

once remarked "To be intelligible is to be found out."

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Many people will, perhaps, agree with Socrates that speculative science of this kind is valueless, but to do so would be to make a grave mistake. The whole fabric of applied science is based on theories, such as Clerk-Maxwell's theory of light. They may be no more than splendid guesses, but if they satisfy all the important aspects of the case under investigation they make possible many practical things. Take the case of electricity. Most of us are familiar with its use in light, and know enough to turn off the electric light instead of bursting a lung trying to blow it out, but that is about all we know. I remember hearing a story about Lord Kelvin, the greatest of electrical experts. He was being shown through an electrical plant by a foreman who did not know who his visitor was. The foreman amused the party with Lord Kelvin by explaining the uses of all the machines to the scientist, who listened respectfully. Finally, when they were at the end of their tour of inspection, Lord Kelvin turned to the foreman and asked: "What is electricity?"

"Ah," said the foreman, "None of us know that."

"Quite right," said the scientist, "None of us know that."

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Considering how cocksure a great many people are about what they think they know, it is amusing to recall a few anecdotes about the humility of the greatest scientists. On one occasion Huxley went to a place in the country to see some bones of prehistoric animals that had been unearthed. There was quite a gathering of scientists, and among others there was a young curate who protested against the proceedings. He said that the bones were those of dragons that had been hurled from heaven at the time of the fall, and he thought it was sacrilege to be disturbing them and talking about them.

"I suppose you gave him a great dressing down," said the friend to whom Huxley was telling the story.

"No," said the great man. "I didn't say a word. The curate was the only man among us who felt absolutely sure of what he was talking about."

A few years ago when the talk about food values began, McClure's Magazine asked the most eminent biological chemist in the United States to write an article about the chemistry of digestion. He began his article by saying that he understood that the whole subject of the chemistry was taught in the primary schools, but, as he had never attended a primary school, he did not know anything about it.

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I do not want to leave the impression that because the great scientists, who deal with essential principles and working hypotheses, are so ready to confess their ignorance that the scientific work of the world is of little importance. It is the most important factor in modern progress, but there is a vast difference between speculative science such as had to be considered in dealing with Mr. Way's question, and the practical science with which we have to deal in everyday life. The correctness of Darwin's theory of evolution is still debatable, but what has been learned from it in the way of selection and heredity has been of incalculable value to stock-breeders, grain-growers and producers of all the fruits of the earth. He gave the world a working hypothesis of incalculable value. Lord Kelvin might confess his ignorance of electricity, but his discoveries made it possible for Edison and others to apply electrical energy in many valuable ways. The theories of Clerk-Maxwell and his fellow investigators, though based on the properties of a luminiferous ether whose existence cannot be proven are the foundation of much that is useful in our applied science. But none of these pioneers of science, with their splendid guesses, had any of the cocksureness of some of their insufficiently informed followers. "A little learning is a dangerous thing," said Pope, and Shakespeare said of "man, proud man" that he is "most ignorant of what he's most assured." So-called exact science has accomplished much, but it has not given the absolute explanation of anything. Its facts are simply points where investigation has ceased. Study facts a little, and they soon break up and finally disappear in a mist of technical phrases.

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As for the January thaws, the editor has answered that question. Nevertheless, as usual, I am reminded of a story. When attending the Collegiate Institute we had to take up the question of winds—and I think thaws are said to be due to changes in the wind that bring warm waves. Our science master gave us an elaborate explanation of the action of the winds, the causes of changes and all that. When he got through one

of the pupils put up his hand for permission to ask a question.

"Well," said the teacher.

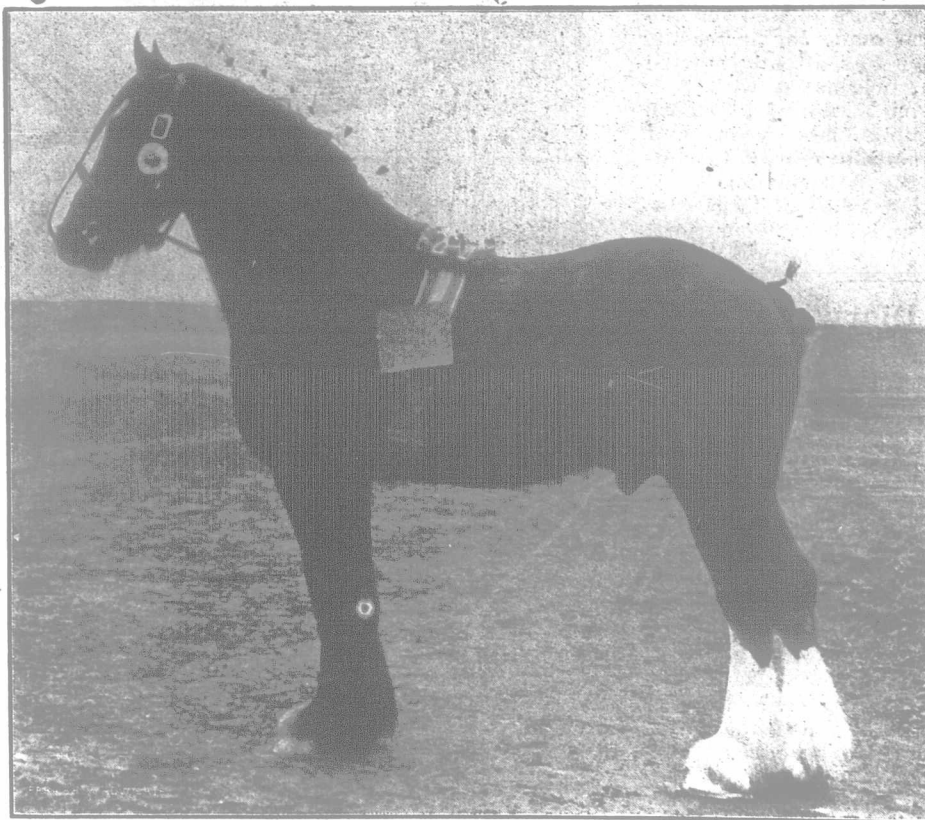
"If you please, sir," said the boy respectfully, "Isn't it written in the Bible that: 'The wind bloweth where it listeth, and thou hearest the sound thereof, but canst not tell whence it cometh and whither it goeth.'"

And right there the class was dismissed.

HORSES.

Care of the Mare and Early Foal.

The early foal will soon be arriving, and experience has shown that while it may not be very difficult to save a good, strong, healthy colt, even though the mare is still on dry feed and the colt is foaled in a stall, such usually requires more care and attention. In the first place, the mare is not in as good condition to properly nourish the foal, nor is the place provided for her so suitable for foaling as would be a nice fresh, green grass plot. All are agreed that of all feeds, dry or green, coarse or concentrated, prepared or raw, nothing is equal to nature's best cure—pasture grass. It is the mare's best tonic, is her best laxative, and the very best feed to stimulate milk production and supply a goodly quantity of this fluid in the best strength to suit the delicate digestive system of the young foal. Then, again, pasturing the mare gives her an unparalleled opportunity to take ample exercise and keep her organs physically fit to undergo the strain of parturition.



Silver Wood.

Clydesdale stallion, winner of the Glasgow Premium, aged class, in February last. Owned by John Pollock, Paper-mill Farm, Langside, Glasgow.

CARING FOR THE MARE.

With the early foal, grass for the dam is impossible, so feeding and exercise must be regulated to as nearly as possible approximate natural grass conditions. Unless precautions are taken in this direction, there is a great danger that the foal may be weakly, and also more danger of difficult parturition. Good care does not mean pampering, but it does signify an abundance of exercise and careful feeding on suitable feed. A pregnant mare should be well fed. She must nourish herself and her developing foetus. As time for foaling approaches, greater care should be exercised. Less exercise is necessary during the last few weeks, as the mare becomes clumsy, but many of the most successful breeding mares do light work up to foaling time.

To take the place of grass, add some bran to the ration. The feed of the horse is rather limited in variety at best. Hay and oats form the ration of the bulk of the horses in this country. If good clover or mixed hay is available, feed on this, and also give a few roots. A small feed of carrots or a fair-sized swede turnip once daily is enough. These precautions taken, all that can then be done is to prepare a suitable place for the mare before, at and after foaling, keeping in mind that the colt must have cleanliness.

A roomy box-stall is the best substitute for the pasture field, and good, bright, clean straw is the best substitute for pasture grass as the first bed of the foal. The stall should be cleaned out

daily before the mare foals, a little lime scattered on the floor and fresh bedding supplied. This precaution may destroy many germs which lurk in the dust of straw or in the crevices of the floor, and which, provided they gain access to the foal, might cause trouble often of a most serious nature.

FOALING PRECAUTIONS.

An attendant should be on hand when the mare shows first symptoms of foaling. If everything is all right, labor is often of exceedingly short duration, but the person in charge should be on the alert, should know the appearance of a normal presentation, and what to do in case of the simpler forms of mal-presentation. Of course, the more complicated forms of the latter require the services of a competent obstetrician. It is taken for granted that the man in charge has at least a reasonable knowledge of the anatomy of the reproductive organs of the mare. If he has not, he is not a capable man to be left in charge of the mare. If there is difficulty in deliverance, prompt action is necessary, but promptness does not mean that the operator should rush pell-mell into the work. Proceed steadily. Ascertain the cause of the trouble; remedy it, and assist gently. Hasty action is dangerous, and is often attended with the loss of the foal. As soon as the colt is foaled, see that the umbilical cord is severed. Very often the afterbirth is expelled soon after the colt, and it is often attached to the foal by this cord. If the mare is strong and upon her feet, she will generally break this with her teeth. Sometimes it breaks as the foal struggles, but often it does not, and the mare is too weak to rise, and so it is necessary that something be done. If possible, it is better for the umbilical cord to be broken naturally, but the knife is sometimes necessary. Every attendant should have a clean, sharp knife, a piece of strong but soft sterile cord and a bottle of antiseptic. The latter may consist of 15 grains of corrosive sublimate to a pint of water, or may be a five per cent. carbolic acid solution. If the umbilical cord is not severed, the soft, disinfected string should be tied tightly around it, about an inch below the abdomen, and the cord severed by means of a scraping motion about an inch below the tie. Do not make a clean cut. Always sever by scraping off. Dress the cord immediately with the antiseptic, and repeat the dressing three or four times daily until it

dries up and is perfectly healed. This precaution should be taken with all colts, but is doubly necessary with the colt which is foaled in the stable, because there is a greater danger of the germ of the dread disease "joint ill" gaining access to the raw surface than when the colt is foaled on pasture and spends most of his time outside. Do not under any circumstances neglect to have the antiseptic ready, and be sure to apply it thoroughly three or four times daily during the time necessary.

As soon as the mare is on her feet, clean the stall out thoroughly, putting in dry bedding. Now assist the colt to nurse, and as soon as this is attended to, give the mare a warm mash, consisting of bran and chopped oats. Avoid all drafts in the stall.

EXPULSION OF THE MECONIUM.

Watch the colt carefully to see that he expels the meconium. If he is weak, some assistance may be necessary. It is always well to keep a close watch until evidence of the colostrum is noticed in his faeces. If the colt makes continued ineffectual efforts to defecate, something should be done. The common practice is to give purgatives, but this should not be done and is to be condemned. The meconium is the result of the action of the bowels during foetal life, is in the form of more or less hard lumps which have passed into the bowels, filling the rectum. The anal sphincter muscle prevents their escape. Medicines given by the mouth have practically no

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