

## **Diarrhoea in Budgerigars**

**Dr. John R. Baker B.V.Sc. Ph.D. M.I.Biol. F.S.A.Scot. M.R.C.V.S.**

Diarrhoea is one of the most common symptoms seen in ill budgerigars, indeed it may be the only sign of illness. It can be of relative insignificance if transitory but if it lasts for more than a couple of days the consequences can be serious or indeed fatal. Diarrhoea leads to the loss of fluid so the bird may be dehydrated; it can lead to the loss of salts and minerals from the bird which in turn may lead to general weakness or, in extreme cases, fits. If prolonged it may interfere with the digestion of the food, or the bird may be off its food leading to weight loss and eventual starvation. A complication of diarrhoea is that the droppings may become sticky and adhere to the feathers around the vent. This is not always apparent and indeed appears to be frequently missed by fanciers because it may often only be seen if the bird is examined from underneath. Looking at the bird sideways may not show this accumulation of droppings (frequently referred to as clag). The significance of this condition is that the accumulation can be so severe that the vent is blocked. Once this happens the bird will die in two or three days due to the accumulation of waste products in its system. Another complication of diarrhoea is that the damage to the intestines occasionally affects the pancreas by blocking its duct to the intestine. The pancreas secretes a lot of digestive enzymes and if these do not get into the bowel digestion is significantly impaired.

Certainly, it can be seen that diarrhoea is not a condition to be taken lightly. Unless the condition self-cures in a day or two action needs to be taken. Diarrhoea has many causes, as can be seen from the tables; these were drawn up a few years ago and some diseases have become commoner and some rarer but they do give a clear indication of the wide range of causes of soft or wet droppings. I am sorry that the tables include technical terms but there are no equivalent terms in common use.

As can be seen from the tables the causes of diarrhoea can be split into two, those which directly affect the digestive system and those primarily affecting other organs but which produce diarrhoea as a secondary effect.

Taking the digestive system first, the commonest condition is enteritis which is an inflammation of the intestines. This has several causes chief amongst which are bacterial infections, most commonly *Escherichia coli* (sometimes referred to as *E.coli*). occasional cases are due to other bacteria such as *Salmonella* (which has not so far been seen in the current work) and *Clostridia*; a text book lists a further 12 different bacterial infections with which can cause diarrhoea. Another relatively unusual cause is overgrowth of the normal bacteria which should be present in the gut but which multiply uncontrollably so that vast numbers are present. If a bacterial cause is suspected or proven by laboratory examination antibiotic therapy is indicated together with the support measures described below. Megabacteriosis (which is actually infection with the fungus *Macrorhabdus ornithogaster*) probably

needs no explanation; in this condition the diarrhoea is usually not severe and is frequently of a light brown colour.

Gizzard abnormalities were common but are now rarely seen. In this condition the lining of the gizzard which is very important in the breaking up of the food degenerates and becomes soft. The cause of this is not known and there is no specific treatment. Other of the less common causes include villous atrophy and villous fusion. The villi (small finger-like projections from the wall of the intestine increasing the surface area through which the food is absorbed) are affected in both villous atrophy (in which the villi are shortened or occasionally absent) and villous fusion means that the bird is unable to absorb food efficiently and the poorly-digested food material may result in diarrhoea. The bird with flaccid vent had the opening to the intestine permanently partially open so droppings were passed out without spending time in the lower intestine which is needed for water to be absorbed thus resulting in wet droppings. A bowel infarction occurs when for some reason the blood supply to the gut is cut off and that section of the bowel dies. The other conditions in the table are probably self explanatory, the cases of worms were all due to round worms; flukes and tapeworms have also been recorded by other authors.

Of the non-digestive system causes of diarrhoea some appear to act by displacing the intestines and thus interfering with their function; this particularly applies to the cancers listed which are often quite large before causing illness and death; the case of cystic ovary probably acted in the same way. It is debatable whether the cases of kidney malfunction resulted in true diarrhoea as in these the urine contained excessive water; sometimes the faeces and the urine get mixed before or during being passed out resulting in the droppings being wet. The liver is, amongst other things, the organ which produces substances which aid in the breakdown of fats in the diet. If the liver is inflamed smaller amounts of these substances are produced and diarrhoea may result. Egg peritonitis results in infection and inflammation in the body cavity and the outside of the intestine will be affected resulting in disturbed function.

Other conditions which can give rise to diarrhoea are listed by other authors but have not been seen by me. Others include the overuse of antibiotics which can lead to the killing off of the 'good' bacteria and their replacement by disease-causing ones or a lack of intestinal bacteria which are important in the proper digestion of the food. Sudden changes in the diet can result in diarrhoea again probably resulting in effects on the 'good' bacteria numbers. Stress and disturbances of the feeding regime such as when birds are moved from one premises to another or when taken to shows can have similar effect. There are a number of viral causes of diarrhoea; indeed one author lists 18; these are often difficult and very expensive to diagnose so that it is rarely undertaken except in the cases of serious outbreaks. A number of protozoa, minute parasites, are another cause. The commonest of these is said to be Giardia but this condition is very difficult to diagnose, I have seen no proven cases in budgerigars but have seen it in a few of the larger parrots.

Of the diseases listed in the table only enteritis, megabacteriosis, fungal infections of the gizzard and worms have specific remedies using antibiotics and antifungal agents. In order for these to work well the birds need nursing support as do those with conditions without specific remedies. For a non-specific treatment cold sweet black tea works well in a number of cases, the tannin in the tea acts as a coating for the intestine, the sugar acts as an energy source and the fluid will replace any water lost. In more serious cases more active treatment is called for. The affected bird should be kept warm as seriously affected birds probably die of hypothermia as they lack sufficient energy reserves to keep themselves warm and in those that do warmth will conserve their energy supplies. It is important to supply water and if the bird is not drinking this should be given by crop tube. Up to 4ml of water should be given a day in divided doses, the addition of two teaspoons of sugar and a pinch of salt will help. Obviously the energy supplies need to be maintained. There are a number of proprietary easily-digested foods some specifically designed for birds. The bird should be tempted with a variety of foods to try and get them to eat; soaked millet sprays will often be taken when other foods are refused.

Probiotics and prebiotics have a role to play. I tend to use these as a follow-up to other treatments in order to try to re-establish the normal gut bacteria and they are also useful in cases of non-specific diarrhoea such as when the bird is moved or shown when the gut bacterial populations can be altered. It is probably of little use if given with antibiotics as the bacteria probiotics contain can be killed off. On a few occasions I have treated birds emulsifying droppings from a healthy bird in water and giving it by crop tube; this again is an attempt to replace the lost gut flora.

Table 1

Disease of the alimentary tract leading to diarrhoea

Disease	% of birds with diarrhoea	
Enteritis	24% <sup>#</sup>	
Megabacteriosis	17%	
Gizzard abnormality	12% <sup>*</sup>	
Villous atrophy	7% <sup>+</sup>	
Fungal infection of the gizzard	5%	
Intestinal cancer	3%	
Worms		3%
Flaccid vent ( paralysed?)	1%	
Villous fusion	1% <sup>+</sup>	
Inflamed proventriculus	1%	
Bowel infarction	1%	

# These were shown to be almost all due to infection with Escherichia coli (E.coli).

\* This condition used to be quite common but in the last year or so the number of cases has markedly decreased

+ These cases depend on a microscopic examination of very fresh intestinal samples, birds more than a couple of hours after death can not be used due to decomposition so the number of cases recorded may be an under estimate.

Table 2

Disease outside the digestive system leading to diarrhoea

Disease		
Kidney malfunction	8%	
Inflamed liver	7%	
Kidney cancer		4%
Cancer of oviduct	3%	
Egg peritonitis		3%
Cystic ovary	1%	
Bile duct cancer	1%	