

When photojournalists wanted to capitalize on the story and get a picture of the famous monkey sitting in his space seat, however, Ham fought tenaciously not to be forced back into the position that had caused him so much discomfort. Once was enough.

The fact that Ham was alive and well despite the unintentionally fast descent calmed the Mercury Program supervisors and astronauts, and Alan Shepard repeated Ham's trip in May 1961, becoming the first American astronaut to reach space.

The last trip by a monkey into space (excluding the famous trip made by Curious George) took place in November 1961. A clever, five-year-old chimpanzee named Enos was chosen to be the first American animal

to orbit earth. After 1,250 hours of training and preparations, Enos was strapped into his seat and launched into orbit, a trip that took almost an hour and a half. Although the plan called for three orbits, the spacecraft had to be recalled after completing only two because it had not reached the correct altitude required to remain aloft longer.

Unfortunately for Enos, his capsule malfunctioned and every time he performed his tasks as required he was "rewarded" with a shock and "punished" with a piece of banana. Despite the uncomfortable situation, Enos continued to consistently make correct choices, and after a total of three hours of flight, he splashed down into the embracing waters of the Atlantic Ocean.

After Enos' return, Astronaut John Glenn followed three months later with a perfect, three-orbit flight that captured headlines and the imagination of the American people, leading directly to the ultimate space conquest with the eventual landing of man on the moon. Even more so, this started America on the path toward winning the space race, which in turn had a large impact on maintaining an American appearance of strength in the Cold War with Russia.

Nevertheless, whereas Glenn became a national hero Enos was almost entirely forgotten... except for one person, that is. When Glenn met with First Lady Jacqueline Kennedy after his historic flight, she asked him, "Where's the monkey?" ■



Enos after his return from space.

The Horse Who Could Do Math...

You read that right: a horse that could do math... and even spell a word correctly by tapping out the letters! Discover the incredible story of Hans, "the clever horse," who awed crowds with his uncanny abilities.

A horse that can add and subtract?! Hans the horse spent many years traveling throughout Germany with his master and responding correctly to mathematical questions posed to him by his owner.

The horse's owner was a German math teacher named Wilhelm von Osten. He spent years trying to advance his claim that

animals are far more intelligent than humans give them credit for, and he was prepared to go to extremes to prove his claim to the many skeptics that scoffed at him.

Osten tried propagating various controversial theories in the 1880s such as phrenology, the belief that bumps on



a person's skull reflect his character and intelligence. This idea was long discredited, though, and Osten was naturally ridiculed for professing a belief in it. When it came to the belief in animal intelligence, however, Osten finally succeeded in achieving international fame through presenting solid proof of his theory.

To prove that animals were smarter than people believed, Osten decided to train a cat, a bear and a horse in arithmetic. The cat quickly proved to be a failure; it was more interested in the mouse scampering beneath the floorboards than in the math lessons. The bear was unaccommodating and downright ornery from the beginning. An Arabian horse named Hans, though, began demonstrating tremendous progress after just a short while under Osten's tutelage.

Hans quickly learned to tap with his hooves as many times as the number written for him on a board. When von Osten wrote the number three on the board, Hans would go tap-tap-tap. For any digit he was shown, he would tap the correct number of times.

Seeing that he had hit upon a clever student, Osten went a step further. He started teaching Hans simple arithmetic, like adding and subtracting single digits, and then advanced to more complex equations. Hans kept up with the classes and was soon responding correctly to difficult mathematical questions. Here was a clever horse indeed!

Osten soon realized that he was sitting on a gold mine. In 1891, he began parading his "clever horse" around Germany, which was fast becoming the cultural center of the civilized world. News of the clever horse that could do calculations spread like wildfire, and in no time people were streaming en masse to witness the spectacle.

"If the first day of the month is Wednesday, what day of the month is the following Monday?" Osten would ask, and the clever Hans would respond with six taps of his hoof. Osten went on to ask the horse numerous other such riddles, and each time it would tap back the right answer.

Then Osten added a new trick to Hans' repertoire. The horse could spell a word correctly by tapping out the letters. One tap of the hoof indicated the letter "a," two taps the letter "b," and so on. Hans would spell out the name of his owner and other people he knew, as well as answering other simple questions.

It's true that Hans was known to make an occasional mistake from time to time. After all, he was only human... um, equestrian. His answers were correct an astounding 89% of the time, however, more than good enough to convince the greatest skeptics. Hans' mathematical intelligence was rated equal to that of a typical 14 year old.

Hans Becomes Famous

News of the clever horse continued to spread beyond the German border. Hans became especially famous after the *New York Times* gave him front-page coverage on

September 4, 1904. "Berlin's Wonderful Horse," the title read, "He can do almost everything but talk."

The article began, "It must be argued that the facts in this article do not come from fantasies but are based on observations, and can be confirmed by Dr. Studt, Prussian Education Minister; by the renowned zoologist Professor Meobius, Director of the Prussian Museum of Natural History and through other prestigious scientific and military authorities."

Here is how the *Times* described the wonder horse: "Hans, the wondrous horse, is nine years old and belongs to a Mr. von Osten, a retired school teacher. The horse was never used for riding. For over four years, von Osten taught the creature to calculate just as he would have taught a child."

The article goes on to reveal how von Osten taught the horse: "A few years ago, the entire area of North Berlin where Hans lives was astounded to witness each day at a certain time how Mr. von Osten stands outside his yard with Hans, in front of a board and adding machine. Osten paid no notice to the looks of contempt sent his way by neighbors and passersby. He taught the horse to answer with a number by tapping with its right hoof. Each time Hans tapped his right foot correctly, he was rewarded with a bit of sugar."

The *Times* goes on to describe in amazement how the horse could identify not only numbers but also gold, silver and copper; colors; various coins and even musical tones by tapping its feet. Hans knew the time of day and even how many people were standing in line to see him!

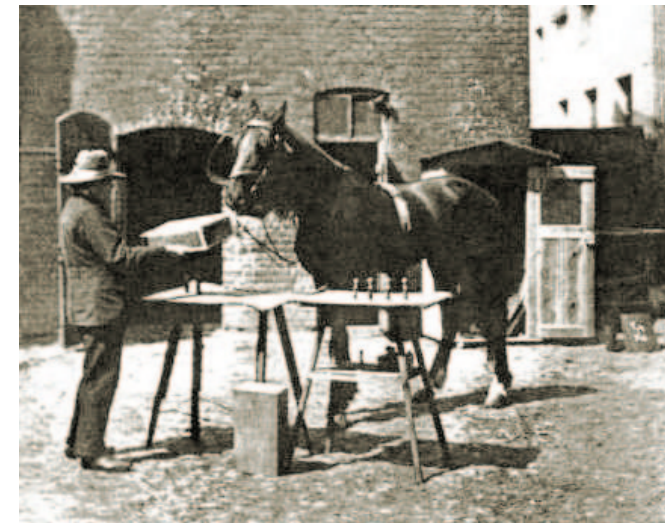
The *Times* quoted von Osten as saying that this was actually the second horse he had so trained, and any ordinary horse could be taught to do arithmetic. The article concludes by stating that as it went to press, the paper was informed that Hans had been brought before the Kaiser who, having heard of the clever horse, had expressed interest in seeing him and



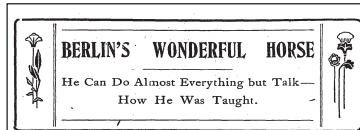
Wilhelm von Osten treated his equestrian student exactly as he did his human ones.



Crowds gather for a demonstration of Hans' remarkable abilities.

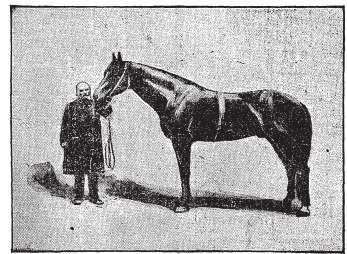


A treat for passing his test.



Special Correspondence THE NEW YORK TIMES.
 BERLIN, Aug. 25.—In an exhibition of ways part of the German capital a unique horse, which has attracted the world of the Fatherland. It should be said to the credit of the fact in this article are not drawn from the imagination, but are based upon true observations and can be verified by Dr. Bloch, Prussian Minister of Education by the famous zoologist, Prof. Meobius, director of the Prussian Museum of Natural History, and by other eminent scientific and military authorities. I had the opportunity to see a performance of the animal which was given in the presence of the young Duke of Saxe-Coburg-Gotha.

Hans, the wonderful stallion, is nine years old and is the property of a Herr von Osten, a retired school teacher. The horse has never been used for riding or driving, but is trained to perform various tasks which he would give to a child. The first question proposed to him is the name of the town in which he lives. He answers by tapping his hooves on the board in front of him. He is then asked to name the number of the day standing in the court before a blackboard and adding machine. Herr von Osten, undisturbed by ridicule, (for by his method he had gained the reputation of being an old crank,) instructed the stallion by showing him the balls on the machine, and instructing him to indicate a number by stamping down the right hoof. At the same time, when he has done so, the name of the day standing in the court before him is written on the board. The horse then taps correctly by the name of the day, and is rewarded by a morsel of sugar.



HANS AND HIS OWNER, HERR VON OSTEN.

The New York Times
 Published September 4, 1904
 Copyright © The New York Times

three times when asked the number. He is also able to distinguish coins according to size. When asked to give the value of a one-mark piece touched by his teacher, he moves his foot once, for a two-mark piece twice, etc.

Hans is an expert in numbers, even being able to figure fractions. He answers correctly the number of 'a' in 'a', in 'aa', in 'aaa', etc. When asked how many '2's there are in '7' he stamps down his foot twice and for the fraction ones. Then, when 5 and 4 are written under each other on the blackboard and he is asked to add the sum, he answers correctly.

Hans is also capable of distinguishing persons. He told the number of girls and officers standing in a line. A remarkable thing happened yesterday. An officer was pointed out, and Hans was told, "That is Count Doehna." Half an hour later the same man was pointed out to him, and when asked for his name the horse asked out the letters 'D', 'o', 'e', 'h', 'n', 'a', 'e'. Herr von Osten, however, having the name Doehner in mind, wanted to help him by offering "Do." Uninfluenced, however, Hans spelled out correctly "Doehna." In the same manner to-day Hans was introduced to the Prince of

Sachsen-Coburg-Gotha, and also gave his name correctly.

The versatility of Hans in other directions is astounding. He can distinguish between straw and felt hats, between canvas and umbrellas. He knows the different colors. One bobolink several colored rings fastened on a string. A quality officer places himself before the horse and Hans is asked to state the color of his cap. The horse answers by stamping his foot down three times, the color of the third tap, which, like the cap, is red.

Hans has also been taught to distinguish tones. The various tones of the musical scale are numbered, and he recognizes their position by his usual method. Hans can tell the time on a watch and can indicate the exact hour. At the test yesterday he recognized persons from photographs. Herr von Osten placed persons in a row who had given him their photographs; then put the picture before the horse and asked him to indicate the position of the person in the line. Again Hans recognized the gentleman in civilian clothes who had been before him in uniform. He knows the names of the months and indicates the day of the week by putting down his foot, five days once, Monday twice, etc.

Prof. Meobius, the eminent zoologist, has said to me about Hans:

"He possesses the ability to see sharply, to distinguish mental impressions from each other, to retain them in his memory, and to utter them by his hoof language. Of course, not by himself, but he has learned all this not by methodical instruction, but by human intelligence, who has developed the highest intellectual sense of the species. For wild horses, not trained in the same manner, utilize their physical and psychic faculties as does Hans, to satisfy their desire for food."

"Herr von Osten has succeeded in training Hans by exhibiting in a certain way for delicacy. This horse is aroused by questions and answers signs, and by which the stallion acts, in order to satisfy his curiosity, for as long as he has his foot down he waits for the delicacy in the hand of the master. I doubt whether the horse really takes pleasure in his work, and which satisfy his wants of mental impressions which he receives from the surroundings and which satisfy his wants of food."

Hans is the second horse Herr von Osten has trained. He claims that any horse of fair intelligence can be so taught. Herr von Osten's training is done merely from a scientific standpoint, and he told me that he greatly respected the former article in the paper of the Kaiser, who has heard of Hans and is very interested in seeing the animal. EDWARD T. HYDE.