

and his legs and ears cold, it is a certain indication that inflammation has taken place. When a mortification advances, the animal appears free from pain and easier, which is a sure prelude to death.

Clyster.—In all cases of the colic, clysters should be administered with as little delay as possible; and repeated every half hour until the disorder be removed or considerably relieved. Previous to introducing the clyster-pipe, the hardened dung in the rectum should as before stated, be cleared away.

Mr. White recommends to give, as soon as the disorder is observed, the following draught:—

Balsam of Capivi,	1 ounce,
Oil of Juniper,	2 drachms,
Simple mint-water,	1 ounce,

to be mixed in one dose. Or the following: Venice turpentine, one ounce, mixed with the yolk of an egg; adding gradually peppermint-water, one pint; also spirit of nitrous ether, half an ounce for one dose.

A clyster also should be injected, consisting of six quarts of water-gruel, or warm water, and eight ounces of common salt.

If the disease has continued for several hours, and the pain excessive, with a quick pulse, it will be proper to bleed to three quarts, or sometimes more, to prevent inflammation and remove the spasmodic contraction of the intestines. The draught and clyster should also be repeated, and the belly be rubbed for a length of time with mustard embrocation. If the disease be exceeding violent and resists these remedies, which will very rarely occur, a pint of castor oil, with an ounce and a half of tincture of opium may be given. The horse must be rubbed perfectly dry, and well clothed; and his stand filled with clean litter for a considerable light. — *Lawson's Modern Farriery.*

SPRING CARRIAGES.

The great advantage of springs in lessening the labour of draught has been ably illustrated by Edgeworth, who thus explains their action in this respect:—"Theory shows," he observes, "that whilst the wheels of a carriage pass over an obstacle, the load on the carriage must rise along with the wheels, unless it be supported by springs; but that if the load be hung upon springs, whilst the carriage-wheels tend to throw the load upwards, as they rise suddenly over an obstacle, the springs will bend, because they are opposed not only by the weight, but by the load acting downwards; and the load will consequently not be thrown up suddenly so high as if there were no springs." But the advantage does not rest on theory alone. Among the interesting experiments on carriages, of which the results are recorded in Edgeworth's treatise, are some which are very decisive as to the saving of labour occasioned by them. In one experiment with two-wheeled carriages, a gross load of 8 cwt. 2 quarters, was drawn with rather greater ease with springs, than a gross load of 5 cwt. 2 quarters, and 7 lbs. without them. In another trial with four-wheeled carriages, the gross weight drawn with and without springs were respectively about 17 cwt. and 15 cwt.; but in this case, it is stated, the carriages were not loaded sufficiently to bend the springs with facility, so that their full effect was not ascertained. Some of these experiments were directed to the effect of wooden springs; and the results were sufficient to show how much might be gained by their general adoption in such carriages as are

generally constructed without any springs whatever. In one of the cases related, a man was found capable of drawing in a two-wheeled carriage with wooden springs blocked, to prevent them from acting, a load of 2 cwt.; but when the springs were allowed to play, he drew a load of 3 cwt. 2 quarters, with equal ease. Edgeworth states that he had employed carts with wooden springs for nearly four years, and had used both straight and elliptic wooden springs successfully. He recommends as cheap and durable, a piece of common tough ash, five inches and a half deep in the middle, two inches at each end, and three inches broad, mounted on fixed shackles at one end, and with linking plates at the other. The iron work of the shackles will last for many years, and the wooden springs may be renewed at very trifling cost. Three wooden springs, connected in a similar manner to dunnet-springs, may be used conveniently for common carts.—*Penny Cyclopaedia.*

We have no doubt, that the adoption of wooden springs in constructing common carts, would enable a horse to draw a load on our uneven roads, with much greater ease, than in a cart without springs.

SPRINGS.

Rain and snow fall in quantities so unequal in different districts, and on soils which exercise upon them such various influences, that the phenomena of springs, which are primarily dependent on the penetration to some depth in the earth of water which was absorbed at the surface, are extremely complicated and curious. It is very interesting to geologists to classify and determine the causes of these phenomena, and very important in agriculture and the arts to acquire a power of directing the water currents in and below the soil and strata.—The art of draining consists essentially, in diving to the diffused and injurious springiness of particular soils and situations, a concentrated, perhaps beneficial current; while the artesian wells relieve the hydrostatic pressure prevalent at great depths, and yield copious streams in dry lands and deserts.

As a general rule, springs are permanent in proportion to the depth to which the water which supplies them has descended from the surface; they are perennial and almost inappreciably constant in temperature and volume, whether hot or cold, copious or full, in situations where, from the arrangement of the mineral masses of the globe, deep subterranean channels exist for the reception of rain, and particular impediments direct and contract the passages of reflux to the surface. Such cases are common in stratified countries where jointed limestones or sandstones receive water at elevated points on the surface, and conduct it downwards below strata of clay, which are only pervious at a few points, and there permit natural discharges at lower levels than the recipient surfaces. Frequently these argillaceous strata are so nearly impervious, that artificial perforations relieve the pressure of the subterraneous columns of water better than the few natural points of efflux, and thus pits and levels excavated for mines may drain springs at some distance.

On the contrary, in a country which contains narrow and frequently mixed masses of clay and gravel, or clay and sand, which cover the solid rocks, concentrated springs are almost absent, but there is a prevalent terribility and diffused springiness along the limit of the gravelly or sandy tracts. After a continuance of dry weather such springs

and wetness disappear, to be renewed after the next fall of rain. * * *

In general then, the water which issues from the earth in one copious spring, has been received by minute absorption on a large surface; as the living tissue of a sponge receives water by absorption through the numerous pores, collects it internally in a few channels, and rejects it by a very limited number of orifices, or as the capillaries collect blood for the veins, and these supply the heart, so 'he porous texture, and channelled structures of rocks permit that continual circulation of water below the earth's surface on which, in a great degree, its habitual character depends.

Between perennial or constant springs, and those which are more dependent on the last shower of rain, the gradations are insensible, and the explanation is entirely obvious upon the general principle stated. One of the most interesting cases of this intermediate series, is that of the intermittent springs. It is a common circumstance on the chalk downs of the South of England (Wiltshire, Dorsetshire), for the valleys to be quite dry in one part of the year (autumn or winter), and very fully watered in another (spring, summer): the springs bursting higher up the valley in some years than in others; according to the quantity of rain which fell in some previous season (as the autumn) and the rate of its transmission through the jointed and absorbent chalk.—*Id.*

SPRAIN, OR STRAIN—Is an injury of muscular or tendinous tissues, resulting from their being forcibly stretched beyond their natural length. The treatment to be adopted for sprains is the immediate application of leeches, in number proportionate to the injury and to the importance of the part.—They should be repeated till the pain and swelling are distinctly decreased; the part should be kept perfectly at rest and cool, and the patient's general health should be kept or made good. When the pain has nearly ceased, and there remains little more than stiffness of the injured part, stimulating liniments, (the common soap liniment, or a mixture of hartshorn and oil for example) may be used.

RUTLANDSHIRE, is one of the best cultivated counties in England. Thirty years ago, it was said that half the land was under grass, and that there was only thirty acres of waste land in the county. The pastures are said to produce from 300 to 400 lbs. of meat annually per acre, which is generally worth from £6. to £8. The plough in general use is one with two unequal wheels attached to the beam, one of which we have imported, and is a most excellent implement on any land that is free from stones and roots. If our pastures in Canada were improved and taken the same care of as in Rutlandshire, perhaps they would produce nearly as much meat per acre; but we have no such thing as pastures here, such as may be seen in almost every county of England and Ireland. We cannot fatten cattle unless we have such pastures as they have in the old country, and the sooner we turn our attention to this particular branch of farming, the better it will be for the farmers and for the country generally.