

# Avian Medical Management for the Remote Aviculturist

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## Video Cameras as Tools for Avicultural Management

The concept of employing video cameras is certainly not a new one as far as its use as a business aide. Dating services learned a long time ago that a substantial number of potential customers could be convened together at a future date with little inconvenience to anyone, at a fraction of the cost of actually handling large numbers of real live people simultaneously.

As we look for means of improving our ability to assist aviculturists in their efforts to increase productivity, several tools have taken on significance far beyond their original priority level when compared to our traditional tools, such as microscopes and surgical instruments. Our greatest tools are, without a doubt, our means of communication and hence the telephone and typewriter have become a mainstay in our arsenal to defeat disease, poor productivity and cash flow losses for our clients.

We have both spent a considerable amount of effort in aiding bird owners and aviculturists alike, educating them in their concern with basic sanitation, compound construction, disease control, diagnostics and preventive medical planning. As more aviculturists become aware of our availability, we find ourselves returning phone calls to more and more distant locations. At first, this struck us as being a bit curious, as we assumed that other resources closer to home would be more efficient to start with, rather than skip multiple time zones and fill Ma Bell's limitless pockets. On inquiry, we discovered we received much the same answer. Many aviculturists from ideal bird raising areas were either too far from any qualified avian medical assistance or their veterinarian was already

frustrated in the task of taking on a problem of great complexity involving multiple intertwined facets of management and disease. And, the longer we examined the problems of avicultural medical management, it became painfully clear that disease control and aviary management are one and the same. No degree of medication will ever correct an ongoing disease, no matter how apparently minor, until the initiating cause is identified and eliminated.

The problem that unfolded for us in nearly a daily (or nightly) scenario was that of phone consultations of lengthy hours evaluating the various probabilities as to causes of poor fertility, dead in shell embryos or flightless, rough pairs. It is natural to immediately list at least a half dozen logical suspects, including the ever popular topics of aviary design, incubator function, nutrition, viruses, and environmental temperature control (pediatric or otherwise).

We soon realized, after trying to offer bona fide suggestions of logical assumption for these avicultural riddles, our efforts were being hampered by a communication gap. Each tentative solution was being offered based on the relevant facts of the surrounding conditions as *perceived* by the owner and *interpreted* by ourselves. The priority level of each of the assorted items in the conversation were being weighed slightly differently by each end of the telephone. No amount of follow-up phone calls ever seemed to complete a totally inclusive roster of pertinent information, potential causes, or perfect solution. This was additionally complicated by the fact that frequently it was difficult, or at times impossible, to obtain veterinary help for the purpose of drawing blood samples for serological testing, cul-

ture samples for processing and physical examinations of the actual birds. Cost factors also became an issue at times, as available veterinary facilities not used to processing large numbers of aviary samples had no means for assimilating the necessary volume at a cost agreeable to the aviculturist in question.

Since we had been so pleased with the success of video cameras being employed to record the secret activities of breeding bird pairs, we decided that the same concept would apply equally as well to the unconscious activities of the aviculturist. This would bring the aviculturist into our office in all of his splendid naked truth for us to compare to the telephone notes we had accumulated.

It was reasoned that if no ongoing medical crises existed, and a general evaluation was the aviculturist's main goal at the time, a videotape of daily aviary activity was a much more effective start than merely theorizing at what might be truly occurring. A videotape certainly does not replace a thorough, on-site evaluation with a full medical screen, but the concept presented itself that if management could be improved, then the eventual medical work-up might actually reveal less problems to be dealt with later at a considerable cost savings. Since management is so critical to reducing stress, a primary component in disease, the management changes would inevitably need to be undertaken in either sequence.

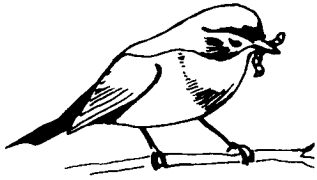
The other consideration we took in making early changes in construction, layout, sanitation and nutritional plans was that many of the basic recommendations are easy to make, but might well require many months of future planning and substantial investment as well. It is all well and fine to recommend an aviary owner move his flights up three feet in height and pour a concrete floor for an existing aviary, and quite another to figure out what weekend he can squeeze this little task into.

Our first client brought this home to us in such a strong fashion we now urge all phone consultations to give serious thought to the possibility of video documentation.

The details of this encounter involved a very frustrated breeder from Canada whose goal was to establish a self-sufficient aviary with the standard inventory of macaws, Congo greys and assorted cockatoos. His initial phone calls centered around

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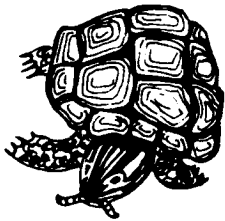
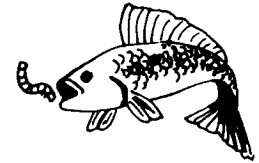
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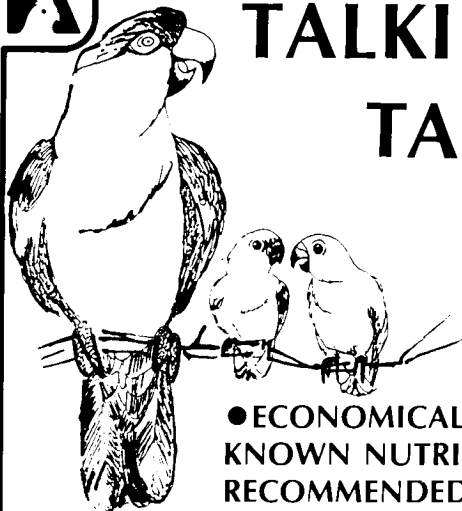
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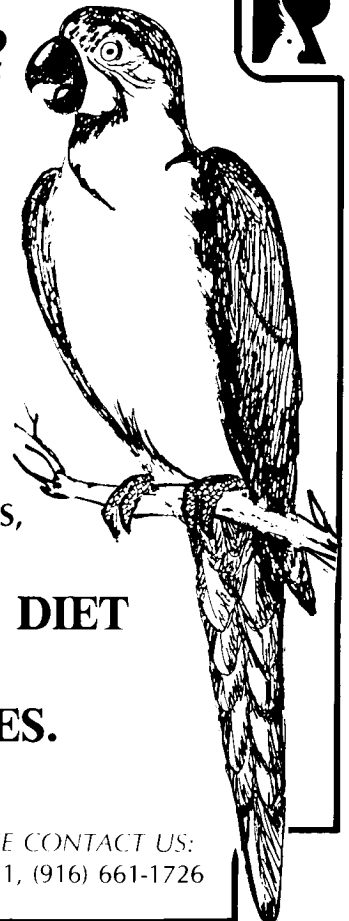
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questions involving dead-in-shell embryos, clear eggs, deaths in weaning age birds and stunted babies.

Many hours of conversation identified some very basic problems in rapid order, such as diets and pair arrangements. Other items discussed, such as disinfectants used, brooder temperatures, water cooling systems and flight construction seemed to be well in order according to the owner's assessments and description, and no additional suggestions were put forth for these items.

After several additional phone calls, we decided it would be advantageous to obtain a videotape of the aviary, as some of the recommended supplies were not available in Canada, and a trip to the aviary would have been prohibitively expensive.

The recommendations for the tape were the following:

- Full coverage of the physical layout, including the outside building structure, internal construction, including wire type, placement, floors, nest boxes, water systems, etc.
- Feed storage, feeding schedules and feed delivery to the cages.
- Sanitation program, including food preparations.
- Nursery, incubators, brooders (including thermometers), humidity sources and baby servicing techniques.
- Temperature and humidity control systems.
- A full day's activities taped by a second person with as little change in the routine as possible.
- Full audio narrative to explain the activities, construction, materials, brand names, etc.
- A full narrative of the perceived problems, the anticipated goals and what the aviculturist felt might be the best approach, given his particular needs and limitations.

The tape arrived and consisted of two and a half to three hours of material. This required about four hours of actual viewing time.

It became immediately obvious that what we had assumed or thought we understood was out of step with what was actually occurring.

With the aid of the tape we were able to identify a number of fundamental problems which would require changing. Just based on simple changes in scheduling, hand tools and cleaning materials, the amount of labor and effort could be reduced by nearly an hour each day and had the added benefit of reducing cross con-

tamination between cages, buildings and floor and bird stresses.

One of the striking discoveries we made was the tremendous labor intensive efforts which were being expended in daily care of the aviary. An unneeded amount of backtracking and overlapping traffic patterns had created both a time-consuming demon as well as defeating any earlier efforts in cleaning or disinfecting that day.

The following list of comparisons demonstrate the discrepancies between the appraisals of the aviculturist, our interpretation, and the actual activities and problems which plagued the progress of the aviary. The use of videos provides the opportunity for an unbiased evaluation of the events that may actually be creating or supporting the very concerns the aviculturist wishes to eliminate.

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**Problem 1**

*Various species with  
dead-in-shells at various  
incubation stages.*

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**Telephone Evaluation**

- Nest box construction including whether metal boxes could be too cold.
- Power fluctuations in incubator supply source leading to irregular temperature cycles.
- Poor bonding by pairs.
- Incomplete copulation.
- Questionable sex of paired birds.
- Dietary quality including poor egg shell quality.
- Assorted infectious agents, especially bacteria and viruses.

**Video Evaluation**

- Plywood incubator construction with light bulb heat source produced poor heat control, poor humidity control and allowed for very limited disinfection of the incubators after each use.
- Large, clear plexiglass viewing window on each nest box provided a poor sense of security for pairs which were easily frightened off eggs.
- All pairs showed good pair bonding and would attack intruding arms, dishes and instruments during feeding and cleaning. These invasive procedures were also responsible for disrupting egg sitting and chick damage as the

parents scrambled out of the box to defend their territory.

- Diet preparation was followed step-by-step and found to be of high quality and prepared in a clean manner.

### Problem 2

*Low egg production this year compared to previous years.*

#### Telephone Evaluation

- Number of pairs for each year, their ages and number of each species type each year.
- Records of any deaths, mate attacks.
- Egg records to determine if parents may have eaten or destroyed viable eggs.
- Number of eggs pulled for incubation vs. number of eggs left under parents.

#### Video Evaluation

- Both the number of pairs and the variety of species had increased yearly as the largely empty aviary was filled to put empty flights to use. Cockatoos and greys were placed near the louder, disruptive macaws. Previous clutches laid by productive cockatoos and greys ceased when macaw pairs were placed nearby.
- Most eggs were pulled and incubated due to infant deaths at days 1 to 3. This was concluded to be due to pair desertion or parent trauma. Incubated eggs were not being kept hydrated or heated evenly, leading to excessive water loss or retention.

### Problem 3

*Deaths in babies of ages from early to late hand-feeding stages.*

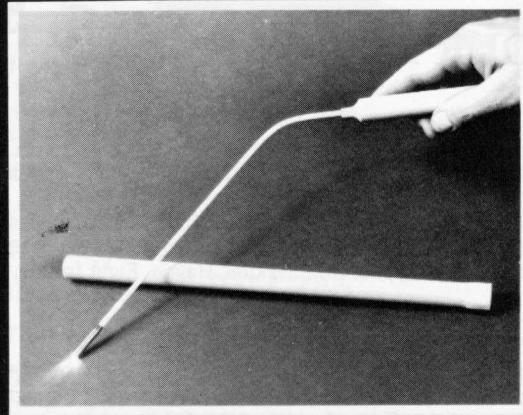
#### Telephone Evaluation

- Poor brooder temperature control.
- Nutritional review of hand feeding mix.
- Review of hand feeding technique.
- Spread of infectious agents, particularly Papova virus (polyoa virus).

#### Video Evaluation

- Baby formula was a commercial type manufactured in Europe. No nutritional analysis for protein, fat or calcium or carbohydrate levels

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was present and, therefore, discarded in favor of an analyzed and tested formula. Hand feeding techniques revealed the consistency of the mix was too thick, leading to difficulty in digestion by the chick, insufficient water intake and chick exhaustion. Babies were kept in plastic tubs which were covered with perforated lids. This set-up effectively altered the actual heat and humidity levels immediately surrounding the chick and did not reflect what brooder controls were registering.

## Problem 4 *Sanitation program effectiveness.*

### Telephone Evaluation

- Review of disinfectant types used (chlorine bleach and a quaternary ammonium compound).
- Relative scheduling of feeding, cleaning and baby handling.
- Floor care and drainage system.
- Floor and wall construction materials.

### Video Evaluation

- Bleach was splashed by hand under cages after hosing leading to unacceptable fume exposure.
- Plywood floors with plastic liners covered in cedar chips were sifted and cleaned by hand after soiled drinking water was discarded into the shavings.
- Food was distributed from a mobile feed cart via transferring pellets, etc. by hand into crocks which were returned to the same cages.
- Extensive use of wood floors, cage supports and building materials allowed for a build-up of potentially infectious wastes and discarded feed on surfaces which resist complete disinfection.
- The use of a stiff wire brush to knock dried wastes from the wire (weekly) caused a great disturbance in nesting pairs. It was recommended to spray the wire bottoms with vegetable oil to prevent sticking and hose the wastes off with a gentle stream of water.
- A second flushing 20 minutes later, along with the use of a soft nylon brush, would complete the cleaning noiselessly.
- Plywood and drywall materials used for walls offered little to no

resistance to rodents or escaped birds which had chewed large holes.

- Long handled scoops to be used for serving food instead of hands.

### Problem 5

#### *Health care and disease screening programs.*

##### Telephone Evaluation

- New purchase health checks.
- Isolation and quarantine policies.
- New bird holding facilities.

##### Video Evaluation

- Health check records showed the use of bacterial cultures and complete blood panels. No specific identification or quantitation of bacteria recovered was done to provide for a means of assigning a relative risk level.
- No psittacosis titers were screened.
- No treatment was indicated for several birds with slightly to moderately elevated white blood cell counts.
- No hospital or quarantine facilities separate from the main collection were present, placing the aviary at risk during times of ill birds or new entries.

### Problem 6

#### *Aviary light, temperature and humidity control.*

##### Telephone Evaluation

- Review artificial light cycle use.
- Sprinkler system.
- Inclement weather protection.
- Circulation system.

##### Video Evaluation

- An excellent lighting system with good quality electronic timers was in place.
- Removable weather shields were available to allow for good circulation and to prevent cold wind or rain from stressing the birds.
- A roof sprinkler provided heat relief, but only one was located centrally, giving uneven distribution of mist to different pairs.
- A central, open roof section provided for natural light and rainfall, but was also located directly over the nest boxes, where more darkness is preferred. Cold exposure in the winter was also a problem in this northern climate.

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**Problem 7**  
*Suitability of species in each flight design.*

**Telephone Evaluation**

- Overall dimensions of flights for each species.
- Aviary wire size.
- Nest box location.
- Food dish placement.
- Number of birds per flight, aviary and per square foot.

**Video Evaluation**

- The grouping of loud, raucous South American species with the quieter, more timid African greys and cockatoos was causing disruption in the breeding efforts. It was suggested to separate the species into their own isolated building for best results.
- The nest box located next to the door at the front of the flight was too near the feed dish service.
- Cages and flights were found to be only 18" off the floor. Perches and nest boxes were at waist to chest height of aviary service personnel. It was recommended to raise the cages a minimum of 18" (3 ft. off ground) to provide a greater sense of security for pairs.
- Flights were situated side by side with common wire walls. It was recommended to either separate the flights or place visual barriers between each flight to prevent needless fighting or distraction.
- It was also strongly suggested to provide nest box security by enclosing at least 50% of the sides of the nest box end to provide a defensible nesting area by bonded pairs.

These suggestions were discussed in great detail during and after the tape review among ourselves. A video camera was then mounted in the office for a response interview and each item was reviewed, examined for cause and relative importance, and corrective suggestions were made for achieving improvement. Sources of information, equipment and products were also included to ease the corrections that would be made.

The interview taping lasted about three hours and the finished tape was mailed off to Canada.

The response by telephone confirmed we had made a wise decision in dissecting the problems to the greatest degree that our geographical separation allowed for. It also prompted additional questions of greater relevance once specific, unthought-of aspects came to light.

This approach is not to be considered a replacement for on site visits by an avicultural veterinarian for the serious aviculturist. It does, however, provide for a far superior and accessible method of assisting aviculturists in their programs to improve the quality of their lifestyle and their collections.

We encourage more aviculturists and veterinarians to coordinate their efforts and explore the use of this timely tool. Nearly everyone has access to a VCR system and those who don't own video cameras can rent them at a very reasonable price.

All answers do not come easily, but this approach certainly has saved us some painful hair pulling, and our clients from blindly chasing wild geese to the tune of dollars and sense flapping in the wind. ●

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