

SOME INTERNAL PARASITES OF POULTRY.

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The modern poultryman is not guided by fancy's pictures of his flocks. One regularly carries two pictures of farm poultry. The chick is seen scratching in the soil of the poultry park, searching for earthworms, slugs, insect eggs, and other animal food. The hen is thought of as a fowl busily searching in the litter of the poultry house for stray particles of grain. Upon such a program, the flock to-day would result in failure. Increasing ages of domesticity have not only multiplied the internal parasites of the chicken but have as well forced the poultryman to practices of greater caution. Accordingly, the chicks are reared, in the most careful manner, in clean brooder houses, the windows of which are screened against flies and the floors of which are kept clean daily; the hens are fed all mash rations so that the possible filth of the floors may not contaminate their food.

Complete isolation from infestation is hardly possible. There are at least 20 parasites that attack the internal organs of chickens, and it is next to impossible, on a farm scale, to prevent absolutely all of these from invading the flock. Certainly it is necessary to keep away from the flocks, flies, earthworms, certain slugs, and such other carriers as sparrows, dust, and the shoes of careless visitors.

Two Parasites of the Chick. The chick is host to two minute animal parasites—the gape worm and coccidia. The first of these to become evident is the gape worm (*Syngamus trachealis*), the best known of internal poultry parasites because it is made evident by the gasping or gaping of chicks whose windpipes become partially blocked by the worms and the mucus that their attack produces. Gape worms are peculiarly interesting because of the habit of the mature males imbedding the posterior end of their bodies in the bodies of the female and maintaining the resulting Y appearance during the remainder of their lives. This position is made possible by the fact that the female is .5 inch long and the male but .2 in length. The female produces an average of 2,000 eggs¹, which pass out in the droppings or are sneezed out to pass through a period of incubation in the soil or in the bodies of earthworms, after which they are eaten to infest other birds.

Many chicks die from microscopic protozoan parasites called coccidia (*Eimeria avium*) which enter the body in filth and so irritate the ceca that they ooze blood. Birds so infested may survive, but are apt to constitute the unprofitable hens of the flock that transmit coccidiosis to the young of following years.

¹ Bunyea, Hubert, Dis. of Poultry, Rept. Bur. of An. Ind., 1927.

"Proc. Ind. Acad. Sci., vol. 38, 1928 (1929)."

Three Classes of Parasites of Adult Chickens. The intestines of adult chickens are hosts to a dozen forms of worms. It is our experience that no fowl is entirely free from some form, and that, where one form appears in large numbers, other species are also present. We find round worms, thread worms, and tape worms in fowls that are given the freedom of old yards. Round worms are commonest and thread worms the least common.

Of the round worms, perhaps the large intestinal worm (*Ascaridia galli*) is most plentiful. It is whitish to yellowish, the male about three inches and the female about four inches long. The numerous eggs that pass in the droppings go through a maturation period in or on the soil so that when taken up with food, the nascent nema are ready for the new host.

As an example of the smaller nematodes, the heterakid (*Heterakis gallinae*) or cecum worm appears abundantly. It is white and averages .4 inch in length. When present at all, it is found in great numbers. Its presence is sufficient to destroy the productiveness of a hen.

Old birds have been found with the great thread worm (*Gordianea avium*) in their intestines. Specimens approaching six inches in length give the impression of being insignificant because of their ability to contract and twist their bodies.

To the research student, the most interesting parasites are the tape worms. Their life cycles are elusive because of the necessity of an intermediate host. Eggs of an adult tape worm do not affect a chicken. It is known that the list of hosts² includes the stable fly, slugs, and the larvae of some insects. This situation is suggestive of the wide range of exposure to which the chicken is subject. The harm that results from attack is illustrated by the facts that the spiny suckered species (*Davainea echinobothrida*) produces permanent disarrangement of the intestinal walls by nodular growths, while the sphenoid species (*Amebotaenia sphenoides*) produces emaciation. The first species approximates four inches in length, while the latter is hardly .2 of an inch long. Both are common in Indiana flocks.

From these observations, we are led to agree with Dr. S. B. Freeborn, of the California State Experiment Station, in considering the common chicken a walking menagerie, the host to a half million interesting, even if inconvenient and inconspicuous animal parasites.

² Hall, M. C., Farmers' Bull. U. S. D. A., No. 1337, 1927.