THE VETERINARIAN.

SHEEP MANAGEMENT.

[The following is a report, abridged from the *Wills and Gloucester Standard*, of a recent discussion before the Kingscote Farmers' Club, on a lecture by professor Wallace, one of the Professors of Agriculture at the Royal Agricultural College.]

DIPPING.

DIPPING is practised to ameliorate or prevent altogether the attack of parasites which infest sheep, the tick, the sheep cade, the maggot, and the scab insect (acarus). The tick is got by sheep from the grass, where it exists independently of the sheep. Cades may be kept very much under. They are always most abundant on sheep in poor condition. The maggot, with good management, should never have an existence. The scab can, as it must of necessity, be cleared out if the sheep are not allowed to go back in condition visibly. After a long drive or railway journey, where sheep are packed close and heated, scab is liable to break out in a few weeks, even although there has been no such thing seen in the flock they came from for years. The rule is to dip Highland sheep about ten days after coming off rail, and then there is not the slightest danger. Tobacco juice and hellebore are most useful, added to the usual dip. All dips are poisonous. The active principle, in the so-called non-poisonous dips, is carbolic acid. This has one great advantage over many of the "poisonous" dips (composed largely of the sulphide and other compounds of arsenic). It is not only able to kill the living forms (as they do), but to destroy the eggs by coagulating their albumen. The system I am about to describe to you is that suited to Scotch sheep. The proportions would have to be increased for larger English sheep.

The ingredients used for 100 sheep are 3 lb. white arsenic, 8 lb. sulphur, 1 gallon light oil of coal, and 30 lb. of lard, butter, or pure oil of various sorts. The "light oil" is one of the products of the destructive distillation of coal tar, and costs about 8*d*. per gallon. Butter is, perhaps, the best of the greases, only it is usually more expensive, and more difficult to manipulate. The bath has to be kept much warmer, as it ceases to be fluid at a higher temperature than the others.

The tank is built of concrete, 20 feet long and 2 feet wide at the top, narrowing to 1 foot at the bottom. It is 5 feet deep at one end, which depth extends to one-third of its length. The bottom then slants up from this point to the top at the other end. A pen to hold—say, forty sheep, is built at the deep end of the tank, with the floor raised 2 feet, forming a drop into the tank by means of an opening in the side next it, and about the same width. At the other end is another pen, called the dripper, of the same size, but having its floor sloping, so that the water coming off the sheep runs back into the tank.

Preparation of the bath.—The water in the tank is made up at first to a heat at which the grease or oil to be used will remain fluid. The heat of the sheep passing through will keep it up to this temperature. The arsenic is dissolved by boiling in water with a little carbonate of soda. The least quantity of soda should be used that will enable the arsenic to dissolve, as this forms a soap with part of the grease. It is then easily washed out and lost. The dip solution is made to the strength of 3 lb. arsenic to 100 gal. of water. Dry powdered sulphur is thrown into the boiling water, and thoroughly wetted before putting into the tank. The grease, after melting, is reserved to be thrown in as the work goes on enough for three sheep at a time.

The Operation.—The sheep are never lifted (which is an especial advantage if they are heavy) but pushed forward over the drop. They go right over the head, and swim out the full length, to the dripper. A man with a pole having a cleft at the end prevents them escaping too rapidly. On coming from the dripper, they should be kept for an hour in a fold before turning on to grass. This is not so much to prevent risk of poisoning as to prevent spoiling the grass, which would have a strong smell of carbolic for a time.

Advantages.—This dip is no more expensive than others. It is perfect in its action. The vermin are not only killed at the time of dipping, say September, but the grease nourishes the wool, and prevents the arsenic injuring it. On cooling, it retains sulphur and arsenic, which in spring it again gives up, to do the work of a second dipping, when the sun becomes strong enough to melt it in the wool. Perhaps the greatest advantage is that the sheep are not handled and turned up, struggling and straining, on their backs. They go in very much like a man diving, with mouth and eyes closed, and without the slightest danger of poisoning. Swimming, too, is the best way of getting the skin thoroughly wetted.

FOOT ROT.

It was noticed that dipping with arsenic much improved sheep suffering from foot rot, and from this sprung up the custom for prevention, as well as cure in mild cases, which has had such wonderful success—viz., driving sheep once a fortnight through a box containing a solution of arsenic. The drying and hardening action on the horn is injurious if done oftener. Very bad cases should be dressed at least once, some time before, with a composition manufactured by Ewing, Dumfries, or a mixtured of tar, nitric acid, and sulphate of copper. Arsenic is hurtful to large open wounds. The box should be 12 feet long, 1 foot deep, 8 inches wide at the bottom, and 14 inches at the top, but the ends only 3 inches deep. The sheep then easily step in, it being placed level on the surface of the ground, between two rows of hurdles or paling wide enough for them to pass between. The solution (strength, 1 lb of arsenic dissolved in 5 gal. water) is put into the trough, 1 to 1½ inch deep, not to come above the horny part of the foot, else it would blister the skin, and cause the hair to come off. The sheep, having first had all the loose horn cut away, are driven quietly through to prevent splashing of the liquid against the uncovered skin. Crude carbolic acid is sometimes used instead—strength 3 or 4 parts to 100 of water.

INTERNAL PARASITES.

Sheep are subject to internal parasites to a far greater degree than is usually imagined. One stage of the development of a tape-worm, found in dogs, is passed into the brains of sheep, causing "gid" or "sturdy." The remedies are of more consequence to farmers with lean stock, and ram-breeders, than to those who can send an affected animal at once to the fat market without much loss. The seat of disease is on the surface of the brain, at its base, or, in my experience more frequently in the "lateral cavities." These cavities are situated one on each side of the forward brain, and there, in common language, a "water-bag," containing many young tape-worms, grows. This presses against the brain, causing absorption of that organ, with usually a thinning and softening of the skull in one or other of the hollows on the crown of the head, immediately in front of a line drawn between the ears. There the skull is very thin. Partial paralysis accompanies, and the sheep gets blind on and turns to the opposite side to which the "water bag" inclines. Boring with a "trocar and canula," to extract the *blob* and its contents, is easy in this case. When the disease is far back in the brain the skull is thicker over it, and there is not