

The Miniature Macaws

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The Red-shouldered Macaw, *Diopsittaca nobilis*, (*Ara nobilis*—Forshaw) is also known as the Hahn's and Noble Macaw. The Hahn's Macaw is the smallest of the Macaws. It is about 12 in. (30 cm) long and weighs 5½ ounces (165 g). The Noble Macaw is slightly larger being 13½ inches (35 cm) long and 6⅞ ounce (190 g) in weight. The Hahn's is much like the *aratinga* conure. The Red-shouldered has a blue forehead and forecrown. The bill is dark gray/black. (The Hahn's upper mandible is dark gray/black while the Noble has a horn colored upper mandible.) The body is generally green overall, more yellowish on the lower underparts, the carpal edge bend of the wing and greater under wing-coverts are red. The primaries are green. The underside of the tail is dull olive-yellow. The naked face patch is white. The feet are dark gray, the iris is dark orange. The Red-shouldered is found in large areas of Guianas and eastern Venezuela to southern Brazil, southeastern Peru and northern Bolivia. In the wild, the breeding season occurs between February and May, possibly as late as June. Up to four eggs are laid. It is common both in the wild and aviculture.

The Yellow-collared Macaw, *Ara auricollis*, is basically a green bird, the forehead, crown and ear coverts are brownish-black. There is a yellow band on the nape. The primaries and primary-coverts are blue, the under wing-coverts are olive-yellow. The bill is black with a horn colored tip. The facial skin patch is white, the iris is orange. The feet are pale yellow. The upperside of the tail is blue becoming brownish-red, the underside is olive-yellow. The length is 15 in. (38 cm) and the female

weighs between 223-345 grams and the male weighs 256-308 grams (8¼ ounces). It is found in central Brazil, Bolivia, Paraguay and Argentina. It is common both in the wild and aviculture. The breeding season in the wild begins in December. In aviculture it breeds readily, a clutch of three to four eggs is normal, incubation period is 26 days.

The Illiger's Macaw, *Ara maracana*, is the most colorful of the available miniature Macaws. The forehead is rose red, the head, nape and lower cheeks are greenish-blue with a darker blue on the crown. The bill is black. The body is generally green with red patches on the lower back and middle abdomen. The primaries are blue. The rump is green tinged with olive. The upperside of the tail is blue becoming reddish-brown toward the base, the underside is olive-yellow. The naked face patch is pale yellow. The feet are yellow. The iris is orange. It is 15½ in. (43 cm) long and weighs 9 ounces (250-280 g). It is found in Brazil, through Paraguay to north eastern Argentina. It is scarce in the wild and in aviculture. Nothing has been documented about breeding in the wild. In aviculture breeding success has been somewhat sporadic. Once a pair produces, it generally continues to do so. A clutch of three eggs is laid and incubated for 26 days.

The Blue-headed, *Ara couloni*, has a body that is mostly green overall, more yellowish on the underparts. The forehead, crown and sides of the head are blue. The bill is gray-black, becoming horn colored on the culmen and at the tip of the upper mandible. The primaries are blue, edged in green. The tail is blue with a dusky yellow under tail. The facial skin patch is gray.

The feet are flesh colored to pinkish. The iris is yellow with an orange-red outer ring. It is 16 in. (41 cm) in length. It is found in eastern Peru, the western most part of Brazil and northern most Bolivia. It is common only in fairly restricted localities.

The Chestnut-fronted, *Ara severa*, is also called the Severe Macaw in the States. There are two sub-species. *Ara s. severa* is 18 in. (46 cm) long and weighs 307 to 387 grams. *Ara s. castaneifrons* is 19 in. (48 cm) long and weighs 12½ to 14½ ounces (360-410 g). The Severe is basically green with a naked white cheek patch lined with fine black feathers. The forehead, cheeks and chin are dark reddish-brown. The crown is washed with blue. The bend and edge of the wings are red. The primaries are blue. The bill and feet are gray-black. The upperside of the tail is reddish-brown with a green base and blue tips, the underside is dark orange-red. The iris is yellow to orange. The Severe is common to numerous over a large range from eastern Panama, western Colombia to eastern Colombia, and Venezuela and Ecuador, and eastern Peru to northern Bolivia and northwest Brazil. Breeding begins in January in the wild. It is common in aviculture. Breeding commences in late spring, two to three eggs are laid and incubation is 26 days.

The Red-bellied Macaw, *Ara manilata*, is probably the most unusual looking of the small Macaws. The forehead and cheeks are greenish-blue. The body is generally green with an overall olive tinge. The lower abdomen (between the legs) is reddish-brown. The primaries are blue, edged with green. The upperside of the tail is green, the underside is olive-yellow. The naked face patch is light yellow. The feet are gray,

the bill is black. The iris is dark brown. It is 18/19 in. (48 cm) long and weighs 10 ounces (290 g). It is distributed over a large area along the Andes mountains in southeast Venezuela, Colombia, Peru and Bolivia. It is also found in Trinidad, Guyana, French Guyana, Surinam and Brazil. It is common to numerous in the wild but is very skittish and difficult to find. Also it has not been attractive to aviculturists. Breeding begins in February in parts of its range to as late as September in Trinidad and Brazil. It is uncommon in aviculture, mainly due to the difficulty of acclimatization, frequently dying without any discernible cause. It has bred infrequently in aviculture. It prefers a fairly dark location for a nesting site. Three to five eggs are normally laid with a 25 day incubation period.

The Cuban Macaw, *Ara tricolor*, is extinct. Beyond a doubt, it was the most colorful of the small Macaws. The overall color was red, paler and more scarlet on the underparts. The crown tinged with yellow goes from orange to orange-red down the neck. The rump was blue, the bill blackish with a lighter tip. The primaries were a dark blue. The upperside of the tail was red tipped with blue, the underside brownish-red. The face patch was probably white. The feet were brownish. The iris was yellow. It was 18/19.5 in. (45-50 cm) long. It was found only on the island of Cuba. The last known bird was shot in 1864. Several birds were kept by zoos but there is no record of any breeding success.

The Spix's Macaw, *Cyanopsitta spixii*, is the most endangered of the remaining small Macaws. There are probably 30 or less birds known to exist, none in the US. For the last five years only one male has remained in the wild. Early in 1995 a female was released and the latest reports indicate the two have bonded. Fall will be the earliest they will mate. The general plumage is a dull blue with a faint greenish tint to the breast and abdomen. The bare lore and cheeks are a dark gray. The underside of the tail and wing-coverts are dark gray. The bill is blackish, the iris is pale yellow. The feet are gray. It is 22 in. (56 cm) long and weighs 11.5 to 13.5 ounces (332-389 g). It is found only in a remote area of northeast Brazil. It has bred in aviculture with the latest and most success being in the Philippines.

Miniature Macaws belong to the family, *Ara*. The Hahn's, Noble, Yellow-

collared, Illiger's, Blue-headed, Severe, Red-bellied, Cuban and Spix's make up the miniature Macaws. They range from the smallest 12 in., Hahn's to the largest, 22 in., Spix's Macaw. They are mostly green in color, with most of the other colors appearing on the head, wings, underwings and tail. What they lack in color they make up for with their charming personality. Anyone who has kept a Yellow-collared Macaw can attest to this. The other miniatures are close behind the yellow-collared in personality.

There are many benefits to keeping the miniatures. Miniatures are less expensive on the whole than the larger Macaws. Their smaller size permits smaller a cage. Their voice is not as deep, loud nor carries as far, although, the smaller Macaws can be quite noisy. Their personality competes with the larger. They can talk and do tricks, the key is patience and early training. Many handfed babies will be saying one or two words before they are weaned. They are colorful even though their basic color is green.

First let me describe my set up. It may surprise you that they can survive in temperatures as low as 15°F. I live in the foothills of the Sierra Nevadas in Northern California. The altitude is about 1600 feet. In the seven years I have lived here, the highest temperature was 116° and the lowest 15°F. We have had as much as six inches of snow at a time. Cold weather arrives about November, with February frequently being the coldest month. Warm weather arrives in late April, early May. Hot weather arrives in July with the hottest month being August. The weather is quite variable; the daily high temperature can be 90° to 100°F for as much as a week or two in January or February. This past spring was unseasonably cold, as much as 15-20°F below normal. Our rainy season normally begins late October and ends in April averaging 20 inches of rain.

All the birds are kept in unheated buildings that are open to the elements. The buildings are garage-like structures with no insulation or finishing on the inside. The roofs have openings that allow ventilation and, when kept uncovered in the winter, allow the rain in. They have concrete floors. There are no windows. There are misters inside to cool the air and provide humidity. This winter we had double our normal rainfall and humidity has been a problem.

All birds are kept in suspended cages. The aviary has 10 foot walls. The cages hang down two feet from the rafters and are four feet off of the floor. The cages are "L" shaped. Each cage is 4 ft. high. The long side is 10 ft. long. The narrowest end is 27 in. wide and the widest part is 42 in. Each cage has two perches, 27 in. and 42 in. The boot of the "L" is 2 ft. deep. The nest box is hung on the outside of the boot with the entrance hole facing away from foot traffic (toward rear wall) for maximum privacy. Two cages form a U shape. A solid sheet metal barrier separates both the long side of the cage and the short nest box area from the adjoining cages.

The basic needs are few. Besides shelter, food and water must be provided. Birds should have fresh water daily and more frequently if possible. Germs breed readily in a damp environment. Most diseases occur because of dirty water and damp conditions. Therefore it is imperative that the container and water be kept as clean and fresh as possible. A variety of foods are fed. Dry seed should comprise about 40% of the total diet. I feed a seed mixture that includes sunflower seed, more in the winter than in the warm months. The remainder of the diet consists of fruits, vegetables, nuts, cheese, etc. The food should be fed daily. I do not use hopper type feeders. The fresh fruits and vegetables should probably be removed within four hours of being fed. Again moisture is the problem. The longer the moist food is kept with the birds the more bacteria that will be allowed to multiply. Dry food could be kept longer but by changing it daily I control two things. First, rodents cannot contaminate the food as easily and second, I feed only the amount I want the birds to consume. I am able to control their weight much easier. It is far easier to avoid a fat bird than it is to get a bird to lose weight. I no longer feed sprouted seeds due to the bacterial problem. After 20 years my veterinarian convinced me that I am contaminating my birds needlessly. I just couldn't keep the sprouts germ free by soaking in bleach water or using calcium propionate. I also do not use additives in the water. Just feel the inside of the water bowl a couple of hours after you have added something to the water. It will already begin to feel slimy. The ideal breeding ground for germs. When I want the birds to have additives in their diet, I mix it into

their wet food, fruits and vegetables. Generally, the birds will eagerly take the additives along with the fruits and vegetables once they have acquired a taste for them. I add a good quality vitamin every two to three days. I add dry wheat germ at the beginning of the breeding season. I add dry calcium to hens that have been heavy egg layers or have a known calcium problem. I have used bee pollen to encourage breeding. All this is added to the wet food and generally ingested. Because the fruits and vegetables are moist I do not have to add additional liquid to get the additives to stick. If these additives were fed with the dry food, they would remain in the bottom of the food dish. If given in the water, the taste change seems to be more upsetting to the birds and of course the sliminess will set in within a couple of hours. I start with a small amount of wet food and increase it as the birds consume more of it. The amount of food they eat varies by weather, season and breeding condition. I feed my birds once a day, in the morning, because of my personal schedule. The earlier the better. My birds quiet down only after they have been fed. My wife and the neighbors are appreciative of my consideration. I know of others that feed twice a day. Generally they feed the dry food in the A.M. and the wet food in the P.M. When I have the time, I will try feeding twice a day and observe the results. The afternoon feeding should be early enough that the birds have plenty of daylight left to consume the food. Macaws like to eat fairly early and bed down (roost) before it gets too dim. (My cockatoos stay active and eat later than the Macaws.)

Breeding

Most of the birds available today will be domestic raised. Any wild caught Macaws available for sale will be older birds since imports have been closed for over two years; exports from Brazil were banned about 10 years ago. Domestic raised birds make good breeding stock taking all things into consideration such as parentage, how the bird was raised, current health, etc. The only drawbacks to domestic raised breeders are 1) handfed males are alleged to make poor breeders; 2) the bird can become quite vicious especially in a breeding condition. For me the jury is still out on whether handfed males make poor breeders. I believe it may be

more the individual bird and how it was raised than a true generalization of all male, handfed birds. Domestic and certainly handfed birds have lost their fear of humans and therefore can become vicious. I find this true of Yellow-collared, seldom with Severs.

First you must start with a pair, a female and a male. I strongly suggest one have their birds sexed. There are several methods available. I recommend surgical, laproscopy, because the results are immediate; the sexual maturity can be determined; the internal organs are visible; and you can get a general idea of the bird's general condition; some internal problems can be observed. There is some risk involved as with all surgical procedures. Blood sexing (chromosomes) is less invasive but requires more time to get the results. You must mail the blood sample to the lab and wait for the results. The advantage of this procedure is that a young bird can be tested much earlier and with less stress than by laproscopy but it tells you nothing else about the bird.

DNA testing is now available. It is unique to the individual bird, a chromosome fingerprint. It can be used to ensure that closely related birds are not bred together. DNA is hard to tinker with and thus could be used to positively identify a bird. It could be used to establish a pedigree, much like those for dogs, so that championship lines could be established, etc.

Aviculture

The Cuban Macaw has been extinct for over 100 years. The Spix's is endangered and rare in aviculture. None are known to exist in the United States. The Blue-headed is rare. Blue-headed have been kept in the U.S. I am not aware of any that are currently in the U.S. The Red-bellied and Illiger's can be found but breeding success is somewhat sporadic. The Hahn's, Noble, Yellow-collared and Severe are common aviary birds with a fair breeding record established. Ten or so years ago you could get these Macaws for \$100 to \$150 per bird. Today they are much more expensive but available. Even with a species of bird that is still fairly common in the wild and captivity, there is a need to manage the species so that our children's children will have the benefit of knowing them. There are more than enough examples of plentiful species being decimated to the point of extinction.

Aviculture would be well served if

each breeder kept five pairs, of separate blood lines, of the same species rather than one pair of birds of five different species. Five pairs would provide a broader base for observing and documenting the traits of each species. A breeder could expand his collection without pairing up related offspring. With five pair, the loss of one bird or one pair would not devastate the breeding program.

Record Keeping

Birds need to be identifiable. Memories are short. Tattoos, open and closed bands, DNA and microchips are some of the methods of identifying individual birds. You may have to use more than one type on a bird. The most accurate method of identification is DNA. This is like a fingerprint. No two birds are alike. With DNA you can tell how closely related your stock is. Unfortunately, with DNA alone, you cannot look at the bird and see any external identifiable characteristics, such as is it a female or male, or what cage it came from, etc. A tattoo in the wing web, commonly used for denoting sex, is not of much additional value. Males are tattooed in the right wing web, females in the left. You must capture the bird to examine the tattoo. Tattoos fade over time. Microchips implanted in the breast need to be read by a scanner. Again, without a band nothing is visible, and the bird has to be caught up to read the information from the chip. Open bands can be put on adult birds; can be placed on the appropriate foot for sex identification; can be seen from a distance. The disadvantage of open bands is that they can be manipulated; removed from one bird and put on another. Closed bands are put on young birds. If the appropriate size is used, the band cannot be manipulated after the birds have matured. Bands must have number inscribed on them so the bird can be traced and matched up with the other records you keep. A record keeping system should be kept simple. If it is too difficult or time consuming it won't be kept up. There are data base software programs available that permit one entry to be posted to several records. There has not been a lot of demand, so the software available is expensive and not as comprehensive as one would like. Record keeping is important because your memory will fail you. Information that should be recorded consists of the species of bird, sex,

date of birth, parentage, prior history, type of identification, cage, mate, breeding record, offspring, sales information, and general history such as any medication given, problems noted or unique happenings. A good record system will allow you to analyze each bird, its reproductive history and identify any trends.

Network

I strongly encourage individuals to become involved in the avian network; join a club, subscribe to magazines, join a consortium, join a stud book program and just get to know as many aviculturists as possible. Expose yourself to as many viewpoints as possible. Keep an open mind. Have trusted associates you can call on when you have a question or are just puzzled. One can always learn something new that will be helpful by just listening to others. Listen to others who keep birds different from the ones you keep. The person who breeds owls may have the answer to your nesting or territorial problem; softbills may make you aware of dietary problems such as iron deficiency; cranes may alert you to the types of and need for courtship and display in successful breeding; endangered species will make you aware of DNA and the need for bio diversity; hornbills stress the need for monitoring your birds. I have listened to lectures on all of the above and I have come away with information that I could use or raised questions in my mind and got me to wondering what would happen if I tried that; would it solve the problem I am having with whatever? I attend any lecture that I can. Most of them are interesting and I come away with information that either I can use or it gets me to thinking how I can use or adapt the information so that my birds will be better off.

There is a warning I must put here. Do not change your practice drastically just because an "expert" says to do this or "never" do that. A lot of thought should go into any decision before changing any procedure you are currently using. Birds are creatures of habit and can be upset by the slightest change. God gave us all a brain. We must use it! Listen to what people say, analyze it, does it conflict with other information you have received, does it seem logical, is it practical, what do I hope to accomplish? After doing all that, sit back and wait a couple weeks before

making any changes. Unless it is a matter of life or death, you have the time to contemplate all of the above. You may just save yourself some money and a breeding season. Also, before you implement a change, make sure you understand the complete procedure. I am reminded of the person who heard a speaker say they used a certain additive to bring their birds into breeding condition. They began using the additive and were amazed at how successful they were in getting eggs and chicks. Unfortunately they were not told that the additive should be discontinued after the hens were sitting. They had high losses of discarded eggs and bloodied

chicks in the nest. The parents were ready to recycle before they had completed the current cycle, the eggs and babies had to go, for the next clutch.

What I have given you is what I am currently doing at my ranch at this time. Some of this may conflict with what I have said previously. I do not have 100% breeding success. Therefore I still have things to learn. I try to make any changes gradually, so the birds can adjust without major shock and so that I can monitor and measure any effects the changes may have. I do not pretend to have all the answers. By sharing information we may move closer to that 100%. ➤

Loro Parque Foundation Supports Census of Red-tailed Amazons in Nature

The Red-tailed Amazon (*Amazona brasiliensis*) has been a rare bird with a restricted wild population for many decades, at the end of the 1980's it was estimated that the wild population at that time numbered only 3,000 and was declining. This species survives from a small coastal region of São Paulo and adjacent Paraná states, in Brazil, where it migrates daily between the Atlantic forest feeding areas and the Mangrove forests which provide the roosting and breeding sites for this species.

A principle figure in the study of the Red-tailed Amazon in the wild has been Pedro Scherer Neto, who has been working with this species since 1982. He has been able to establish accurate estimates of the remaining wild population size by carrying out a census throughout the habitat of the species natural distribution. The most effective area to survey the Red-tailed Amazon is by undertaking a census of birds at known overnight roosting sites, which Pedro Scherer Neto has been doing for several years. In 1994 he experimented with the building of two observation platforms at forest canopy level close to known roosting sites, the result was extremely effective

with much improved census observation becoming possible. The platforms also provided a good opportunity to undertake biological observation of this species as an additional benefit.

In the beginning of 1995 we received a communication from Pedro Scherer Neto who asked if the Loro Parque Foundation would be willing to fund the costs of two more observation platforms to further aid the census of the remaining wild population. We have been happy to provide \$1,500 (US) to cover the material costs of these two additional observation platforms, with the construction being undertaken by the staff of the Natural History Museum.

The result of this project should be improved census observation of the Red-tailed Amazon which is regarded as essential in the future close monitoring of this species. With a local education programme already running and local people being encouraged to act as guards for known roosting sites, then it can be hoped that the remaining wild population will remain stable and can be more closely studied in the next few years. ●