

man being all over the yard, while I stood to one side and quoted Byron:

"Untired, untamed, and worse than wild,
All furious as a favored child
Balked of its wish; or fiercer still—
A woman piqued—who has her will."

After getting out of the yard, the performance was continued all over a ten-acre field, but finally we managed to steer her through the road gate. On the way home she led us through every puddle and ditch she could find. I was beginning to sympathize with her struggles, when she suddenly stopped and began to eat a tuft of frozen grass. This gave us a chance to take a little rest. Then, with a final effort, we got her home and into the stall that was waiting for her. Who says that this country life lacks excitement?

HORSES.

The farm is the place for the young horses and the brood mares. Nothing but a mature horse should be sent to the city pavements, and the mares should be retained for breeding purposes.

The horse market the past autumn has proven conclusively that the sound horse is the horse that finds readiest sale. Almost invariably he makes more money for buyer and seller, and a slight market depression does not injure his selling value nearly so quickly as it does that of the inferior, cheaper class of blemished animals.

What care is being given the stallion during this his off season? Is he forced to remain in a dark, dirty stall in some secluded corner of the stable, without any extra care or exercise? If he is to do his best work at the stud during the coming season, he must be kept in good condition, and his vigor must be maintained by regular exercise in the open air. Sure foal-getters seldom spend the winter entirely free from exercise.

With hay selling at prices hovering around twenty dollars a ton, and even higher, twenty-four dollars being quoted on Toronto market recently, and oats and all other kinds of feed at famine prices, as they are this winter, city horse-buyers are not so keen to buy as they sometimes are. Nobody is buying horses, unless they are absolutely needed for immediate work. The actual cost of keeping a good horse is no greater than that required to keep a "plug," and, besides, there is always sale for a good horse, whereas there is a greater risk with the unsound worker class of animal. From a purely business viewpoint, the sound animal has a decided preference, and there is also more satisfaction in owning him.

At present prices, a portion of corn might be profitably added to the concentrate ration of the horses to take the place of some of the oats. Corn is widely used as a horse feed in the corn belt. Henry says that, while corn does not have all of the superlative qualities of oats, nevertheless, because of lower cost and higher feeding value, it will always be extensively used in America wherever large numbers of horses must be economically maintained. When feed is scarce and high-priced, economy is studied more carefully by the feeder than when fodder is more plentiful. It must be remembered, however, in substituting corn for oats, that the change must be made gradually, or indigestion may result.

Horse Sense.

We reproduce below a recent article, contributed to the Independent, one of the sanest American weeklies, by John Burroughs, the distinguished naturalist and nature-lover. The subject of the article has aroused world-wide comment. Mr. Burroughs' elucidation of it is submitted not with a view to depreciating the intelligence of the horse, but merely in the interest of science and truth:

We have heard so much about animal mentality of late years, and the tendency of the popular mind to credit the dumb friends with more than their share of intelligence is so strong that one reads with peculiar interest the account of the famous German horse, Clever Hans, and the story of the puncture of the bubble of his supposed wonderful mental gifts, as told in a recent volume by Professor Pfungst, of the Psychological Institute of the University of Berlin. Here was a horse that had set all Germany agog by its supposed astonishing feats of intelligence, and stirred up bitter strife and debate among many prominent scientific men, baffling experts and learned commissions sent to investigate him, and convincing even his trainer and owner of his extraordinary mental endowments. People who came to scoff—Mr. Scil-

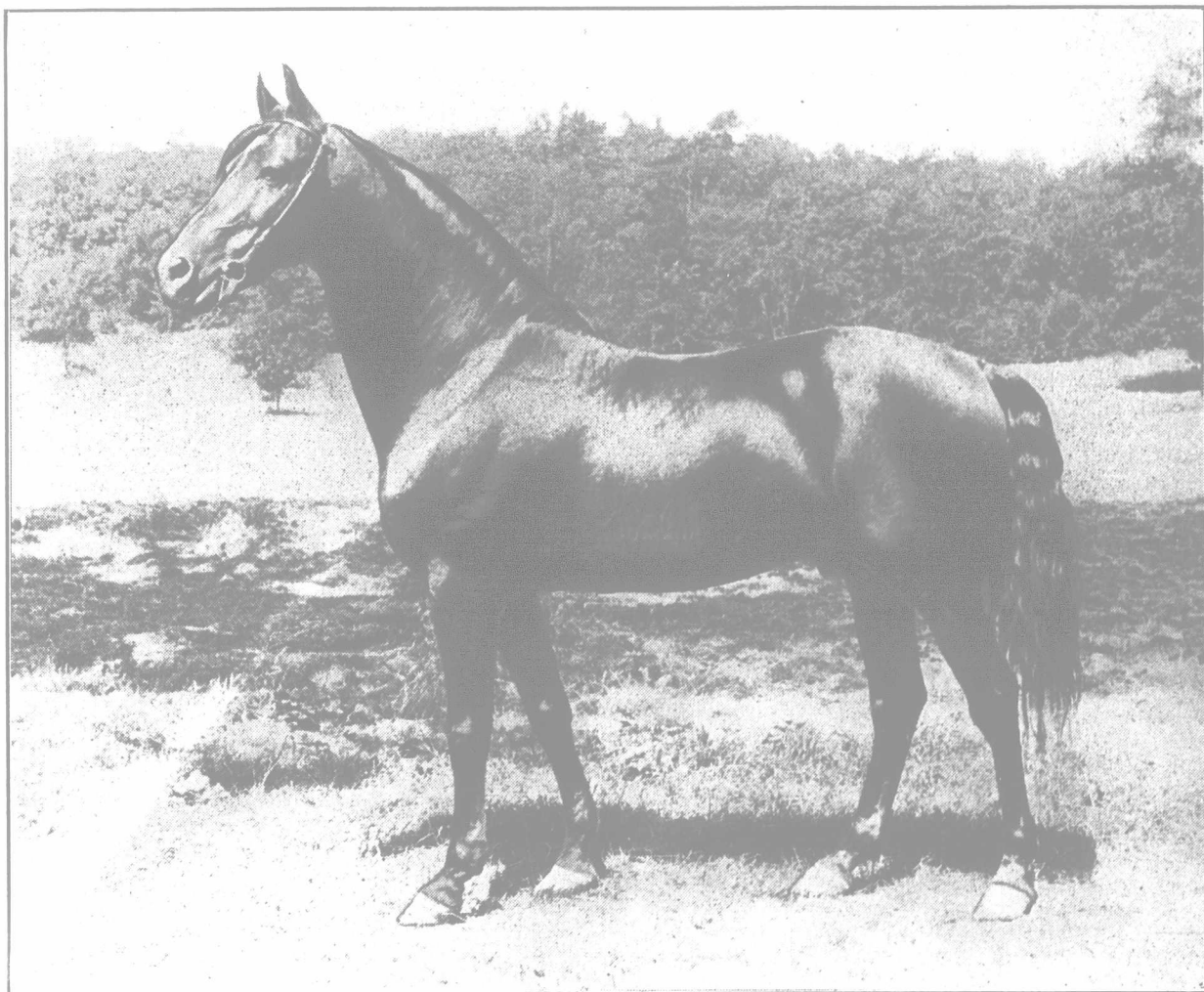
lings, the noted African traveller and sportsman, and Professor Schweinfurth, and the zoologist, K. Mobius—remained to wonder. The horse could apparently count, add, subtract, do problems in fractions, tap off the right answer, for instance, to a question like this: How much is two-fifths plus one-half? He could change common fractions into decimals, and vice versa. He could apparently distinguish tones in music, pick out colors, spell, read, name dates and days, understand French and German, and a thousand other things impossible for a horse to understand, deceiving not only chance visitors and learned commissions, but apparently fooling, as I have said, his trainer, an old German teacher of mathematics. In fact, experienced educators declared that Hans was at about the stage of development of a child of thirteen or fourteen years.

It seems to me that any careful student of animal life would have unhesitatingly staked his life that the horse had no more conception of arithmetical problems than a child has of the differential calculus, but apparently some very astute men were convinced that he had. Not until Professor Pfungst took the case in hand was the mystery cleared up. Through a long list of most ingenious experiments, he discovered that the horse could not, unaided, do one of the many feats he was supposed to do; that he had no more knowledge of numbers than a block has, no reasoning or thinking power whatever, and that a carrot, a piece of bread and a lump of sugar, which always awaited him at the end of his stunts were the mainspring of his action. Or, as Professor Pfungst says: "Instead of the much desired intellectual feats on the part of the horse, there was merely a motor reaction to a purely sensory stimulus."

But while the claims for the horse's mental powers were dispelled, other powers, powers of observation, or perceptual powers, were disclosed—powers of their kind far exceeding those of the ordinary man. As soon as Professor Pfungst covered the eyes of the horse, the game was up, and Hans was unhappy. When he could not see his interlocutor his power was gone. And then it gradually came out that Hans had been able to tap out the correct answers to questions put to him by reading certain delicate involuntary movements in the head and body of his questioners. When the right number had been tapped, or the right solution reached, his questioners, one and all, invariably indicated it by an upward movement of the head and body, movements so slight as to escape their own notice and the notice of the spectators, but yet sufficient to give to the marvellous eye of the horse his cue. When the horse could not see his questioner he could not give the right answer; and if he could see his questioner he could answer a mental question as well as a spoken one. "In fact," says Professor Pfungst, "the responses of the horse were quite as correct when I did not even whisper the ques-

tion inwardly." When asked to count or to read, the horse never looked at the persons or the objects he was to count, or at the words which he was to read, yet he would give the proper response if he could see the questioner. His ears did not serve him at all; the responses were dependent entirely upon sight. "All speech was superfluous, and, except in so far as the tone of voice in which it was spoken was soothing or reprimanding, it was quite unintelligible to the horse." His feats would probably come under what was classed as "mind reading," but Professor Pfungst clearly demonstrated that they were due to muscle-reading. The mind of the horse seemed to mirror that of his interlocutor; when the latter was confused or uncertain, the responses of the horse reflected that fact; he failed when or where his questioner failed. When the questioner knew the right answer, Hans's responses were correct nine times out of ten; when the answer was unknown to the questioner, the horse's responses were incorrect nine times out of ten. If the questioner tried to mislead the horse by thinking the wrong answer—as, for instance, that two and two make five—he never succeeded, because he could not banish from his own consciousness that the correct answer was four; consequently, when the horse had tapped four times with his foot, the involuntary tension and almost imperceptible forward movement which the questioner maintained while awaiting the responses from the horse gave way, and the very slight elevation of head and body which followed his own relaxation in attention gave the horse the cue to stop tapping.

Not until Professor Pfungst discovered these minimal involuntary movements in himself while questioning the horse, and then discerned them in others, did he arrive at the solution of the horse's supposed mental ability; then his numerous and elaborate tests and counter-tests were made until the entire matter was cleared up, and resolved itself into finding that whatever the stunt proposed to the horse was, he began slowly tapping, closely watching his questioner the while, and he kept on tapping so long as the questioner's head and body remained bent forward in expectant attention, and ceased when, the correct number of taps being reached, the questioner lifted, though ever so slightly, his head and body. The painstaking professor then put himself in the place of the horse, and was put through similar tests, and found, after some practice, that he could answer first spoken, then unspoken questions from others, by closely observing their involuntary movements while awaiting his responses. This was, of course, done without letting his questioners know his purpose. Only after many trials was he able to answer mental or unspoken questions as the horse did, guided always by the slight, unconscious movements of the questioner. And he found that he failed under the same conditions that Hans failed, and for the same rea-



General Gates (666).

Foaled 1894, at head of stud, Morgan Horse Farm, Middlebury, Vt.