

HORSE SHOEING.

(From the British Workman.)

[The following remarks, from one of the highest veterinary authorities, will, we hope, have the thoughtful perusal of all who have to do with that noble and useful animal, the horse.]

The horse's foot is a most wonderful piece of mechanism, and excites far more surprise and admiration than the feet of all other creatures. So wonderful, indeed, is it, that any one who had not closely studied its structure and functions would scarcely believe the hard, insensible hoof could contain such a multiplicity of beautiful arrangements, all adapted to serve most important purposes, and to render this noble animal so useful to mankind. The bones are constructed and placed with a view to speed, lightness, and strength; ligaments of marvellous tenacity bind them together so firmly that disunion is all but impossible, while they are so ingeniously disposed as not to hinder, in the slightest degree, the remarkably swift and easy movements of the bones upon each other; elastic pads and cartilages are situated in those parts of the foot where they are most required to protect it from jar, and serve to compensate for the absence of the toes which are seen on the feet of all other creatures except the horse species. All these parts are covered by a living membrane, which envelopes them like a sock, and is exquisitely sensitive, in addition to being everywhere covered by fine networks of blood-vessels in the greatest profusion. This membrane endows the foot with the sense of touch, without which the horse could not be so sure-footed, nor run with such astonishing speed, and it also furnishes the blood from which the hoof is formed. The hoof itself, so rough, insensible, and to all appearance scarcely worthy of observation, reveals a world of wonders after we have exhausted those to be found in its interior. It is made of fibres, all growing in one direction—towards the ground, and that direction the most favourable for sustaining strain. These fibres are extremely fine, and are hardest and most resisting on the outer surface; each is a tube, composed of thousands of minute cells, so arranged as to confer strength and durability, while the tubular form of the fibre ensures lightness. Each part of the hoof has its own share of responsibility in protecting the living parts it contains. The wall is the portion we see when the horse is standing firmly on the ground. It grows from the upper part of the foot, the coronary process; and this growth is always going on to counterbalance the wear that is taking place at its lower border. Its outer surface is beautifully dense and smooth in the natural state; and altogether the wall is perfectly adapted to meet the wear that occurs when the horse is running at liberty in an unshod state. This is also the part on which the shoe rests, and through which the farrier drives the nails that attach it.

When the foot is lifted up backwards, we see the sole and the frog. The sole is the part that lies within the wall; it is slightly hollow in a good foot, and is thick, strong, and covered with flakes of loose horn in one which has not been pared by the farrier's knife. The frog is a soft triangular piece of horn in the middle of the sole, towards the heels. It is very elastic, and serves a most important purpose, as it acts as a cushion to prevent concussion, and also hinders the horse from slipping. The sole, frog, and lower border of the wall have all to come in contact with the ground and loose stones; therefore nature has furnished them with an abundance of horn to make them strong enough to bear the horse's weight, withstand wear, and keep the delicate parts inside from injury.

So long as the horse is not compelled to work on hard roads, its hoofs are well suited to all that is required of them; but our civilization demands that we should have paved and macadamized streets, and on these the hoofs would quickly be worn away, especially if the horse had to draw or carry heavy loads; consequently lameness would ensue. It is therefore absolutely necessary to prevent this mishap by shoeing the hoofs with iron, as we shoe carriage wheels with tires, the ends of walking-sticks with ferrules, &c. This shoeing has been a great boon to mankind, as it has rendered the horse a hundredfold more useful than it would otherwise be, and has made it independent of the kind of roads over which it has to travel.

The primitive idea of shoeing was to protect the lower border of the hoof from undue wear; and, no doubt, for many ages this idea was adhered to, and a shoe was only applied when the horn had been worn away so much as to endanger the horse's utility. In time, however, the farrier began to improve upon nature, as he thought. Cutting instruments were brought into free use; the horn that was so well adapted as a protection was cut away from the sole and frog to such a degree that the poor animal, if it chanced to put its foot suddenly upon a stone, either came down with a crash, or limped along from the pain caused by the injury to the sensitive parts, which had now been almost completely exposed. In addition to this, and to compensate for robbing the foot of its horn, heavy, wide-surfaced shoes were put on to cover the mutilated sole and frog; these required a large number of big nails to attach them securely, and these nails split the hoof and pressed upon the quick; so that what between the pain, the tender sole and frog, the unwieldy, leg-tiring, clumsy shoes, and the numerous large nails that squeezed in upon the sensitive parts, we cannot wonder that the unfortunate horse suffered an amount of torture that makes one's flesh creep to think of, and which soon crippled him, and prematurely ended his days.

In addition to this barbarous treatment, in order to make fine work, the outer surface of the wall—composed of the dense smooth fibres—was rasped unmercifully away as high almost as the hair roots, and this exposed the soft immature fibres within; these shrivelled up and broke, and being unable to sustain the nails, the shoes frequently came off, and not only was the foot still more damaged, but the "cast," or "lost shoe," was a source of inconvenience and annoyance. Nay, the lives of individuals, or the fate of kingdoms, may at times have been at stake through such an apparently trivial misfortune as a shoe coming off owing to this improper treatment.

We all remember how Benjamin Franklin, earnestly solicitous of impressing upon us the great value of attending to the smallest details of everyday life, in order sometimes to avoid great calamities, makes poor Richard say—"A little neglect may breed great mischief. For want of a nail the shoe was lost; for want of a shoe the horse was lost; and for want of a horse the rider was lost, being overtaken and slain by the enemy; all for want of a little care about a horse-shoe nail."

These evils of farriery are as prevalent and destructive today as they were fifty years ago. The number of horses tor-

tured and ruined by this unreasonable paring and rasping, in addition to the heavy shoes, too small for the feet, and badly formed, is beyond computation. The frog and sole should never be pared; they flake off gradually when they have reached a certain and proper thickness; and as they have to come in contact with the inequalities of the ground, and with the loose, sharp stones so frequently on its surface, is it not reasonable to urge that they should be allowed to retain their natural condition? Whoever pares, or causes to be pared, a horse's sole or frogs, is guilty of cruelty to the horse whose feet are so mutilated.

The front of the wall should never be rasped. It destroys it, and makes it thin and brittle. It ought to be allowed to retain its close, glossy, tough surface, so well adapted for resisting the weather and holding the nails. As the wall is always growing, and as the shoe prevents its being worn down to a natural length, when the old shoe is taken off in the operation of shoeing the lower end only of this part of the hoof should be rasped down until the excess of length has been removed; nothing more.

The shoes should be as light as possible, and fastened on with as small a number of nails as will retain them. They ought to be the full size of the circumference of the hoof, and the hoof should never be made to fit the shoe, but the shoe to fit the hoof.

A proper and rational method of shoeing is a boon to the horse and its owner; an improper method, which destroys the integrity of the hoof and wears the limbs, is a curse and a torture to the one, and loss and annoyance to the other.

When horses go to be shod at a forge, care should be taken that they are not ill-treated or frightened, particularly young horses. By bad treatment, or unskillfulness in handling their legs and feet, they are frequently made so timid and vicious, that severe measures have to be resorted to, in order to ensure safety to the farrier while he is shoeing them. A few kind words, a few pats on the neck, a few gentle strokings of the limbs, and a little persuasive coaxing, will prove a thousand times more effectual in inducing horses to be patient in shoeing than all the harsh, loud-pitched words, hard knocks, twitches on nose, and other unmeaning and unhorse-manlike proceedings can do.

Sir Edwin Landseer, who, by his beautiful and everlasting conceptions—so truthfully and exquisitely portrayed—has done so much to foster among us a love for animals, shows, in the accompanying illustration, how much may be done by tact and kindness. The horse that is being shod stands as quietly, without restraint of any kind, as if it knew that the worthy old farrier was its dearest friend, and was performing for it one of the most necessary offices possible. Even its companion, the happy-looking ass, looks as if it wished its turn had come, so that it might submit its limbs and hoofs to the soft manipulation and protected efforts of the village Wayland Smith. And we may be sure that the hound always welcomes the day on which it accompanies its two companions to the smithy. (We might even fancy that it wonders why its feet are not shod in a similar manner when they become sore through long runs over hard ground.)

A humane and intelligent farrier is a boon to every community; but one who is harsh, inobedient, and pays no attention to perfecting his most useful art, is a torturer of animals and a destroyer of property.

Farriers of all men who have to do with horses, can confer upon these good creatures the greatest amount of relief and comfort, by attending to the simple indications of nature, and using their own common sense and judgment, instead of adhering to stupid and blind routine, which never improves, but, on the contrary, retrogrades. Every lover of the horse should see that its beauty is not deformed, nor its utility marred, by a farriery system which is as outrageous to the meanest comprehension as it is disgraceful to the eye we live in. The more we understand the Great Creator's merciful intentions, the less likely are we to thwart them.

G. FLEMING, Royal Engineer, Chatham

THE SUNBEAM.—The greatest of physical paradoxes is the sunbeam. It is the most potent and versatile force we have, and yet it behaves itself like the gentlest and most accommodating. Nothing can fall more softly or more silently upon the earth than the rays of our great luminary—not even the feathery flakes of snow, which thread their way through the atmosphere as if they were too filmy to yield to the demands of gravity, like grosser things. The most delicate slip of gold-leaf, exposed as a target to the sun's shafts, is not stirred to the extent of a hair, though an infant's faintest breath would set it into tremulous motion. The tenderest of human organs—the apple of the eye—though pierced and buffeted each day by thousands of sunbeams, suffers no pain during the process, but rejoices in their sweetness, and blesses the useful light. Yet a few of those rays, insinuating themselves into a mass of iron, like the Britannia Tubular Bridge, will compel the closely-knit particles to separate, and will move the whole enormous fabric with as much ease as a giant would stir a straw. The play of those beams upon our sheets of water lifts up layer after layer into the atmosphere, and hoists whole rivers from their beds, only to drop them again in snows upon the hills, or in fattening showers upon the plains. Let but the air drink in a little more sunshine at one place than another, and out of it springs the tempest or the hurricane which desolates a whole region in its lunatic wrath. The marvel is that a power which is capable of assuming such a diversity of forms, and of producing such stupendous results, should come to us in so gentle, so peaceful, and so unpretentious a guise.—*Boston Journal of Chemistry.*

MONUMENT TO CARDINAL WISEMAN.—A monument in white marble has been placed over the grave of Cardinal Wiseman in the Roman Catholic cemetery at Kensal-green. As it might be injured by exposure to the weather, it is covered by a frame of wood and glass, and will, it is said, be placed hereafter in the new Roman Catholic cathedral of the diocese. The work has been executed by Messrs. Farmer and Brindley, of Westminster-road, from designs by Mr. Pugin. Above the tomb is a recumbent figure of the cardinal in ecclesiastical vestments, and on the sides are sculptured several scenes in his life. One represents a meeting of the bishops; another the Pope giving the brief of the restoration of the hierarchy to the cardinal; another the death of his Eminence. There are many ecclesiastical devices, and an inscription in which, in addition to the dates of birth and death, the cardinal is described as "Omnia pro Christo in vita agens, omnia per Christum in morte sperans."

TO MAKE COURT PLASTER.—Soak isinglass in a little warm water for twenty-four hours; then evaporate nearly all the water by a gentle heat, dissolve the residue in a little proof spirits of wine, and strain the whole through a piece of open linen. The strained mass should be a stiff jelly when cool. Now, extend a piece of silk on a wooden frame and fix it tight with tacks and packthread. Melt the jelly, and apply it to the silk thinly and evenly with a hair brush. A second coating must be applied when the first has dried. When both are dry, cover the whole surface with two or three coatings of Balsam of Peru, applied in the same way. Plaster thus made is very pliable, and never breaks.

CHESS.

Best Solutions to problems sent in by Correspondents will be duly acknowledged.

A lively skirmish in the Montreal Chess Club.

ALLGAIER GAMBIT.

White.

Mr. Walker.

1. P. to K. 4th
2. P. to K. B. 4th
3. K. Kt. to B. 3rd
4. P. to K. R. 4th
5. Kt. to Kt. 5th
6. Kt. takes P. P.
7. Q. takes P.
8. B. ch
9. B. takes P. ch.
10. Q. takes B. ch.
11. B. takes Q. ch.
12. P. to Q. 4th
13. B. to Q. B. 3rd
14. B. takes P.
15. Kt. to Q. 2nd
16. Kt. to Q. B. 4th
17. Kt. takes P. to
18. Castles (Q. R. to
19. K. R. to K. sq.
20. P. to K. Kt. 4th
21. P. to Kt. 5th
22. P. takes P.
23. P. ch.
24. Q. takes Kt.
25. P. ch.
26. R. ch.
27. Q. R. to Q. 2nd
28. K. to Kt. 2nd
29. R. takes Kt. to
30. P. to Q. 3rd
31. P. to Kt. 6th
32. P. to Kt. 7th
33. R. to K. B. 5th
34. R. to K. 5th.
35. K. to B. 7th

Black.

- Mr. H.—
1. P. to K. 4th
 2. P. takes P.
 3. P. to K. Kt. 4th
 4. P. to K. B. 3rd
 5. K. takes Kt.
 6. P. to K. B. 3rd
 7. P. to Q. 4th
 8. P. to K. 3rd
 9. Q. takes Q.
 10. B. takes B.
 11. B. ch
 12. R. to R. 4th
 13. Kt. to K. B. 3rd
 14. Q. Kt. to Q. 2nd
 15. B. to Kt. 3rd
 16. B. takes Kt.
 17. Kt. takes P.
 18. Q. Kt. to K. B. 3rd
 19. K. to Q. 4th
 20. P. takes P.
 21. Kt. to Kt. 5th
 22. K. takes P.
 23. K. to B. 7th
 24. K. to Q. Kt. 4th
 25. K. to R. 3rd
 26. R. ch.
 27. K. ch.
 28. R. takes R.
 29. K. to Q. sq.
 30. Q. R. takes P. to
 31. K. to Q. sq.
 32. Q. R. to K. Kt. sq.
 33. K. R. to Kt. 5th to

The game was continued for several moves, resulting in a drawn battle.

(a) The attack has now the advantage.

(b) Questionable if this was the best move; the defence now breaks up his opponent's centre.

(c) Over-consider in the strength of his pawns, White gives up the exchange he might apparently have played K. to B. 3rd here with safety; it will be found, however, on examination, that owing to the awkward position of his bishop, it would have been difficult to have won whilst the adverse Knight remained in play.

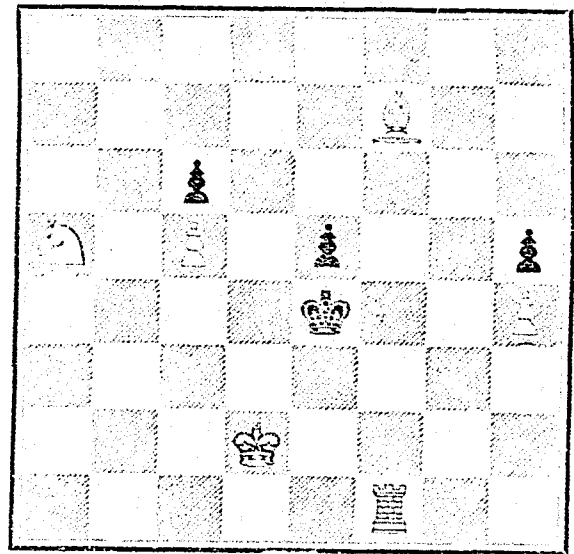
(d) Better to have taken with the other Rook.

(e) Black has now rather the best position; White is enabled to draw only by having command of the seventh file with his Rook.

PROBLEM No. 35.

By J. W.

BLACK.



WHITE.

White to play and mate in four moves.

SOLUTION OF ENIGMA No. 11.

White.

1. Q. to K. R. 8th
2. Kt. mates.

Black.

B. takes Q. or B.

VARIATIONS.

1. Q. to K. R. sq. mate.

K. P. moves.

If Black play B. to B. 2nd or K. 3rd, Q. to Q. R. 8th mates.

If R. P. moves, Kt. mates at Kt. 4th. The answers to two other lines of defence are obvious.

CHARADES, &c.

REBUS, No. 23.

1. A standard author on the study of words.
2. An important event in the life of Mahomet.
3. A lineal measurement.
4. A deadly poison used by the Indians in hunting.
5. A preposition of two letters.
6. One of the nine orders of mammals.
7. One of the respiratory organs.
8. One of the largest ships in the British Navy.
9. A signal defeat of the Austrians in 1859.
10. A manufacturing town in the centre of Russia.
11. The capital of a British Colony.
12. One of the present sovereigns of Europe.
13. A geographical term.
14. One of Shakespeare's characters.
15. An English victory over the French in 1415.
16. One of the most famous volcanoes in the world.
17. An island famous in the history of Napoleon I.

The initials and finals will give respectively the name and place of one of the most interesting and exciting events of this summer in America.

X. X.