for the alternate allele, but given how common cream is in Walking Horses it seems more likely sunshine came from the Standardbred. (The horse’s exact pedigree is not known so the allele might not be in either breed, but rather in the grade horse population.) Dun was present in the early volumes of the American studbook, particularly among the pacers, but died out in the early twentieth century. There is a tobiano line that originated in Australia that is also present in the United Kingdom. Bragada sabinos can be found but are not common, and at least one individual had oddly placed body-spotting. Several instances of suspected white spotting (*W*) mutations have occurred in recent years. One of these produced a patchy colt with a splash-like pattern, though his eyes were dark. A bay stallion with a bald face, blue eyes and stockings was born in the 1970s. He was said to have been deaf, and produced a number of flashy, blue-eyed foals, but he did not produce the classic splashed white pattern. Although a full range of white markings can be found in the breed, unmarked and minimally marked horses are the norm.

Suffolk Punch

closed studbook

The Suffolk is uniformly chestnut. All shades are accepted, but the most common is a clear red chestnut. Dark shades are less common, and pale chestnut is rare. Early breeders considered mealy chestnut to be a fault, so it is unlikely that the pattern persists in the modern breed. Self-colored manes and tails are typical. Some Suffolks have white hairs mixed in their coat, and this is considered acceptable as long as the overall appearance is not of a roan horse. White face markings are permitted, though they are rare and tend to be minimal. The original language stipulating that horses could not be denied entry into the studbook based on white on the face or legs was altered in the early twentieth century to just white face markings, so white leg markings are not officially sanctioned. Small amounts of white on the feet do occur in rare instances, and have not prevented horses from being registered. Occasionally a horse is born with a small white mismark on the body; these are probably not genetic and have not been penalized.

Swedish Ardennes

closed studbook

The colors of the Swedish Ardennes are similar to the original Ardennes with a few notable exceptions. Chestnut is much more common, and many of the bays have the unusual frosted mane that is seen in other Swedish breeds. Grey and the silver dilution are both present even among the approved stallions. Swedish Ardennes are also more likely to have white markings.

Tarpan (Heck Horse)

closed studbook

Despite the name, the horses in the Tarpan studbook are not true Tarpans, but the descendants of an experimental breeding program designed to “restore” the extinct wild horses. For that reason, they are also called Heck Horses after the German zoologists Heinz and Lutz Heck. The Heck brothers used a combination of domestic ponies and Przewalskis. The breed is uniformly grulla, with most individuals quite pale in shade. A few individual horses have had modest white markings, and when bred together two of those had what appeared to be a (homozygous) classic splashed white foal. The *SW1* gene is found in both the Icelandic and Gotland Pony, both of which were breeds used by the Hecks. Tarpans with white markings are included in the appendix of the studbook, but their solid offspring are eligible for inclusion in the main book.

Tennessee Walking Horses

closed studbook

Black has been the favored color since the 1940s and is still the most common, but all four basic colors are present. Shades from light to dark can be found, and some individuals are sooty. Flaxen chestnut is common in some lines. The champagne dilution was present in some of the earliest foundation horses. Individuals with the cream dilution were later added to meet the demand for golden horses with dark skin. Dun and silver are rare, and it is unclear how either mutation came into the population. Grey was rare, but has become more common in the last few decades. Dark-headed roan is uncommon. Most Walking Horses registered as roan have

the *Sabino1* mutation, rather than classic roan. *Sabino1* was common among the foundation horses, and this is one of the few breeds where the pattern is widespread. Homozygous *Sabino1* horses, which are white, were common when the registry was formed and are still accepted, though they are less common now. Bragada sabino patterning can be found, but is not as common as the sabino roan phenotype. Patchy sabino phenotypes with well-defined contrast between the white and the colored areas are uncommon. Tobiano and frame overo are present, though the latter is rare. At least two lines have tested positive for *Splashed White1* (*SW1*). Blue eyes are uncommon but do occur in both tobiano and *Sabino1* horses, especially those that are homozygous. At least one line carries varnish roan, and one horse from that line has a small blanket in addition to the varnish roan coloring. Walking Horses show a full range of leg and face white, but there is a tendency to fall into one of two extremes: little to no white markings and flashy white markings with some degree of roaning.

Tersk

studbook (outcrosses)

Most Tersks are born chestnut, though all four basic colors are present. Shades tend to be dark and deep liver chestnut is often seen. However, the color most commonly associated with the Tersk is grey, often with a metallic sheen. Because so many of the greys are homozygous, the tendency is to grey early and completely. Facial depigmentation is common. At least one grey had loud chubari spotting along with a bragada sabino pattern. There are cream dilutes in the early volumes of the stud book, though it does not appear that the color is still present. Flashy white markings are common and some horses have belly spotting.

Thoroughbreds

closed studbook

Thoroughbreds come in all four basic colors, though black is uncommon. Like the other Eastern breeds, colors tend to be fully pigmented rather than mealy, though it is possible to find wild bays. Flaxen is rare, so most of the chestnuts have self-colored manes and tails. Some bay and black Thoroughbreds have flaxen mixed in their tails. Grey is present. One of the grey families is known for slow greying and while they do not look quite like the unusual “Spanish greys” their look is unusual. Most Thoroughbreds that are called roan are greys, but there is a dark-headed roan line that originated with the stallion CATCH A BIRD, who was brown with white brindling. He did not pass on his own odd markings, but he is believed to have carried a new roan mutation. Rabicano and other forms of white ticking can be found. The cream dilution is present in three different lines, two from the United States and one from France. In all three cases, there are questions about the purity of the founders since the color cannot be explained by the pedigrees on record, but this does not affect the registration status of the modern descendants. Blue-eyed creams are accepted. Of the twenty identified forms of white spotting (*W*), six originated in the Thoroughbred and quite a few more are suspected. Some consistently produce all-white individuals, but many others produce patterns that

look like patchy sabinos or even sabino roans. There are bragada sabinos in the breed, and at least one sabino mare was badger-marked. There have been a handful of horses that are suspected to have some type of splashed white mutation, but the classic pattern (*SW1*) is not thought to be present in the population. Frame overo is present, though like the cream dilution there is no explanation for how it came to the breed. One stallion in Argentina had the manchado pattern. There is also a breeder in Britain attempting to introduce the tobiano pattern through the Jockey Club's Grading Register. Some of the less common markings in horses take their name from famous Thoroughbreds who carried them, including BendOr marks, Birdcatcher spots and Tetrarch spots. Thoroughbreds can display the full range of ordinary leg and face markings.

Tori *studbook (outcrosses)*

Chestnut is the predominant color in the breed, though the other basic colors can be found. The colors tend to be deeply pigmented and sootiness is common. Many of the chestnuts have flaxen manes and tails, even when the body color is dark. Modern grey Toris usually get their color from a Hanoverian parent, but there are old Tori lines that carry grey. Roan is rare. There have been a few instances of all-over white ticking on chestnuts ("spontaneous roan"). Cream was once more common but is now relatively rare. There is one patchy sabino Old Tori stallion that tested homozygous for the *W20* mutation, and bragada sabinos are sometimes seen. Blazes and socks or stockings are common, especially among the chestnut Old Toris, and it is rare to find a Tori without white markings of some kind.

Trakehner *studbook (outcrosses)*

All four basic colors are present, with the darker shades more common. Historically the breed was characterized as dark bay or black, and black is more common than might be expected in a breed with such a strong Eastern influence. Wild bay and the mealy pattern do not appear to be present in the current population. Grey is present and there is one dark-headed roan line. Some individuals from the roan family carry an additional modifier that adds white hairs to the face and points, which results in a color that is difficult to distinguish from grey. One stallion with the spontaneous roan phenotype, born from ordinary chestnut parents, was named champion of the stallion licensing in 2012. There is a bay mare with a white tailhead and unusual dappled roaning, though neither parent is roan or grey. There were dilutes in the early studbooks, but it is believed that these were lost during World War II. More recently the cream dilution was reintroduced into the studbook through a daughter of a cremello Thoroughbred. At least one leopard appaloosa mare was included in the early stud book, though she does not appear to have modern descendants. This does open the remote possibility that there are appaloosa patterning genes in the population, hidden by the absence of the *Leopard Complex (Lp)* gene to activate them. Tobiano was present when the breed was founded and was preserved by Polish and Russian

breeders and later reintroduced. There are horses with the bragada phenotype and a few that have had patchy sabino patterning, though none of the latter patterns have been very extensive. Classic splashed white (*SW1*) has been confirmed by testing, and at least one historical photo suggests that the pattern was present in the pre-war population. It is likely that the rare blue eyes seen in some individuals are due to this pattern. Theoretically it is possible that any of the patterns currently found in the Thoroughbred, which would include frame overo, manchado and several varieties of white spotting (*W*), could be incorporated into the breed in the same way that the cream dilution was, though this has not yet happened. Trakehners display the full range of ordinary face and leg markings, though outside the lines that carry one of the white patterns, these tend to be conservative and unmarked individuals are not uncommon.

Vladimir Heavy Draft *closed studbook*

The Vladimir Heavy Draft is sometimes referred to as the Russian Clydesdale, and the common colors are exactly what might be expected of a breed founded on Clydesdale blood. The main difference is that it is still possible to find Vladimir Draft Horses with ordinary—even fairly minimal—white markings and even when sabino patterning is present it tends to be less extensive than what is seen in the modern Clydesdale. The other noticeable difference is that chestnut is more common, and is found in a wider range of shades from mealy blonde through heavily shaded sooty. Like Clydesdales, there were greys but that color appears to have been lost over time.

Vyatka *landrace*

Like many of the rustic breeds of eastern Europe, the predominant color of the Vyatka is dun. Chestnut duns are much less common, but all four basic colors are present. Dun is common, but *non-dun1* and *non-dun2* can be found. The cream dilution is rare and blue-eyed creams are accepted. Small white markings are relatively common, while leg markings occur more rarely. Solid, unmarked colors are preferred. One stallion tested positive for *W20*, but was not extensively marked with white.

Welsh Ponies (Sections A and B) *closed studbook*

Welsh Ponies have the widest range of colors and patterns of all the British native breeds. All four basic colors are present, and the shades range from light to dark. Sootiness is common in all its varieties. Flaxen manes and tails are common in chestnuts, and flaxen or silver tails can be found on some black-based ponies. Some chestnuts have gray manes and tails. Wild bay is rare, and while some individuals have mealy undersides the extended mealy pattern seen in some draft and pony breeds does not seem to be present. Grey is common. Pronounced facial depigmentation is seen on some greys but is rare. Dark-headed roan is present, and some roans have frosty manes and tails. White ticking and coon tails are common, and some individuals are so heavily ticked with white that they closely resemble true roans. The cream

dilution is present, and blue-eyed creams are accepted by both the American and the British registries. Dun and silver are found in both British and American lines, but are rare. The basic appaloosa gene, *Leopard Complex (Lp)*, was once a part of the breed and is present in at least one modern line. One colt from this line did develop a loud snowflake pattern, but he was gelded. It does not appear that the family carries any of the additional genes that produce blanket or leopard patterns. Because these genes are not visible unless the horse also has the varnish roan gene, it is possible that they have remained hidden in breed. Because of the specific wording in the British rules—"piebald and skewbald"—appaloosa patterns are not expressly forbidden though a really obvious pattern would undoubtedly raise eyebrows. Sabino patterning is common in the breed, particularly the bragada and sabino roan varieties. Even the patchy sabinos, which are far less common, tend to have a very roaned or lacey outline. There have been ponies to test positive for *Sabino1*, but those are rare. Classic splashed white is present in some of the oldest lines. For this reason, many breeders do not consider bright blue eyes a fault and they are not penalized. In the United Kingdom ponies with the classic splashed white pattern (homozygous for *SW1*) are not granted full registration status. Sabino patterns are sometimes accepted into the regular registry if the outline of the pattern is indistinct. In response to potential legal liability, the American registry eliminated its ban on pinto patterns in 2005, though their inclusion remains controversial. The full range of face and leg markings are found, though the breed does have a tendency towards extensive markings, and ponies without white are uncommon.

Welsh Cob (Sections C and D) *closed studbook*

Like the Welsh Ponies, Welsh Cobs have all four basic colors. They are somewhat more inclined to dark shades and sootiness than the ponies. Flaxen chestnuts are common, and mixed flaxen tails are seen in some bay or black Cobs just as they are in the ponies. Like the ponies, there are rare individuals with mealy undersides. The cream dilution is common, and blue-eyed creams are accepted. There are a handful of



29. Frame overo with belton patterning

dun cobs, and one Section C stallion tested positive for silver. One family carries a unique dilution that cannot be detected by current tests but that appears to have an additive effect to cream much like the *Pearl* allele. It seems likely these cobs may carry one of the newly-identified alternate cream alleles, or have one not yet identified. Unlike the ponies, grey is very rare in the cobs and is viewed with disfavor by some breeders. Dark-headed roan is uncommon, and there have been at least two instances of spontaneous roans. White ticking is present and can be quite pronounced, especially on individuals with extensive white markings. The bragada sabino phenotype is common in some lines. Classic splashed white (*SW1*) has been documented in Cobs but is far less widespread than in the ponies. There was a leopard appaloosa Welsh Cob at the turn of the last century, but his line was lost in purebred Welsh. Welsh Cobs have the full range of face and leg markings. Section D Cobs are somewhat more prone to conservative markings than the other sections of the Welsh studbook.

Wielkopolski *open studbook*

All four basic colors are present. Colors tend to be deep and fully pigmented (not mealy) and most chestnuts have self-colored manes and tails. Grey is common. There are at least three roan lines, but each has only a handful of living representatives. White ticking is found but is usually paired sabino markings. One "spontaneous roan" gelding is known to exist. There are several mare lines that carry cream and blue-eyed creams are accepted. There is at least one dun mare; her color comes from an earlier outcross to a Fjord, but most horses listed as "dun" in the studbook are buckskin. Two tobiano Trakehner lines (*CORNELIA* and *BRANDUNG*) are preserved in this breed, and there are a significant number of descendants in the modern population. One tobiano stallion from that line produces the kind of broken blazes and spotting typical of low-level belton patterning and at least one tobiano has a reversed stocking. In general, the tobianos in this breed tend to have significant face white and more complex patterns than might be expected from a breed that is otherwise prone to moderate amounts of white. There are descendants of the appaloosa Malopolskis in the studbook, though they are far less common than the tobianos. Tobiano and appaloosa lines are crossed, so tobiano pintoalosas can be found.

Yakut *landrace*

All four basic colors are present, though they are usually (but not always) paired with dun. Bay- and chestnut-based colors usually show a pronounced mealy pattern, and minimal black points are more typical on the bays. Flaxen manes are common among the chestnuts. Grey is common and vivid dappling is sometimes seen. Although much less common than dun, the cream dilution can be found. There are Yakuts that look like they may carry silver, but this has not been confirmed by testing. Leopard and varnish roan appaloosas are sometimes seen. The tobiano pattern is present and strongly suppressed patterns do occur, suggesting some Yakuts may carry the *Cryptic* modifier. Yakuts seem to lack the genes for ordinary white markings.



30. *Bragada sabino*



31. *Color-shifted appaloosa*



32. *Large blanket with lightning marks*



33. *Fleabitten grey*



34. *Blanket with snowflakes*



35. *Large blanket with lightning marks*



36. *Patchy sabino*



37. *Frame overo*



38. *Liver (sooty) chestnut*



39. *Bay silver*



40. *Spotted blanket*



41. *Blood-marked fleabitten grey*

Helpful Terminology

Using accepted genetic terms for colors and patterns (even if they conflict with those used by registries) permits more clear communication between people from different breeds, disciplines and countries. Because the typical model horse show is diverse, this universal language is useful. Also included are the names of breeds from their countries of origin, when they differ from the English language version. When using online resources to learn about less common breeds, the original name often leads to more reliable information.

A

allele: different versions of a gene

Andalusian: Pura Raza Espanola

appaloosa: general term for the group of patterns caused by the *Leopard Complex (Lp)* gene; when capitalized, a stock horse breed with appaloosa coloring

B

badger face: having a large colored spot that covers the front of the face

basic colors: bay, brown, black and chestnut

belton: small colored spots inside white markings or patterns; a color similar to that of an English Setter

Bend Or spots: sooty spots on a red or palomino background

Birdcatcher spots: small white spots on a colored background

Black Forest Horse: Schwarzwälder Kaltblut

blood-marked: irregular patches of dark hair on a grey horse

bragada: type of sabino characterized by white on the face and legs, and a patch on the belly or girth; the most common of the sabino phenotypes

C

cat tracks: small colored spots in the white areas of a tobiano, usually a sign of homozygosity

champagne: dilutes the skin, hair and eyes; the skin is pinkish with freckles, the red hair is gold, the black hair is chocolate, and the eyes are amber

chubari: large oblong spots that fade more rapidly than the surrounding grey coat; sometimes called Tetrarch Spots

classic splashed white: the distinctive pattern seen in horses homozygous for *Splashed White1 (SW1)*

closed studbook: only offspring from two registered parents are included in the studbook

Coldblood Trotter: Kallblodstravare

color shift: alteration of black pigment to a warm pewter or silvery brown, also called bronzing

coon tail: white hairs at the tailhead, also called a skunk tail

cream: dilutes red pigment to yellow, but leaves black pigment unchanged; homozygous creams have near-white hair, pink skin and blue eyes

cream pearl: horse with one cream and one pearl gene, visually similar to double-dilute creams

crop-out: horse of an unexpected color or pattern

Cryptic: a modifier that minimizes white patterns

D

dapples: pattern of spots lighter than the rest of the coat

dark-headed roan: mixture of white and dark hairs on the body but not the points; does not lighten with age

depigmentation: gradual loss of pigment in the skin, most often, but not exclusively, seen in greys

dilution: a type of gene that lightens the coat, skin or eye color

Døle: Dølahest

dominant white: type of mutation that produces white-born or sabino patterns, believed to be lethal when homozygous

dun: dilutes the body color but leaves the points unchanged, also produces dun factors; the dominant of the three alleles found at the Dun locus; *see Non-dun1*

dun factors: dorsal stripe, leg barring, shoulder cross, cobwebbing and other traits associated with the dun coloring

F

fewspot: horse that has both the leopard pattern and two copies of the *Leopard Complex* gene; a nearly white, unspotted appaloosa

Finnhorse: Suomenhevonon

flaxen: blonde hair, refers to the mane, tail and lower legs

fleabitten: small dark flecks of color, usually red, that appear on older greys

frame overo: white patterning that concentrates on the sides of the horse, leaving a dark frame around the outside of the horse, lethal when homozygous

frosty roan: closely resembles dark-headed roan, but the mane and tail have white hairs

G-H

German Classic Pony: Deutsche Classic-Pony

Gotland Pony: Gotlandsruss

grading scheme: process for introducing new blood into a studbook; also called an appendix register

Hungarian Coldblood: Magyar Hidegveru

L

landrace: type of horse that is purpose-bred and recognizable, but not governed by a breed registry or under state control

leopard: pattern of spots of color on a white background

Leopard Complex: gene that produces varnish roan and the appaloosa characteristics; when paired with pattern genes it

can produce a range of appaloosa patterns

lethal white: see frame overo

light black: black horses that look chocolate or faded in color, but do not test positive for a known dilution

M

manchado: rare form of overo patterning found in Argentina

mealy: pattern of light areas around the muzzle, eyes, lower legs and undersides of the horse

mismark: marking that is not thought to be genetic, can be colored or white

mosaic: large irregular patches of two basic colors, typically chestnut and black; a type of somatic mutation

mushroom: dilution of chestnut that resembles black silver

N

non-dun1: gene that produces an intermediate phenotype between true dun and true non-dun (*d2*). Typically has primitive markings but a minimally diluted body.

non-dun2: Third allele at the Dun locus. responsible for 'ordinary' colors

Nordland: Nordlandshest/Lyngshest

North Swedish Horse: Nordsvensk Brukshäst

O

open studbook: studbook that accepts horses that are unrelated to, or have no recorded connection to, the existing members of the breed; not synonymous with not having standards since warmbloods that use keuring are also "open"

P

Pattern1: gene that, when paired with *Leopard Complex*, produces the leopard pattern

pearl: recessive dilution where the homozygous horses look like champagnes, and horses with one copy paired with cream look like cremellos or perlinos

pintaloosa: combination of appaloosa patterns and any of the pinto patterns

phenotype: the appearance of the horse, which may not indicate the genetic information (genotype)

pinky syndrome: see Depigmentation

Polish Draft Horse: Zimnokrwisty

points: typically the lower legs, mane and tail

R

rabicano: form of white ticking with flank roaning and a coon tail, but that does not produce white face or leg markings

reverse dapples: a pattern of round spots that are darker than the body color, most often seen in roans and champagnes

reversed markings: Colored markings on the legs or the face that overlap white markings

S

sabino: generic term for the group of white patterns associated with white on the face, legs and belly, often with ragged or lacey edges and roaning

Sabino1: incomplete dominant, with one copy producing the bragada or sabino roan phenotype and two copies producing a white phenotype; currently the only sabino phenotype to use the term as part of its formal name

sabino roan: form of sabino that is heavily roaned and ticked, with indistinct white and colored areas

salpicada: form of white ticking common in Mangalargas, slightly different from rabicano in its placement

sclera: outer ring of the eye, usually mentioned when white

self-colored: having the same color on the body and points

silver: dilutes black pigment to chocolate or taupe, but leaves red pigment unchanged

silver smoky: black horse with both the cream and the silver dilution, usually milk chocolate in color

smoky black: black horse with the cream dilution, not always visibly different from black, but sometimes faded in color

snowcap: horse with two copies of the *Leopard Complex* gene and the blanket pattern, giving a white blanket without spots

sooty: black hairs interspersed in the coat, often forming dapples but sometimes just darkening the coat or points

somatic mutations: in colors, unusual colors that are not inherited from the parents, nor given to the offspring; one-of-a-kind events

splashed white: a group of white patterns associated with blue eyes and extensive white on the face

T

tobiano: white patterning that concentrates on the legs and topline, giving the impression of a white horse with round, dark patches

tostado: chestnut horses with darker red points

true roan: see Dark-headed roan

W

white spotting: group of pinto patterns with a wide range of expression, from entirely white to patchy sabino pinto; also called dominant white

whole-colored: a horse with no white markings of any kind

wild bay: a form of bay where the legs are not fully black

Z

zebra stripes: the dark horizontal stripes on the legs of some dun horses



Notes about horses pictured in this guide

The photos in this book were chosen to illustrate some of the variations that might not be familiar to readers. Additional information about the color, including the breed when known, are given below. Photos were taken by the author unless otherwise noted.

Cover: HARLEY, Sugarbush Draft Horse, black with a spotted blanket; Inset: Part-Arabian, fleabitten grey.

Inside cover: Haflinger cross, sooty bay with a “puzzle coat” - where the hair grows in different directions in random patches.

1. What makes this Fjord unusual is the absence of the mealy pattern, which is noticeable around his muzzle.
2. Bays with flaxen manes are relatively common in the Swedish Ardennes. *Photo by Mateusz Kaca.*
3. These are the type of flashy white markings often seen on chestnuts. (Quarter Horse)
4. This horse has the white spotting mutation associated with the Airdrie Apache line (W22). (Thoroughbred)
5. This is the phenotype that is meant by the term “brown” in the charts. (Quarter Horse)
6. All-over BendOr spotting like this is strongly linked to palomino coloring and is likely a form of sootiness. (Miniature Horse)
7. This pattern is the homozygous form of the pattern produced by the SW1 gene. Horses with just one copy of the SW1 gene usually have ordinary or slightly flashy markings. (Miniature Horse) *Photo by Joanne Abramson.*
8. Chestnut tostados have manes and tails that are darker than their body color. (Quarter Horse)
9. This is different from wild bay because the points are not necessarily minimized, but the backs and insides of the cannons are silver or pale flaxen. This can occur even on very dark sooty bays and is more common in pony and draft breeds. (Welsh Mountain Pony)
10. The points on the legs of a wild bay are minimized to the fetlocks while the body color is clear. (Grade horse)
11. This type of roan crops out from chestnut parents. Unlike true roan the head is also roaned, and unlike sabino roan most have minimally marked legs and a modest blaze. This one has more white on the lower face than is typical. (Paint Horse)
12. This is the classic rabicano pattern. Many forms of the sabino mimic rabicano traits (coon tails, roan flanks). (Quarter Horse)
13. This is the soft-edged form of sabino roan. Compare this to the higher contrast sabino roan phenotype seen in #4 and #18. This phenotype arises spontaneously more often than the high-contrast type. (Racking Horse)
14. This is very similar to the Brazilian pattern salpicada, where the white hairs are more diffused (not brindled) and do not radiate from the fold of the stifle. “Cut outs”—patches without roaning—like the one on the stifle are common. (Paint Horse)
15. When horses like this one are born from horses that have flashy white markings (#3), they invariably have a new mutation for white spotting. Most bragada sabinos do not carry a pattern that can produce this much white. (Paint Horse)
16. This is a dark bay or brown roan with a frosty mane. He is atypical in that even in summer coat, the roaning on his body is unevenly distributed. (Quarter Horse)
17. This is the champagne dilution on a genetically black horse. (Miniature Horse)
18. This horse is heterozygous for *Sabino1*. Heterozygous *Sabino1* horses can have a bragada, patchy sabino or sabino roan phenotype, with the soft-edged sabino roan (#13) the most common. (Tennessee Walking Horse)
19. This horse is homozygous for *Sabino1*. He retains more residual color than the average homozygous *Sabino1* horse, but note the spots are primarily on his skin and not in his coat. (Tennessee Walking Horse)
20. This is the type of varnish roan sometimes mistaken for ordinary roan, which is how some have remained hidden in studbooks.
21. This is a true blanket. Note the fully colored legs. (Appaloosa) *Photo by Kim Smith.*
22. This tobiano mare is pictured with her non-tobiano foal to highlight that she is not homozygous and the spotting on her legs are not cat tracks, but belton spots. Large, irregular spots along the entire leg are more typical of belton spotting. (Paint Horse)
23. This is the phenotype common to the other forms of splashed white, but not the classic pattern. Newly arisen splashed whites often look like this, and produce foals with an almost identical phenotype. (Paint Horse)
24. This all-over spotting is referred to as “nose-to-toes” leopard. (Sugarbush Draft Horse) *Photo by Kim Smith.*
25. This is another soft-edged sabino roan. Remove the flashy markings, and this is what spontaneous roan looks like. (Paint Horse)
26. This is the typical phenotype for bragada sabino: blaze, stockings and a belly spot. (Paint Horse)
27. Contrary to popular wisdom, many tobianos do have white face markings - even when the non-tobianos in their breed do not. (Miniature Horse) *Photo by Kim Smith.*
28. This is a very typical varnish roan. This horse would have been born bay and developed this coloring as he matured.
29. Belton spotting on frame overos often concentrates on the face, and the spots there often have a pronounced halo. (Paint Horse)
30. The awkward turn of this Paint shows how the white on the belly of a bragada sabino is not always visible from a profile shot.
31. Some appaloosas have black pigment that is shifted to a warm pewter color. Not all black appaloosas have this, but it is not rare.
32. This is not a near-leopard, but a specific kind of blanket where there is patterning on the hindquarters and the lower legs. Note that he has white markings on his hind legs, and his pattern on his unmarked front legs. (Appaloosa) *Photo by Kim Smith.*
33. Fleabitten grey is rare in predominately grey breeds. Intense fleabiting like this is rare outside of Arabians. *Photo by Kim Smith.*
34. True blankets like this are less common in Old World breeds than leopard. (Appaloosa) *Photo by Kim Smith.*
35. This Appaloosa has the same pattern as #32—patterning on hindquarters and legs—but the edges are influenced by sabino. Liket he previous horse, he has true markings in his hind legs, and the pattern on his front legs. *Photo by Kim Smith.*
36. This horse has the white spotting mutation associated with the Puchilingui line (W5). (Thoroughbred)
37. Areas of clean white, without ticking or spots, in the places shown on this horse are a good sign frame overo is present.
38. This is the type of liver chestnut that is often mistaken for black silver. The red undertones are the best clue this is really chestnut.
39. Note that the legs on this bay silver are chocolate, and not black.
40. This is different type of appaloosa pattern than #32 and #35, one that involves the hindquarters but not the legs. *Photo by Kim Smith.*
41. This Arabian mare has a blood-mark on her hip and larger patches on her other side. *Photo by Maria Hjerpe.*

Back cover: Two Paint Horses, (left to right) bay roan frame overo and a chestnut tobiano



The goal when exhibiting equine collectibles is to give the illusion that the horse—in all his varied forms and performing his different activities—has been recreated in miniature. For that reason, the primary criteria for evaluation is realism.

Guides for Judges and Exhibitors explores how model horses can better reflect the reality of the horse world, while giving participants the necessary information to make informed choices about entries and placings.

An almost complete list of
Breeds & Colors