

the by Dr. Raymond Kray Vet's Corner

THE GASTRO-INTESTINAL TRACT Part Two

FAILURE IN DISEASE

The G.I. tract extends from the mouth or oropharyngeal area to the anus and, as previously described, represents locations of different body chemistry, muscle and nervous control. Eye and nostril problems share all their infections with the throat and often the rest of the intestinal tract. This is by virtue of the connecting naso lachrymal duct and the cleft in the hard plate in the roof of the mouth. All areas may react to their bacteria, virus or fungus infections by producing fluids, pussy discharges or even hemorrhage. Some of the micro-organisms exist as commensal, reproducing on the surface of the tissue but not penetrating or causing harm to the host bird. Stress or other factors such as a puncture or abrasion of the protective covering of the mouth tissue give these otherwise harmless organisms a chance to invade and produce inflammation and a disease.

Immunity in the form of a blood borne chemical called globulin or antibody can and does develop to some diseases in birds. This globulin combines with the invader bacteria, virus or parasite and brings about the ultimate destruction with the aid of the white blood cells. This immunity may be permanent as in canary or pigeon pox or temporary as in Canker or Trichomoniasis. Some viruses and bacteria are completely pathogenic and produce a disease condition even on healthy intact tissue, almost immediately on contact. Examples of these pathogens are Newcastle Disease Virus, Psittacosis or Ornithosis Virus, some strains of *Escherichia coli* and *Staphylococcus* bacteria.

The throat, esophagus, crop, proventriculus and gizzard usually all play host to a common infection because of their similar acid pH and chemistry. The following are some pathogens that may be found there.

Pox. Wetpox is the name commonly given to the variety of this disease which affects the mucous membrane of the mouth and esophagus with a canker or false yellow membrane.

Thrush. A mycosis or fungal infection caused by any of several different fungi or yeasts, the most representative type being *Candida albicans*. The crop lining becomes very rough and has a false white

membrane covering it which can be easily scraped off.

Parasitic Worms. The two types found here are the Capillary Worm which ranges from the crop to the stomachs and small intestine and the Gizzard Worm (*Amidostomum*) whose presence may be discovered in the gizzard under the thick horny lining.

Cholera. The bacterium *Pasteurella multocida* produces pin point hemorrhage in the proventriculus, gizzard and intestine which is characteristic of this disease.

Pseudotuberculosis. This disease is produced by another related form (*Pasteurella pseudotuberculosis*) which causes sloughing, loss of glandular surface and bleeding in the proventriculus and intestine.

Vitamin E deficiency may cause grayish white plaques to form in the walls of the gizzard.

Canker, a light cheesy yellow material in the mouth, throat and crop in doves and hawks is usually a result of a one celled organism called *Trichomonas* which wrecks havoc in the pigeon industry.

The small intestine, cecum and large intestine have their share of pathogens and these are able to live, reproduce and produce their respective pathology in the basic pH in this part of the G.I. tract.

Coccidiosis. This condition is caused by a one celled organism. The oocyst or infective stage is eaten off the ground by a bird after being passed out in the feces of another infected bird. This oocyst then has its outer shell dissolved in the intestine to release smaller cells called sporozoites which are capable of penetrating the intestinal cell walls. Coccidiosis occurs in two forms — the intestinal one which is caused by at least seven different types of coccidia, and the acute cecal form which may result in as high as a ten per cent mortality. The various types may be identified by the areas in the small intestine and cece in which they produce inflammation, hemorrhage and pathology. Immunity to one species still leaves the bird susceptible to the others and the organisms passed out in the feces may leave the ground infective for at least a year.

Botulism, caused by *Clostridium botulinum*, a bacteria, present in spoiled grain and decomposed meat and vegetables manifests itself as intense hemorrhage in the intestine.

Blackhead, caused by *Histomonas meleagridis* is primarily a disease of game birds. The protozoan which causes it is carried in the egg of another parasite, the Cecal worm. Protected by the shell of this worm's egg, the blackhead organism can remain infective in the soil for as long as three years. The intestinal signs of

Blackhead on post mortum are primarily a swollen cecum filled with a cheesy, sometimes bloody plug.

Escherichia coli. Another enteritis and very serious condition is caused by *E. coli* bacteria. This typically produces a blackened necrotic area in the intestinal tract caused by the toxin produced as a by-product of the organism. Hemorrhage and death are a very common result.

Newcastle Disease virus, *Salmonella typhimurium* and *Salmonella pullorum* all produce diseases named after the micro-organism. Their signs in the intestinal tract are eroded or raised plaques in the walls of the gut.

The intestinal tract also has its share of worm parasites, for it is here that the roundworms and tapeworms bury their heads and call home. The Cecal Worm of course secretes itself in the cecum. ■

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