

THE WINSTON CHURCHILL MEMORIAL TRUST
OF AUSTRALIA

Report by - Merryl Elphick - 1999 Churchill Fellow

Project - Handrearing Psittacines From The Egg to Weaning

Index

Introduction

Acknowledgements

Executive Summary

Programme

Report

Conclusions

Recommendations

Executive Report.

From - Meryll Elphick

Occupation - Station Hand *IGardener*

Address - Dunolly Harden 2587

Phone - 02 63866251 Email - yellowkakariki@yahoo.com

Project Handrearing Psittacines From the Egg To Weaning

The goals of my visit were to learn the techniques which will result in the successful captive breeding and handrearing of a diversity of psittacines and significantly those species considered by Australian Aviculturists to be more "difficult". My choice of destination proved to be even more rewarding than anticipated as Rick and his associates freely shared their insight and experience. While there are a number of books available, nothing can compare with "hands on experience" over a large number and diversity of psittacines develop the necessary "feel". With Rick's successful breeding and hand raising techniques there was no shortage of opportunity to witness and assist in every aspect of aviculture. The collection at Hill Country had also an extensive collection of softbills, hombills and carnivores and my experience also included the management and breeding of many of these unique birds.

Rick and his associates are involved deeply with the American Federation of Aviculture and CITES and are very aware of the necessity of soundly managed captive breeding programmes to provide a stronghold of every species of parrot to guard against the risk of extinction. As a result of their involvement I was able to become well acquainted with Dr Benny Galloway, the president of the AFA who was a frequent visitor to the house and was central in many discussions concerning the future of aviculture both in America and Australia. I was able to visit the Dallas, San Antonio and Houston Zoo's avian collections. The highlight of the Houston visit was a tour of their collection with the Bird Curator Lee Schoen which included the zoo's breeding colony of the rare St Vincent's Amazon.

Most of my time however was spent at Hill Country where it became increasingly evident that with proper management, diet and husbandry skills, mortality of baby parrots can be avoided. It is apparent that while the diets we feed will enable success in nearly all species, it is evident that much work needs to be done in regard to some specialized species such as our palm cockatoo. We simply do not have enough knowledge of their natural history to allow us to achieve the success in captive breeding programs that these magnificent birds deserve. It is a sad fact the Palm Cockatoo is unavailable to Australian aviculturists and yet is readily available overseas.

As Australians we are fortunate that we do not have many of the horrific and devastating diseases that unfortunately exist. Importation of exotic species must be considered very carefully as the exact nature of many transmissible diseases is yet to be discovered and does pose a risk to our native species.

I would lobby for the export of closed banded, second generation captive bred

Australian species not only to ensure the future of aviculture in Australia but to reduce the numbers of endangered species currently in the pet bird trade and to reduce the incidence of smuggling. Exportation would allow these birds, a valuable commodity overseas to be placed into breeding situations as they deserve as opposed to spending their lives as a often neglected pet. Of course allowing export would involve the compilation of rules that would protect against the possibility of wild caught birds being exported as being captive bred.

The survival of all avian species lies not only in the education of all, to the vital necessity of maintaining habitat but in an amalgamation of those with knowledge, between scientists, veterinarians, aviculturists and relevant government departments and rescue and rehabilitation groups. Just because individuals can afford to purchase a rare or endangered species does not qualify them as responsible owners. As aviculturists we have a responsibility to strive to understand the physiology and natural history of our charges and investigate through necropsy and histopathy any losses.

I have responsibility to impart as much information as possible to all those involved with our Australian Psittacines. Attendance at conventions gives others a chance to take advantage of knowledge I have acquired. Unfortunately the long distances involved make visiting aviculturists with problematic nurseries difficult. However I am achieving positive feedback from those who have phoned seeking advice. It is very rewarding for myself personally and for the Winston Churchill Trust that I am able to suggest techniques that are new to even our most experienced aviculturists. It is with immense gratitude that I think of the Winston Churchill Memorial Trust whenever I hear of a baby that is now thriving because of the knowledge I gained in Texas. As Rick and I identify problem areas in Australia aviculture we intend to co author papers for avicultural journals. We hope to have enough support to be able run handraising 'schools' where those interested will have an opportunity to experience handraising in a hands on manner over a 2or 3 day period. As more aviculturists become confident and adept and if we can increase the value of our birds to encourage aviculturists to breed Australian species, it is my hope that the genetic material in our captive bred programmes will be extensive and sound enough to allow us to re introduce species in the future where ever necessary.

Report

Housing

Housing can be decided by personal preference, demographic location or specific needs of the birds .At Hill country cages are predominately suspended with some longer classic flights with concrete floors that are more sanitary and more easily maintained

As to the birds preference in my exposure to this collection I found that - Macaws- excluding hyacinths, macaws bred successfully in suspended 4'x4'x8' The Hyo's breed happily in either large suspended or the longer classic flights

Cockatoo's- each pair needs to be evaluated on their origin, pair compatibility and knowledge of the keeper. At Hill Country they are successful in a variety of flights and suspended cages. No like species are in adjacent flights to reduce aggression problems. There is a frightening occurrence of cockatoo aggression in the States not only by the cocks but by the hens too. While theories abound, more research on the social life of cockatoo's needs to be done. A start to lessen aggression is to let these birds pick their own mates where possible. Young of the same species should be flown in large aviaries from weaning.

Amazons- are successful in suspended 3'x3'6" and 4'x4'x6" with some species seeming to benefit from visual barriers during the breeding season.

African species & Asiatic- very broadly speaking, tend to do well in any type of cage. They do not seem to be as selective in their housing requirements. Individual birds should be assessed for cage requirements. Species in this collection such as ringnecks are housed in communal flights outside of breeding season then selectively paired and transferred into suspendeds to breed. The exercise in large flights in the non-breeding season has been found to be beneficial to the birds.

Small Australian species- probably do better in classic flights but will breed successfully in suspended cages.

Cockatiels- are maintained in a separate building in small suspendeds. Cockatiels should always be kept away from the main flock as they are suspected as being carriers of polyoma.

Feeding.

Birds are maintained on a fresh daily mix of sprouted sunflower, zooprem pellets, chopped carrot, celery and oyster shell additives. Small Australian species have access to small parakeet seed as well. Fresh chopped fruits are fed daily. At risk of raising the ire of pellet manufacturers we found that during necropsies performed on parrots that were maintained on an all pellet diet that their gizzards had lost muscular tone. A diet containing 1/3 seed would appear to be necessary to maintain a parrot's intestines in optimum condition.

Breeding

Nestboxes are checked daily in breeding periods. Most eggs are pulled to incubate under chickens or similar species. The chickens favored are Cochins known as Pekins in Australia. If the space were available doves would be used as fosters for the smaller species. Pairs that are known to be reliable are sometimes left to feed their young.

All eggs are marked with their cage number and date as laid and this information is compiled in the computer in an avian specific program. This enables excellent

egg management as expected hatch dates can be automatically generated and retrieved which is essential in such a large breeding establishment and makes the management of stud books easier.

Incubation as stated, is wherever possible carried out naturally for the critical first two weeks. As this is not always possible some eggs are incubated from day one in the Grumbach incubator's available, as are Eggs that are damaged or not developing normally.

The incubators are maintained in a separate air-conditioned room in the nursery facilities. This ensures the machines to maintain the desired temperatures. Without air-conditioning, steady temperature will be impossible to maintain unless you are lucky enough to live in a perfect climate where the temperature varies not more than a degree or so. And few of us do.

The incubators are run at 99degF with humidity at 40% which is slightly lower than the humidity level previously recommended.

Eggs are removed from their respective fosters and are placed into a non-turning areas of the incubators at draw down. There they can be monitored and observed. All eggs in the machines are candled at least once a day. At external pip the eggs are taken to the nursery incubator where they will receive hatch assistance if necessary. The most common incubation problem encountered this season was upside down in shell. Most of these chicks were successfully hatched with cautious and patient assistance. A possibility for this abnormality theorized by Dr Styles was that perhaps the unseasonably hot weather was affecting the hens in the of the amount of turning the eggs received. (eggs will be turned by hens when the egg becomes to hot for comfort against her breast. It has been found that more embryo deaths and abnormal positions occur during artificial incubation because of OVERTURNING of eggs. If turning eggs by hand four times daily will suffice. Note that while eggs are extremely fragile during the first week where even a slight chilling can kill the delicate embryo that eggs in the final week of incubation can cope with an absence of warmth even over night. The same applies to eggs that are pipped.

These observations were noted in the cockatiel building The pairs were left, for the most part to rear their own young and were quite often panicked by raccoons at night causing them to desert their nests and as a result we were often raising cockatiels from eggs that had been chilled overnight. Never throw eggs out prematurely! Any egg found cold, damaged or developing in an abnormal manner should be allowed a few days grace in the incubator or under a reliable foster. An aggressive approach to hatch assistance is practiced at Hill Country and is justified by the number of viable chicks produced. In one instance a Palm Cockatoo egg which drew down yet failed to pip was successfully hatched by Rick, an undertaking which few of us would attempt. I cannot stress enough that the opportunity to assist throughout the hatch and rearing of such a vast diversity of species was an absolute gold mine of aviculture wealth. The nursery averaged between 150-200 babies per week during my entire stay. The more common species are sold at early pin- feather and quite often shipped across the country. Babies travel well at this age and suffer less stress than older birds and will readily accept a new hand feeder. Weaned babies were also shipped as far away

as Japan. Young Majors fetching as much as \$4000 US each! There is a strong demand for Australian species both in the US and abroad.

Physical Facilities.

The nursery facilities are divided into an incubation room, nursery and a weaning room, all with separate ventilation and heating and cooling systems. These facilities are well away from the adult stock which essential to the health of the incubator raised babies. Nursery hygiene is strictly maintained with clothing being changed and disinfecting of hands if any adult bird contact has been made before nursery duties commence.

Parent fed babies have their own nursery in a separate building and are consistently fed last. No incubator hatched baby comes into contact with any parent fed baby or indeed any other bird until it is of an age where the risk of polyomavirus and other diseases is reduced accordingly. Many people have suffered devastating losses through the introduction of a parent fed baby into the incubator hatched nursery.

Formula

Kaytee with the addition of peanut butter is used with great success. For all species of macaw the addition of finely ground brazil nut (the most easily digested nut) at the rate of a teaspoon per cup of formula is strongly advocated . This nut enriched formula is fed at least once a day. Macaws have a fat requirement above most other species and stunting will occur rapidly (at 4 to 5 days symptoms will be noticed) unless their requirement is met. I found we were able to feed Kaytee much thicker after about day 5 than any formula I have used in Australia to date, to the point where the fork would stand up in the mixture without the crop slowing! The chicks on a thicker formula seem to thrive and make better weight gains than a mix of the same nutritional value but a thinner viscosity. Why? Perhaps because it better mimics the parent fed diet. Kaytee should be available in Australia by February or March 2001 and is thoroughly recommended. Whilst I was at Hill Country Zoopreem trialed their new handraising mix at Hill Country. We found we were able it feed it thicker at an earlier age yet again and with the addition of peanut butter passed through the babies most satisfactory manner. Hopefully Zoopreem will also be available in Australia soon. Sour crop, which nearly every aviculturist I have ever spoken to in Australia has at some time encountered was virtually unseen during my stay which is remarkable considering the number of babies being handfed. We routinely fed before the crop emptied without ill effect. Temperature of formula is tested with the hand. The smallest babies are fed first ensuring that they receive the formula at the optimum temperature. As the babies grow older the temperature of the formula becomes less important.

Feeding Instruments

All babies are fed with a gavage from day one. Gavage feeding versus syringe and spoon feeding will continue to be debated endlessly. After my experience at Hill Country I condone gavage feeding thoroughly for a number of reasons:

1. Babies are fed more quickly with less risk of chilling the tiny babies
2. Babies are filled completely from the first feed, as opposed to the commonly used rule of thumb of feeding to the base of the esophagus. When filled completely the crop stretches more quickly there by obtaining better growth rates
3. The risk of aspiration is less because if you happen to overfill a baby while gavage feeding the fluid is coming from the crop and is expelled with a cough rather than syringe or spoon feeding where the baby's mouth is filled with fluid. There is normally an underlying problem of a weak or ill chick if a baby aspirates. The bottom line is a healthy baby rarely aspirates.
4. cleaner.
5. Syringe and spoon feeding aviculturists claim to have quieter babies and I believe this to be true but not because of the feeding instrument but rather because it of the extra time that is spent feeding. As we are trying to produce breeder birds in this instance there is no advantage. I found that if quieter babies are desired that simply taking the babies out of the buckets to feed them will produce a quiet friendly baby. I would challenge the most avid syringe or spoon feeder to feed 150 to 200 babies throughout a breeding season without losing their sanity. The gavages favored are those manufactured by Webster and are curved and have a bell shaped tip that seems perfectly designed for use in avians but in fact were designed for feeding lab rats. Syringes used are the disposable type but with a rubber O ring. The larger species once they are consuming more than 25 cc of food are fed with catheter tubing attached to a 60cc syringe. All utensils are of course soaked in disinfectant between feeds and rinsed thoroughly before use.
6. Better weights are maintained during fledging and weaning.

Bedding & Containers

Newly hatched babies are kept on soft facial tissues which are changed when necessary NOT at every feeding. As the babies droppings dry out they actually provide some traction for the babies feet helping to prevent splay legs. The rule used is if it smells change it! At 5 or so days of age the babies are moved onto carefresh a recycled paper product. Few babies eat this product but even if it is consumed it will break down and pass through the crop. It also provides an absorbent bed while also providing a good grip for the babies feet.

Any sort of container is used providing it is deep enough to prevent the baby falling out! Containers are regularly bleached as are the brooders and benches.

Identification

As each chick hatches, its container is marked with its cage number. In cases where there are many of the same species but of different clutches the bucket and each baby are marked with a colored felt pen. This can help prevent financially costly mistakes when selling out babies just in pin feather and makes

identifying bucket jumpers easy! At this time each baby is entered into the computer.

Weighing

Weighing babies is commonly practiced by aviculturist's but is not practiced at Hill Country unless trials or studies are being conducted. With experience it is possible to gauge a babies progress simply by looking at it. For novices it can be a useful guide as long as one is not overcome by the sometimes inflated charts one finds in some texts. A baby will not make enormous weight gains in the first few days of life unless it was a dehydrated hatchling. If the baby's weight is going backward there is reason for concern. The colour and feel of the skin and the behavior of the baby will be noticed before a weight loss with experience. It is important to know your species before you start hand feeding as some species have behavioral attributes that may cause concern if you are not forewarned.

-macaw babies are very lethargic and often don't wake up until after they are fed and then 'quack' for some time afterward until it dawns on them that they are full! It is easy to tell if they are receiving adequate fat in their diet. When properly fed their skin will feel like velvet, quite unlike the skin of any other species. Hyacinth babies are prone to egg yolk retention and as a precaution were not fed, only hydrated until only urates were being passed. As a personal observation I found babies showing yolk in the upper left hand portion of the belly were those most likely to suffer from yolk poisoning.

-conure babies will flip on their backs as you take hold of their heads. They also seem sometimes to be a little slower in their digestion than other species

-grey's, lorikeets and Australian red caps will sleep flat on their backs doing a very good imitation of being dead.

-cockatoo's with the exception of the palm cockatoo's were amongst the easiest and most trouble free babies(more than 14 species being bred currently) along with ringnecks though the latter tended to be flighty during weaning.

Nursery Management Day One to Five

Babies are maintained in a Rolex incubator at around 97.5f to 98.5f for the first four or five days. Once hatched humidity is not considered an issue but a small amount of water is kept in the bottom of the rolex.

As each baby hatches it's umbilicus is painted with an weak iodine solution and it is assessed as to the amount of egg yolk that is retained and how dark the belly is as to when feeding with formula will begin. If necessary hydration is provided with pediolyte until the egg yolk is absorbed. Babies that have little or no egg yolk retained are fed immediately. Babies are fed at intervals of about 2hrs excepting

the tiny ones such as Quaker's and some of the tiny Conures which are fed at 1hr intervals until such time as their crops have stretched enough to hold enough food for longer periods. Feeding commenced at 7.00am in the morning (or earlier if anyone was up!) and the last feed was given at 11.30 or so at night. If it was felt necessary the tiny species were given a feed at about 3am. This was the exception rather than the rule. Feeding around the clock is unnecessary and exhausting both for the hand feeder and the handfed! Tired people make mistakes! All babies are individuals and should be treated as such. A weak hatch or sick baby will require more attention. Babies are brooded where possible with others of the same hatch date and size thereby making brooder fluctuations less crucial and providing each other with some support. Formula thickness is accessed by the simple rule that if it can't be sucked up by a fine gavage it is too thick!

Nursery Management – Day 5 to Pin Feather

Around day five the babies are moved to the next brooder which is running at about 95degF. Formula has been thickening gradually simply by feeding the smaller babies from the top of the mix and the older from the bottom and the feeding interval is about five hours. No extra humidity is provided. The babies are now into their most undemanding period. They eat and they sleep. Any baby that whines or cries constantly has a problem. Crying babies often can be chilly so check brooder temperatures. Over heating causes crying too but the baby will be throwing itself around. Overheating for a sustained time will also cause stunting. As the babies get older they are moved into another brooder running around 93 degF. It should be noted that healthy thriving babies can cope with quite wide temperature variations with no ill effects. A baby that is fussy and cries with small temperature changes is probably ill.

Nursery Management - Pin Feather

At early pin - feather babies are transferred into large containers on a bed of care fresh with others of the same or similar species. Care has to be taken that these containers are not over crowded as babies will huddle for warmth and there is a possibility that with full crops the baby on the bottom may aspirate. Caution is advised with species selection for communal buckets as some babies can be quite rough. No extra heat is provided at this stage. Babies are given bowls of weaning food to nibble. Babies are still being fed 4 times daily.

Weaning

When fully feathered, babies are moved to the weaning nursery where they are caged and fed twice daily. They are provided with the adult diet with the addition of soft foods: pigeon mix, which is cooked until soft

corn

fresh fruit and vegetables

millet sprays

Most babies wean quickly and without incident. Any bird that is considered to be losing too much weight is put back onto a 4 daily feeding regimen until it has regained sufficient weight. Babies are allowed to wean at their own pace. Careful attention is paid to color mutations being housed with normals at this stage to ensure that breeding will not be hindered by lack of color recognition. When completely independent those babies being retained as breeding stock are placed in large communal flights.

Problems in the Nursery

Considering the number of babies raised in a season, problems in the nursery were remarkably few and there was little need to medicate the babies. Most of the problems encountered were physical ones.

- Sour crop – there was not a case of true crop stasis. Both zooprem and kaytee seem to be remarkably digestible regardless of how thick it is fed. The odd baby that was considered slightly slow in digestion (normally by me and I was considered a worry wart!) was treated with a half and half mixture of nystatin and oral antibiotic.
- Splay leg- there were a few instances of splay leg were treated by carefully taping the baby's legs together and confining it in a small tub. If caught early enough treatment only takes a few days. It was of interest that a couple of splay leg babies turned into stargazers after treatment for their legs
- Stargazers- seemed to be associated with a problem hatches. Bad cases had their heads taped up to the side of the tub those that were not so extreme benefited from being in a tub with another baby.
- Pancake babies (lie on their stomachs with their legs out behind them.) – again problem or weak hatches seemed to account for most of these cases and simply housing them with another baby seemed to provide a cure in time.
- Turned in foot- were rectified by taping and in one instance the leg had to be broken, These three babies were from two clutches from the same pair of blue and gold macaws, perhaps the result of inbreeding and they will be repaired before next season.
- Crops- there were a few cases of the crop being on the babies left hand side as long as this is recognized these babies are not a problem.
- Mandible deviations- were only seen in the palm cockatoo's, it is thought that a nutritional inadequacy is responsible for deviations rather than the commonly held belief that syringes or that the baby pumping on the side of its tub are responsible. Babies mandibles, when young are quite pliable and by placing pressure against the deviated side it is possible to return the mandible to the correct position. Dental acrylic was used to correct the deviation in one young palm cockatoo in which the condition was acute .

It is important to remember that any physical problem that involves taping or restraint is best done at the earliest possible age while the babies bones are pliable and that any form of restraint should be checked frequently to make sure that it is not interfering with circulation due to rapid growth or the baby struggling.

Disease Control In The Aviary

In a perfect world, breeder's would decide on a group of birds : old world ,new world, Australian, and then specialize in that group. All groups have diseases that while will not greatly affect their own group will devastate others. As we now have exotic species in Australia and may be importing again we need to be extremely cautious about disease. Eclectus parrots are thought to be an indication of the health of a flock. As they are susceptible to diseases from all groups, if they are alive and healthy the rest of the flock is ok!

As restricting our aviaries to a few species is some thing few of us care to do, the best alternative for the safety of our own aviaries is to buy exotic species as incubator hatched and raised babies before they have come in contact with any adult birds. They will still require a quarantine period.

It is indeed fortunate for Hill Country to have Dr Darrel Styles is a partner. It is a tremendous advantage to have an avian veterinarian available at all times with a collection as large and diverse as this one. Darrel was generous with his time and knowledge. As Darrel also has many clients I was able to assist at many necropsies and clinical procedures that will prove invaluable experience.

I saw cases of papilloma, sarcocystosis, proventricular dilation syndrome, pbfd to name a few. We were contacted by an unfortunate aviculturist in Canada who, with the purchase of a pair of birds, had introduced pacheco's into his breeding stock. The only treatment is support therapy and this unfortunate man's losses were enormous. As it is possible for this disease to be carried without visible illness for a long period of time even a long quarantine period can be ineffective. Conure's are thought to be significant carriers of this terrible disease. Survivors of pacheco's are often found to develop papilloma. The relationship between these diseases is yet to be understood completely.

Any bird that dies is necropsied. If the cause of death is not apparent tissue samples are sent out for further tests and this ensures the health and well being of the entire flock.

Avoiding Imprinting.

There is much discussion as to the viability of hand raised birds as breeders and particularly as future release birds. Each bird is an individual and should be treated as such. Imprinting can be minimized by gavage feeding and making sure that the baby is housed with it's own species. Where this is not possible the baby should at least be in contact with other birds. Caging with others from an early age allows for the baby to learn important social behaviors. As soon as possible

the bird should be housed in a communal aviary with potential mates of its own species to allow birds to select their own mates. If these procedures are followed it will give the best chance of producing breeders. Having said that, many previously human bonded birds have gone on to be paired and have proved to be prolific breeders.

Conclusions

If the nursery is maintained in a hygienic fashion (babies are not hot house flowers and common sense should prevail) babies are brooded correctly and are fed a nutritionally correct diet, few problems will arise in the nursery. If there are problems they will be physical ones. Any nursery that is encountering frequent bacterial or fungal infections or any reoccurring problem requires immediate investigation. There will be something found to be wrong, probably on a very basic level. I found no evidence of our Australian species being more difficult to rear. The Palm Cockatoo which, so few Australians have had the opportunity to rear, cannot be included in of this often held view.

A mortality rate of above 1% is not acceptable and every death needs to be necropsied and if the cause of death is not evident histopathy will be necessary. While there are excellent publications available to use as a guide, hand rearing is a 'hands on' skill and one really needs to have a large number of babies pass through your hands to become comfortable and competent.

To save the sanity of the hand rearer and more importantly the birds, it would be ideal if every person that intends to hand rear could have the opportunity to spend some time in a large breeding establishment. No baby bird should die through ignorance. Unfortunately in Australia, aviculture is still mainly a hobby and those who are endeavoring to make aviculture a business are still fairly small and do not have the resources to allow them to host extended visits from novices.

As an alternative, discussion is underway to see if it is possible to hold a hand raising school. This would involve having incubating eggs and babies of various ages and present the opportunity to learn "hands on" over 2 or three days. The first of these schools will most likely be held in Canberra. With people that are experienced and that are having problems I am finding that I can help them over the phone and response has been very good. As with any small community word travels fast and most aviculturists are aware of my trip and are taking advantage of knowledge that can help them breed and rear their birds more successfully. I am of course available to any aviculture group or individual that feels I could be of help or interest to them.

Recommendations.

American aviculture differs from Australia in that it is a huge industry. Demand is such that it can support are many such breeding farms such as Hill Country Aviaries and knowledge is freely shared between breeders and novices alike. In Australia professional breeders are few and it is unfortunate that some take the view that sharing knowledge may threaten their livelihood. Unless Australia changes dramatically and develops a large pet trade these people have to keep in mind that their clientele will be other aviculturists and with out support they may become disillusioned with breeding birds. The result, less people for them to their birds sell to, less people involved in aviculture.

We are moving into a situation where people are spending substantial amounts of money on the more expensive species when they first venture into bird keeping. A common complaint is that while people are quite willing to take large amounts of money they are reluctant to provide people with advice help them achieve success with the birds. The situation then compounds when the birds do commence breeding and people having being told that this species or that species is difficult to rear, are too apprehensive about hand rearing to take eggs from birds that are unwilling to rear their own young. I feel the best way to overcome this problem is to share the knowledge I have accumulated and encourage others with experience to do the same. As more aviculturists become proficient and comfortable with hand raising, withholding information will be of no benefit.

The ban on the export of Australian species is an impediment to aviculture in Australia. Successful breeding of psittacines is expensive, time consuming and requires much dedication and patience. Supply exceeds demand in many species and reduces the value of our birds. Many birds, unsuitable as pets will indeed find themselves in pet shops when they are unable to be placed else where. If we want to increase the demand of birds as pets, we as aviculturists must be responsible for educating the public in the care, demands and the responsibilities of being a bird owner. With Australian species decreasing in value, breeders are reluctant to spend money for veterinary services when the fees nearly exceed the worth of the bird. Much knowledge is lost to both veterinarians and aviculturists with uninvestigated illness and death.

The export of close banded, second generation captive bred birds would, by increasing the value of our birds encourage Australian aviculturists to breed our native species as opposed to the exotic species which are seen to be more saleable. This is particularly important as habitat degradation continues. We must have as wide a gene pool as possible to guard against extinction of wild populations. Increasing the gene pool of our species overseas would also be of immense value. I believe it would help alleviate the frightening occurrence of mate aggression that is currently experienced. It is difficult for aviculturists both here and overseas to understand our ban on exporting when the huge numbers of birds being slaughtered as pests is so well documented. All of our psittacines are considered to be desirable overseas not only the species that we consider to be endangered. The continuance of smuggling gives evidence to the desirability of our native species. It is sad fact that while our Palm Cockatoo is virtually unknown in aviculture in Australia it readily available overseas.

The success of aviculture in Australia will be dependant on the willingness of all those involved, in every aspect, from government to the smallest backyard breeder, to exchange the knowledge we have freely and the acknowledgement that we have all much more to learn in all aspects of the care and management of all avian species.