



## How Do Horses Find Their Way Home?

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## How Do Horses Find Their Way Home?

It seems to be generally thought that horses, being cursorial, intelligent, and with good vision, find their way about largely through the use of their eyes and their memory. While there is no doubt that a horse uses its sense of smell in selection of food and social interactions, it does not seem to be generally appreciated that this sense of smell may also be very functional in directional orientation. I made the following observations on an old female pack horse in November 1977, in Corcovado National Park (Osa Peninsula, Puntarenas Province, Costa Rica).

The ocean beach at the park is approximately 18 km in length. At the southern end is the settlement of La Sirena, where the horses normally live. At the north end is La Llorona where we had been visiting. Returning to the south, one pack horse with a leader started out an hour in advance of several of us with the second horse. Upon initiation of the trip, the second loaded horse was clearly interested in walking south along the beach and did so freely, well in advance of us, without prompting or other hurrying. After it had passed about a kilometer of beach that had been recently washed free of all tracks by an outgoing tide, the horse put its nose down to about 1 cm from the sand and walked in a long-angled line from the upper wave edge to the high tide line of the beach. The strip crossed was about 75 m in width. Upon encountering the upper tide line and the beginning of the vegetation, the horse angled back toward the ocean at a very shallow angle to the long axis of the beach. Her nose was continuously held close to the ground, and I assumed that the horse was thirsty, weakened, or otherwise distressed. Upon reaching the water, it again angled back toward the high tide line. By this time we had passed perhaps another kilometer of beach. Here the tide had retreated early enough that the tracks of the previous horse remained. As the horse angled across the strip for the third time, it encountered the other horse's tracks about halfway across the beach. Immediately, it deflected from the straight line path it was following and went directly down the tracks of the other horse. It kept its nose to the ground for another several hundred meters and then raised its nose to a height of about 50 cm off the ground and continued to plod along at its normal pace. During this time it continued directly along the tracks of the other horse. About 2 km down the beach, again the waves had washed away the tracks of the previous horse, and our horse continued on down the beach in a straight line. After about 300 m, the horse again dropped its nose to the ground and began to angle across the beach. It repeated this process twice, and, on the third pass across the beach, nearly a kilometer further along, it encountered the previous pack horse's tracks again and immediately turned to follow them. Again its nose stayed down at ground level for another 100 m after encountering these tracks, and from that point on it continued to follow exactly the footprints of the other horse. The trail of the other horse was followed about 6 km to La Sirena.

In short, the horse gave every appearance of using its sense of smell to locate the tracks of the other horse and then to follow them for a short distance, despite the fact that the visual acuity of a horse is quite great enough to locate and follow tracks on a beach. After this, it appeared to be using visual orientation to keep itself on the tracks of the other horse, although the odor of the first horse would be quite distinctive from that of the newly washed sand. Such a feat might not be so easy to perform in vegetation or other habitats if a horse had only passed once. Nevertheless, this dog-like behavior in the horse was very conspicuous in its apparent function and performance.

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