BREEDING

Pedigree Analysis

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Speed Gene Research

This past July genetics researchers with Equinome Limited unveiled new genetic markers to enhance their earlier work revealing the so-called "Speed Gene." These markers tie earlier maturity and greater height and muscle mass with horses carrying the C:C allele combination of the myostatin gene (MSTN), a pairing that also predicts a horse's short-distance limitations. Horses with the C:T variant cover the middle ground, in maturity, size, and distance range. Those with the T:T coding tend to be later-maturing, smaller, and with more ability over a distance of ground.

These findings concur with horsemen's observations that big, muscular individuals tend to become precocious sprinters, and that smaller, lighter types often need more time to mature and excel in staying tests. We can still be misled, though, as many were in the presence of the young Secretariat, who was described as being built like a Quarter Horse and wasn't expected to go the classic distance. Secretariat proved them wrong by winning not only the Triple Crown, but also the 12-furlong Man o' War Stakes (gr. IT) and the 13-furlong Canadian International Championship Stakes (gr. IIT).

Secretariat's physique was the sprint type, but his ability as a stride machine enabled him to get better as the distances grew longer. He was an unusual blend of speed and stamina, and, with a mixed bag of offspring—from the brilliant Terlingua to Preakness and Belmont stakes (both gr. I) winner Risen Star—he probably carried the C:T combination.

Last year Hill et al. released results of genetic testing on famous Thoroughbreds from skeletal remains available in museum collections. Some of the individuals tested include the great Eclipse (foaled 1764), Stockwell (1849), Hermit (1864), Bend Or (1877), St. Simon (1881), Ormonde (1883), Persimmon (1893), Polymelus (1902), and Hyperion (1930). All of these great runners, classic winners and/or stallions tested the same: T:T.

The researchers' conclusion was that the T-allele is the ancestral type of the MSTN gene and that the C-allele, the one generating short speed, was a mutation introduced early in the breed, probably from a "British-native mare." The C-allele is now a dominating presence in the breed and is represented through, among others, the descendants of Nearctic (1954), sire of Northern Dancer (1961).

What this research didn't address was how Nearctic inherited the C-allele. One likely route is through Nearctic's sire, the great Nearco, whose breeder, Federico Tesio, felt was not a true stayer but succeeded at distances on his class and heart. Nearco also gave us Nasrullah and Royal Charger. Nearco's sire was the good 10-furlong horse Pharos, whose sire Phalaris, a great sprinter, became one of the most influential stallions of the early 20th century. Besides Pharos, his sons included Sickle, from whom Native Dancer and Mr. Prospector descended.

Phalaris was by Polymelus, determined to be T:T, so Phalaris' speed, and his C-allele, must have come through his dam Bromus. She was inbred 2x3 to Springfield, another great sprinter and sire. Springfield was by the staying St. Albans, so his sizzle must have come through his dam, Viridis. Her speed probably derived, at least in part, through her sire Marsyas, whose big win was the July Stakes, a sprint. Marsyas was by Orlando, who, although a Derby winner by Touchstone, was noted for great speed, attributed to his dam Vulture, "the speediest animal of her day." Orlando's line gave Americans the brilliant Domino.

PHOTO TAKEN FROM *BRITISH RACEHORSE*

Nearco

Vulture was by Langar out of Kite, by Bustard, which is interesting, since Langar's sire Selim was a full brother to Bustard's sire Castrel; so Vulture was inbred to their parents, Buzzard and the famous Alexander Mare. Selim, winner of the prestigious Craven Stakes at a mile, was a successful sire despite its being said that "it was almost hopeless to expect the blood of Selim to stay without a very stout cross indeed."

It's hard to follow the line of speed from here, but we're left with a few clues. Buzzard won the Craven twice and his sire was Woodpecker, by Herod, out of Miss Ramsden, by Cade. His dam was Misfortune, by Dux out of Curiosity, by Snap. Early breeders were advised to seek "Snap for speed; Matchem for truth and daylight," suggesting Snap may have been a carrier of the C-allele. Snap was by Snip out of a mare by Fox.

After reading the British-native mare theory, my thoughts immediately went to a horse known as "Old Janus," imported about 1756 to Colonial Virginia to start a dynasty of horses known as "Quarter Milers" or "Quarter Horses." Old Janus was said to be sired by Janus (by the Godolphin Arabian) out of a mare by Fox.

Since he appears in the dams of Snap and Old Janus, as well as Tartar (the sire of Herod), it's possible that Fox, foaled in 1714, by Clumsey out of Bay Peg, was an early carrier of the C-allele that passed on its gift of speed. How Fox inherited it is a story for another day. BH

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