

# Chlamydiosis—an enigma for the pet bird industry

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Since 1882, when the first link of "parrot fever" to imported parrots was made by Morange, the pet bird industry has had to deal with this stigma by using information that, even today, is of questionable value. The observation that the current importation and quarantine system does not ensure chlamydia-free birds for the marketplace goes without question. Chlamydiosis in captive breeding collections is often overlooked but nonetheless prevalent. The pet bird industry needs guidance. The tendency to cling to enforcement of outdated regulations that downgrade the complexity of the problem only exacerbates the problem.

The pet bird industry is multifaceted and integrated, with birds passing freely between breeders,

wholesalers, and retailers. Birds in trade are highly mobile, often being sold many times before reaching the consumer. Chlamydiosis, as it relates to the pet bird industry, should be viewed from 3 perspectives—that of the importer or wholesaler, the pet shop owner or retailer, and the breeder.

## Imported birds

Short-sighted observers often blame inadequate treatment time as the primary cause of treatment failure in imported birds, and propose an extension of quarantine from 30 to 45 days as the solution. The 30-day quarantine for imported birds was imposed to prevent entry of exotic Newcastle disease, not for the control of chlamydiosis.

The USDA regulations governing importation of pet birds simply require that "birds of the psittacine family shall receive a balanced, medicated

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feed ration treatment containing not less than 1% chlortetracycline (CTC) with not more than 0.7% calcium for the entire quarantine period as a precautionary measure against chlamydiosis."<sup>1</sup>

United States Public Health Service guidelines, available through the Centers for Disease Control (CDC) and based on research performed at the Hooper Foundation, still specify the use of "SF mix 66," even though this product is no longer being manufactured. The CDC recommends, but does not require, that treatment with CTC be continued for an additional 15 days by dealers or bird owners.<sup>2,3,a</sup>

Original public health service regulations required treatment before importation. This foreign treatment program was abandoned when the USDA quarantine system was established in 1974. In 1985, CDC issued a final rule deleting its pre-import treatment regulations for psittacine birds, stating that:

Psittacosis in humans is a disease which is easily managed and is rarely transmitted person-to-person. The Department acknowledges that psittacosis constitutes a health risk for the relatively small population engaged in commerce or ownership of cage and aviary birds and will continue to monitor the occurrence of psittacosis in the susceptible subpopulation. . . . However, the low incidence of psittacosis among the general population does not warrant quarantine restrictions on the importation of psittacine birds.<sup>4</sup>

It is clear that current regulations are vague, and that their enforcement is difficult if not impossible. Guards, whose primary responsibility is to prevent the removal of birds from a quarantine station, are unlikely to supervise the mixing of medicated feed. In most cases, they do not enter the station after the 16-day sampling period. The only way that regulations could practically be enforced would be to allow only medicated feeds to enter the station, which is not an easy solution.

Obviously, the importer who elects not to treat birds has an economic advantage over the importer who complies with the law. An importer's losses from chlamydiosis may be higher, but overall, these losses may be lower because of better feed acceptance and lower medication and labor costs.

The product most often used by importers is a soluble powder of CTC, available in 2 concentrations. The concentrated form<sup>b</sup> contains 25.6 g of CTC/packet. One packet would therefore be needed for each 2,560 g of feed (5.6 lb or 6 qt of cooked corn). If mixed in these ratios, the final feed would be so bitter and sticky that virtually any bird would find it unacceptable. Consequently, those persons

who do feed CTC to birds probably would underdose it. To further complicate compliance, regulation requires weighing of feed and medication daily, a time-consuming and impractical approach. A simplified regulation might indicate 1 packet (25 g) of CTC in 6 qt of feed.

Boiled corn is almost universally accepted by psittacine birds in quarantine and, although not nutritionally balanced, provides sustainable, economical nutrition. At approximately \$6/100 lb, the cost of feeding a 1-lb Amazon parrot ( $\frac{1}{4}$  lb  $\times$  30 days = 7.5 lb) in quarantine would be approximately \$0.45. A packet of concentrated CTC costs about \$2.60. If a 1-lb bird eats  $\frac{1}{4}$  lb of medicated feed daily, the cost of treating each bird for thirty days' quarantine would be \$3.48 for medication, plus \$0.45 for corn (\$3.93).

Pelleted feeds containing 1% CTC, supplied as a feed premix,<sup>c,d</sup> are available and approved for use by USDA. The cost would be approximately \$8.25 ( $\$1.10/\text{lb} \times 7.5 \text{ lb}$ ) to treat an Amazon parrot for 30 days, assuming minimal wastage. Hidden costs are also involved in that the feces are voluminous and sticky, adding to cleaning time. Conversely, there is a decrease in food preparation time. Acceptance of pelleted feeds is variable. In general, they are well accepted by Amazon parrots, African gray parrots, cockatoos, and conures. They are refused by a large percentage of macaws and a low percentage of cockatiels.<sup>5</sup>

These cost differences seem insignificant when considering the cost of feeding a single bird, but in a group of 500 the cost of feeding for 30 days would be as follows: corn with no medication, \$225; corn with CTC, \$1,965; and medicated pellets, \$4,125.

Importers who comply with the regulations obviously do so in the belief that their birds will be healthier and therefore a better product for the consumer. Birds that have chlamydiosis may become secondarily infected with bacteria, which may be difficult to eliminate. Chlamydiosis may also complicate viral diseases. Species in which chlamydiosis is known to be a common problem are often started on a CTC treatment regimen shortly after capture, in preparation for shipment. Often, CTC treatment of these species is continued after release from quarantine, to decrease the chance of picking up chlamydia when exposed to other birds or possibly contaminated premises. A bird may be kept in the country of origin and given CTC for 1 to 4 weeks while a load is gathered for shipment. The bird is then given CTC in quarantine for at least 30 days, but sometimes for 40 days or more if test results are delayed. The bird may then be given CTC several weeks longer after release. It is then sold to a pet shop, which will immediately

<sup>a</sup>Alford BT, Technical Information Manager, Animal Nutrition and Health Department, American Cyanamid Co, Princeton, NJ: Personal communication, 1988.

<sup>b</sup>Aureomycin soluble powder, Aureomycin soluble powder concentrate, American Cyanamid Co, Agricultural Division, Wayne, NJ.

<sup>c</sup>Aureomycin 50 or Aureomycin 70, Chlortetracycline granular premixes, American Cyanamid Co, Agricultural Division, Wayne, NJ.

<sup>d</sup>Zeigler Medicated Parrot Diet, Zeigler Brothers Inc, PO Box 95, Gardners, Pa.



begin treatment with CTC. It is obvious that if some birds are undertreated, many may be overtreated.

The dangers of treatment with CTC are not well delineated. Five to 10 years ago, many buyers preferred to buy birds that were not treated, assuming that the multitude of hepatic disorders seen in pet birds were associated with overtreatment in quarantine. The recognition of disease agents that are probably responsible for many of these changes has helped to alleviate some of this fear. Psittacine reovirus is an example of a pathogen that causes hepatic necrosis without pathognomonic lesions. These lesions could easily be confused with those of a toxicosis. Certainly we should not consider CTC treatment to be without risk—and the issues of toxicity, immunosuppression, antibiotic resistance, and alterations in gut flora must all be considered.

### **Chlamydiosis and pet shops**

Pet shops are the major public outlet for the distribution of pet birds, and as such are constantly on the firing line in cases of chlamydiosis. Because veterinarians cannot decide what constitutes adequate testing and treatment procedures, pet shops face a daily dilemma.

When retailers purchase a bird, in most cases they do not know the duration of CTC treatment, if any. Unless the bird is purchased while on a CTC treatment regimen, reinfection after discontinued treatment is a possibility. Retailers are faced with the problem of keeping the bird healthy, making it attractive to encourage sales, and being legally liable for any bird that may have chlamydiosis. Some birds may be sold immediately after arrival, whereas others may stay in a shop for years, resulting in repeated exposures and treatments.

Because the preparation of medicated feeds in a pet shop is labor intensive, many shop owners opt for the inadequate technique of water administration of CTC. The use of medicated pellets has the same problems of acceptance as well as unsightly and malodorous feces that reduce sales.

The Pet Industry Joint Advisory Council recently published a pet care manual<sup>6</sup> for pet shops. Chlamydiosis is covered in detail in this manual, whereas other diseases are covered only in chart form, indicating the relative importance of this disease to the pet bird industry. In this brochure, treatment for chlamydiosis with the use of medicated feeds is recommended for 2 to 3 weeks for imported birds, and for 30 to 45 days for captive-born birds.

The biggest problem for retailers, however, is the legal liability.<sup>7</sup> Cases of human chlamydiosis involving a bird purchased from a pet shop often end in litigation. To further complicate the problem for pet shops, state regulations vary greatly. In some states, overzealous enforcement by a few dedicated individuals results in economic difficulty. New shop owners who are not familiar with chlamydiosis are often the targets. For example, a

case of chlamydiosis may be diagnosed in a bird 1 month or more after purchase, and is reported to the state. Public health personnel come into the shop where the bird was purchased and force quarantine for 30 to 45 days while the birds are being treated. The shop is allowed to remain in business, but customers must be told that the birds are not for sale, because of the quarantine. In many cases, the story will make it into the local newspapers, with a heading such as "Deadly disease at pet shop." This is certainly not helpful to the success of a new business. Economically, the shop owner is severely penalized for a problem for which the state or the veterinary community cannot provide adequate diagnostic or management programs.

Inasmuch as chlamydiosis in pet psittacine birds is not considered to be a notable problem by the CDC, states are on their own in formulation of policies. States vary greatly in the way that chlamydiosis is addressed, these differences often being ones of personality of the public health officers in that state.

The Colorado Department of Health<sup>8</sup> requires that bird dealers furnish to each purchaser of psittacine birds a special sales record containing a warning to the purchaser of a possible chlamydiosis hazard. The warning must include a description of the disease signs in birds and symptoms in human beings and must emphasize the need for prompt medical diagnosis and treatment. In Washington, it is a misdemeanor to sell a diseased animal without advising the purchaser; in New York and Mississippi, it is a misdemeanor to knowingly sell or offer for sale contagious or infectious animals. Under Washington code, if investigation of a human or other case of psittacosis indicates probable infection from a recently acquired psittacine, the vendor . . . shall, on request, surrender to the state or local health officer a selected sample of birds remaining . . . for the purpose of making laboratory examinations. There will be no financial reimbursement or indemnification for birds surrendered.

A Rhode Island code<sup>9</sup> reads as follows:

If laboratory examination shows the presence of psittacosis virus, the remaining birds shall be killed and burned by the owner or other person in charge of such birds immediately on notification of such finding. . . . No indemnity will be paid the owner or other person in charge of destroyed birds.

Maryland has laws similar to those in Rhode Island. In Vermont,<sup>10</sup> all shipments of psittacine birds into the state shall be quarantined for 15 days. The quarantine shall be followed by an inspection by a licensed veterinarian, who shall issue a health certificate prior to the sale or other disposal of such birds. A similar law in Virginia requires feeding of CTC during the 15 days of quarantine.

The fear of quarantine and the subsequent



economic problems associated with the diagnosis of chlamydiosis results in underreporting of the incidence of the disease. Shop owners may prefer dealing with undiagnosed disease problems rather than suffer the consequences of dealing with state public health officials. Veterinarians are often caught between the pet shop and the state, when reporting the disease may cause an extreme hardship on the client.

### **Chlamydiosis and pet bird breeders**

In 1955, California initiated a program for the treatment and banding of parakeets in an attempt to control chlamydiosis in captive-born birds. By many accounts, chlamydiosis is widespread in domestic collections, especially in cockatiels. Aviculturists, like pet shop owners, fear the stigma of chlamydiosis and often treat empirically rather than have the birds undergo diagnostic testing.<sup>11</sup>

The proposed National Cage and Aviary Bird Improvement Plan tried to address chlamydiosis in breeding collections, and the same problems were evident. Diagnostic procedures are inadequate or impractical to determine whether chlamydiosis is in a collection. Screening new additions was recommended, but not practical. Introduction of chlamydia into a disease-free flock by wild birds, new birds, or show birds is a constant threat. The biggest problem was that aviculturists feared government intrusion into their aviaries, and this was the ultimate demise of the improvement plan.

Pet shop owners or individuals who buy domestic birds feel they are buying birds with less chance of acquiring disease, but nevertheless often introduce chlamydia into the shop or aviary. Many aviculturists add new birds to their collections with no quarantine, whereas others believe treatment will result in liver disease or infertility. Clinically normal infected adult birds may breed poorly or produce diseased young. Aviculturists need guidance, practical testing programs, and education that emphasizes facts rather than fear.

### **Conclusions**

Pet bird retailers and, to a lesser extent, pet

bird wholesalers and breeders are under moral and legal obligation to provide chlamydia-free pet birds to the public. At the same time, the veterinary profession and regulatory agencies are ill equipped to provide a practical and effective way to achieve that goal. Still, pet bird retailers cannot obtain reliable information on how to control the problem, but are often penalized severely, to the extent of potential loss of the business, when a case arises.

Diagnostic methods currently available are inadequate for large-scale testing of pet birds by retailers, wholesalers, breeders, or veterinarians. Treatment programs are outdated, recommending drugs that are not available. Regulations should be easy to comply with, for example, stating mixing instructions in volumes rather than by weight. State regulations are inconsistent, and are often so harsh as to discourage diagnosis.

It is time for the veterinary and regulatory communities to establish a realistic approach to handling epornitics, including economical and practical means of testing and treatment, with consideration of alternative drugs. But even if state-of-the-art control procedures were available, they would be useless if administered under Victorian regulatory practices.

### **References**

1. 9 CFR § 92.11(f)3iiC. Revised Jan 1, 1987.
2. *Description of optimum treatment procedures for the various psittacine species*. Atlanta:US Department of Health, Education and Welfare, Public Health Service, Centers for Disease Control.
3. 9 CFR § 92.11.
4. *Federal Register*. 50:1516-1542.
5. Landgraft WW, Ross PF, Cassidy DR, et al. Concentration of chlortetracycline in the blood of yellow-crowned Amazon parrots fed medicated pelleted feeds. *Avian Dis* 1982;26:14-17.
6. *Animal husbandry manual*. Washington, DC: Pet Industry Joint Advisory Council, 1987.
7. Mohan R. Medico-legal aspects of psittacosis, in *Proceedings*. First Int Conf Zool Avian Med, 1987.
8. Pet animal and psittacine bird dealerships. Colorado State Code 25-4-701.
9. Title 4, Chapter 11. Rhode Island State Code.
10. Title 6, Chapter 107. Vermont State Codes.
11. McDonald SE, Bayer EV. Psittacosis in pet birds. *Calif Vet* 1981;35(4):6-17.