

is strongly impregnated with camphor, known to our grandmothers as 'camphor julep,' and believed to be a panacea for most disorders, and, more than that, a preventive. A good solution to put in the water in the place of camphor is as follows: Dissolve 2 oz. of sulphate of iron in sixty drops of sulphuric acid. After it has stood twenty-four hours mix it with two gallons of water. Let it stand two days, and then administer it by putting a teaspoonful to a pint of water.

It is thought, and we agree with it, that these parasites are gained by drinking bad water. All fowls prefer drinking from a puddle of dirty rain water to any vessel or clean spring water. The opportunity should not therefore be afforded them. Scrupulous cleanliness with liberal use of disinfectants (such as carbolic powder), and the separation of the affected chicks from the others, are the only means of prevention.

The ground is said to become tainted with the germs of this disease, so it is as well, where possible, to avoid putting chicks where the gapes have been. Old birds do not catch it; chickens recover if they can outlive the worms.

In Canada it is believed, gapes are usually due to filth, the eating of the residuum of food previously given, and feeding in damp places. It is believed that they are propagated in earth worms, but no facts have yet been discovered regarding such claim. The best remedy for gapes, if the chicks will eat, is to add a teaspoonful of spirits of turpentine to a mixture of one pint corn meal and a half pint of middlings. Thoroughly incorporate the turpentine with the dry material, then scald as much of the material as may be required, and feed to the chicks on a clean board. Put ten drops of carbolic acid in every pint of drinking water, and change the water frequently. There is no sure remedy for gapes, and inserting feather tips in the windpipe to draw out the gape worms can be done only by an experienced person. There are suggested remedies, but they are sometimes as fatal to the chicks as the gapes.

A little spirits of camphor rubbed on the outside of the throat and a few grains of the gum administered internally will sometimes give relief. Where possible, the ploughing the runs deeply every spring and sowing to rye and repeating the operation about September 1st, act as a preventive. Where the yards are so situated as to make ploughing impossible they should be cleaned and spaded frequently.

4. Bowel Trouble in Chicks.—If a chick is strong enough to break the shell, it is strong enough to live if it gets half a chance. I would not give a penny for a chick that was hatched on the 22nd day, nor for a chick that must be helped out of the shell. No care can save them, not even a hen. A chick should pip the shell on the 20th day, and be hatched on the morning of the 21st day. I have followed nature for years in this respect, and have made it a study, says Mr. J. Sontag, in the *American Poultry Journal*. Continuing he says:—'We will suppose that the chicks leave the shell in the incubator on Sunday. We allow them to remain there until Tuesday morning, when they are taken out and placed in a brooder. On the brooder floor I always keep two inches of sand; the chicks will eat the sand like wheat, and when they are 60 to 70 hours old I feed them their first meal, and I desire to call special attention to the fact that they are 60 to 70 hours old before they are fed. Nature has provided for the chick for from four to six days by furnishing the yolk of the egg. To demonstrate this take a five to six-day old crippled chick or one which can be killed without loss and you will find the yellow of the egg in the stomach. This proves that just as long as a chick has this it will live, and it will not starve or even be hungry.'

The cause of so many chicks dying and having bowel trouble is indigestion; they are fed too early. This I can prove to you in a half dozen different ways. Why do not the chicks have bowel trouble when running with the hens and looking for their own food? Why are birds in a wild state not troubled in this manner? They get their food often and a little at the time; it is a seed here and an insect there, and so until at night their crops are full of nature's food.

I have lost as many chicks as any large breeder in America for the last fifteen years and have tried all kinds of food, and have experimented upon how much to feed and when to feed and what kinds of food are the most suitable.