

# The Cuban Amazon and its subspecies

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Considered one of the most beautiful Amazons, the Cuban has always fascinated the selective aviculturist. It is thought to be the first neotropical parrot brought to Europe by Christopher Columbus, and the Lucaya Indians, inhabiting the Bahamas, were the first "New World" people encountered by Columbus. They kept *A. leucocephala bahamensis* both for food and for pets. Carbon dating of bones of this Amazon found in caves on New Providence, place its arrival there as recent as 2,000 years ago. It has long been our opinion that Arawak, Caribe and Lucaya Indians may have played an important role in the distribution of psittacine and reptile fauna throughout the Caribbean. There is ample evidence in sixteenth century records of early Europeans that these original islanders kept both reptiles and parrots.

When the Spanish arrived in Puerto Rico, they found the Tiano Indians using boats that measured up to 150 feet in length and they exhibited expert seamanship. Recent mud slides in Puerto Rico have revealed a stone ball court and jade artifacts identical to those fashioned by the Maya of Central America. There can be little doubt these seafarers of the extreme eastern Caribbean engaged in commerce with their mainland counterparts. If they traded for jade, it is highly possible they returned home with birds and reptiles, seeing that such fauna played an important function among the Maya. The latter's advanced civilization would certainly have impressed the Tianos to the point of emulation of these more affluent people. We discovered semi-fossilized bird bones in a cave (1976) on the southern coast of Cayman Brac in conjunction with kitchen middens left by early Indians. When analyzed by the Cayman Museum (now under development), they will perhaps disclose some parrot bones of *A. leucocephala hesternia*.

If we consider the implications of our theory, we may be inclined to say

insular speciation can occur more rapidly than previously thought. The laudable research in progress with DNA should presently disclose the history of all living things. Captive breeding various *leucocephala* into the fourth generation, coupled with nearly two decades of field research of West Indian species, has placed us in a rather unique position to observe how rapidly morphology can change.

## The Cuban People and Their Parrot

Growing up in Tampa exposed the senior writer to the many Cuban Amazons kept by Cuban immigrants who comprised a large segment of Tampa's multicultural. These people brought their dearest possessions with them when they left the Island. The parrot represented a link with their beloved homeland. When traveling through the Latin quarter of Ybor City in the 1940s, it was not unusual to see this Amazon in cages hanging on porches and balconies. As the original owner passed away, the parrot became a legacy to his heirs. The younger generation, being born in Tampa, did not always appreciate the significance of their parents' pet. Consequently, the only pet shop in Tampa often had this Amazon for sale at reasonable prices due to its common availability. Because of this, my mother purchased one of these cast-offs when I was age 14 (1946). Thus began an ongoing romance with this species and all the Caribbean Amazons, which has now lasted 44 years.

From the Cuban people of Tampa, Miami and Key West, I learned much of the lore and history of *leucocephala*. This data has been faithfully reported to aviculturists since 1967. Some of the Cuban immigrants made regular trips back to the island of Cuba via the ferry boat that sailed three times a week between Key West and Havana, until the revolution of 1959. Upon returning to the United States, quite often a parrot had somehow managed to stow away in a

lady's handbag until diplomatic relations made such trips impossible. Notwithstanding, U.S. Customs confiscated 48 Cuban Amazons when they seized a cigar boat in the Florida Keys in 1988. There were few drugs found on the boat, but many requests for prescription medicines, letters, and the parrots destined for Cuban people in Miami. Greg Moss and I were called to testify on behalf of U.S. law enforcement. We were shown the parrots which were being housed at Miami Metro Zoo during the trial. All were five years to above 20 years of age. Each cried out for attention when we spoke to them in the language they were accustomed to hear. This incident demonstrates the Cuban people's continued interest in this parrot from the "Pearl of the Antilles." The case was won by our

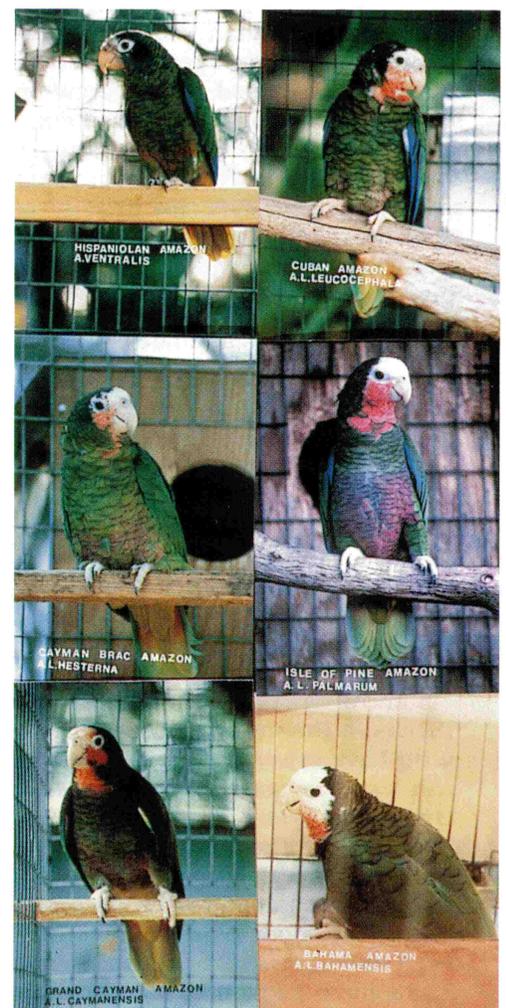


Photo by Ramon Noegel

Composite picture of all representatives of *Amazona leucocephala*. The nominate race, known as the Cuban Amazon (*A. l. leucocephala*), is at the upper right. The main difference between the subspecies is the amount of red coloration on neck and throat. An unrelated island species Hispaniolan Amazon is shown at the upper left.

government and two of the four defendants fled the country before sentencing. However, the disposition of the Amazons in question seems to be clouded in uncertainty (Ron Johnson, 1990, per. comm.).

For the most part, the average Cuban Amazon kept in Tampa as a pet was treated as a favored member of the family and had table privileges at mealtimes. These parrots thrived on the same food as eaten by their owners. When we began collecting these birds in 1965 (and for the next decade), their excellent health gave evidence of the nutritional value of black beans, red beans, garbanzo beans, gandules (peas), northern beans, English peas, rice, plantains, fish, pork and chicken, not to mention Cuban bread and butter topped off with Cuban coffee. Since much ado over the avian nutritional value of beans (pulses) was forthcoming in the eighties, this bit of lore might be of interest. Actually, senior aviculturists from California tried to turn us on to sprouted beans for our parrots as early as 1965 (Hart, per. comm.).

The majority of the Amazons we collected from the Cuban people in Tampa, Miami and Key West (1965 - 1975) were above 20 years of age. They were in good health but they still had to be conditioned to accept a mate, something they had been deprived of since juveniles and they also had to learn how to breed, a behavior that begins in the first year with our many captive-reared young. In some cases, it required several years to bring these old pets into breeding condition, but once they began they proved the best of parents and continued to produce offspring until the last year of their lives. The greater number of these original Cuban parrots have died but three still remain, representing 25 percent of the great-great-grandparents of the fourth generation having been bred at Life Fellowship for the past three seasons. 1990 should see our fifth generation of *A. l. leucocephala* being realized. To my knowledge, this is an unparalleled achievement in the genus *Amazona*. We reported that old cage pet Amazons *do make good breeders*, something thought impossible only a few years ago (Noegel, 1979).

#### History in Aviculture

Rutgers (1965) mentions a captive breeding of the Cuban Amazon as early as 1922 in Japan. However, the

first documented breeding occurred in England under the supervision of the distinguished aviculturist Edward J. Boosey in 1956 (Boosey, 1962). In 1959, a pair of the offspring from Boosey's two breeding pairs was imported into California by Herb Melvin. About 1963, this pair produced fertile eggs while on loan to another aviculturist. For some reason, a disagreement ensued, resulting in Melvin removing both his birds and the four partially incubated eggs. He placed the eggs in the capable hands of Velma Hart (McDaniels) who hatched them in her Lyons incubator and hand reared the chicks. This caused Melvin to place the pair with Velma, who continued to breed from the pair until 1967, when Melvin decided to move the pair to his home (Hart, 1967; Melvin 1968, per. comm.). A total of 17 birds was reared from this pair in five breeding seasons.

Two years after my first Cuban parrot arrived (1946), we were able to purchase another. The two were a pair. At the time (1949) no one bred large parrots in the Tampa Bay area, consequently no attempt was made to breed our pets. This did not keep them from creating a nest from the newspapers on the bottom of their homemade cage and producing two eggs. Never dreaming they were fertile, my mother and I indulged their determination, which prohibited the cage from being cleaned. This, in turn, caused a foul odor to emanate from the cage, and after two weeks my father (whose word had to be obeyed) insisted it be cleaned. In attempting to comply, coupled with the pair defending their most unlikely nest, both eggs were broken, disclosing two very viable embryos. Although we did not hatch these eggs, the incident taught me a valuable lesson which I have sought to pass on to aviculturists for over 22 years, i.e., if birds are happy in their captive environment and in good health, they will breed under the most adverse conditions imaginable. We could relate many stories to bear out this truth but the following one is my favorite:

In 1983, we achieved the first world captive breeding of the Dusky Pionus (*Pionus fuscus*). The year before, an eminent pionus breeder complimented us with a visit and informed us our nest boxes for our three pairs of *fuscus* were too shallow and we should never expect to breed



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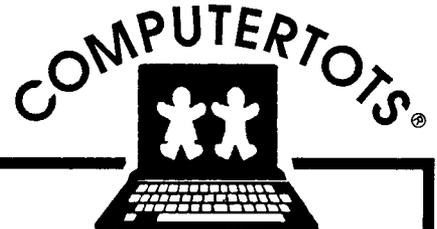
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them. Fortunately, the pious didn't know this and all three pairs bred, two in 1983 and the third pair in 1984. They were happy and content, did not feel threatened and therefore could not see any reason not to nest and rear their young in these boxes.

It should be pointed out that Greg Moss and the senior writer spent three months in Central America (1978 - 79) researching parrots. This trip was funded by Dr. Bernard M. Levine for the purpose of a census of the juvenile parrots being sent to foreign countries, and to report the conditions under which these birds were being kept (Noegel, 1979). Our prior field work in the Caribbean made certain observations possible. We learned that parrots choose the most unlikely places to nest, which are determined by the various extreme environments they inhabit. Amazons will conform to almost any condition. On the barren west coast of Central America, they nest from October through December. On the lush green east coast, they nest from January through April. These seasons vary with the area, rain, food availability, etc. Parrots are adapters. We examined nests on the Cayman Islands that were so small a man's fist could not be extracted. Still, chicks were fledged from such nests (Noegel, 1976). Therefore, when learned visitors shake their heads in wonder that we use standard nest boxes and *still* have excellent success with *all types* of psittacines kept here, I marvel that Mother Nature doesn't recognize the rules set up by these authorities.

### The Isle of Pines (now Isle of Youth) Amazon *Amazona leucocephala palmarum* (Todd, 1916)

If visitors ask what is the difference between the Isle of Pines Amazon and the nominate species, I quickly reply \$25. In 1946, the going rate for a parrot from Cuba was \$50. One from the Isle of Pines commanded \$75. *The Cuban people recognized the latter as being more beautiful in color.* They were willing to pay half as much again for *palmarum*. I am perfectly aware there were ornithologists (Peters, 1928) who argued that there is no difference between the two but they, no doubt, never saw living specimens to compare. Neither were they acquainted with these parrots, as the senior writer has been for over 40 years, and they may not have had the

opportunity to examine all the five representatives still extant in live condition as we have.

If one observes *Amazona leucocephala leucocephala* in its eastern range of Cuba, say in Oriente Province, and then specimens from the extreme western range of Cuba, Pinar del Rio (or the adjacent Isle of Pines), one is confronted with an extreme morphogeny (Barbour, 1923). Kenneth C. Parkes agreed with Barbour's assessment of there being *two* representatives: "Comparison of a total of 26 Isle of Pines specimens with 13 from the mainland of Cuba indicates that Barbour was essentially correct in his division of *Amazona leucocephala*, except that I would place birds from central Cuba (Las Villas eastward) with the nominate race. Two specimens from Pinar del Rio (Peabody Museum) closely resemble the Isle of Pines series except that the abdominal patch is slightly paler. *The two series would certainly be considered separable by most current subspecific standards.* The size and depth of color of the abdominal patch (larger and darker in *palmarum*) is the best character; the deeper throat color attributed to Todd *palmarum* seems also to be valid but difficult to assess in worn birds (skins). The darker green, supposedly typical of the Isle of Pines birds, is only an average character; the darkest green individuals are *palmarum* and the palest *leucocephala*, but there is more overlap than in the other characters mentioned. In summary, I advocate the reinstatement of *Amazona leucocephala palmarum* (Todd) for the birds of western Cuba and the Isle of Pines" (Parkes, 1963).

In 1988, we closely examined the 48 birds being kept at Miami Metro Zoo. They had obviously been collected from eastern and western Cuba. Some had patches of vinaceous but *none approached the extent of this color that ours display, whose ancestors are known to have originated from the Isle of Pines.*

The nominate species from eastern Cuba, as might be expected, closely resemble *A.l. babamensis*. The white on the crown is more pure and extensive, the throat red is pink or rose color and uniform, lacking the green flecking seen in western birds. In both birds, there are variations to be found. Morphology seldom conforms to man-made standards.

To add to the confusion, the red factor in this parrot continues to

develop or burst forth about every five years after the individual reaches ten years of age. This often manifests as a dappling of red across the mantle or on the back of the head, nape and sometimes on the breast. With age, such specimens perplex the unintentioned into believing the bird to be of a different subspecies. The problem is compounded by the occasional hatching of an individual that feathers out in this profusion of red. One of the original great-great-grandmothers of some of our *palmarum* offspring had a heavy line of red down from the throat to the vent and a red mantle on the back. Some of her offspring twice removed are showing signs of this extensive red color. We've only noted this in a specimen of *A.l. babamensis* photographed in the wild by Rosemary Gnam; the photo was recently sent by her to us (1990). Such birds are not the norm and are indeed quite striking to behold. Again, nature often goes rampant when painting these parrots.

We have a total of 14 first breeding awards issued by the American Federation of Aviculture. The first of these was for the Isle of Pines Amazon (1979). Five of the 14 awards are for island Amazons: *A.l. palmarum* (1975); Jamaican Black-billed Amazon, *A. agilis* (1978); Cayman Brac Amazon, *A.l. besterna* (1981); Rothschild's Yellow-shouldered Amazon, *A. barbadensis rothschildsi* (1982); and the Grand Cayman Amazon, *A.l. caymanensis* (1974).

### The Grand Cayman Parrot

*(Amazona leucocephala caymanensis)*  
Our initial field survey of this subspecies occurred in April 1971 (Noegel, 1974). With the aid of Dr. J. Lear Grimmer, former director of the National Zoo, we agreed that the total population of this endemic parrot did not exceed 200 birds. We were permitted to remove eight juveniles for a captive breeding program, and first bred this Amazon as already referenced in 1974. The study we made located the parrots in the central and eastern districts of the island. They were difficult to see, even in the back country. In canvassing the human population, we found only 18 parrots kept as pets. At this time, the mosquitoes were unbearable, but a few years later a mosquito control program neutralized these bloodthirsty insects, which resulted in a population explosion of the parrots. Today they number above 1,000 and about 200 are

kept as pets. We were the first aviculturists to report chick mortality caused by mosquito bites. Hence, our reason for removing chicks for hand feeding during the rain season when mosquitos multiply. These flying pests seek the cool interior of nest boxes or nest holes in the wild when the sun is bright. Unfeathered chicks can succumb to multiple bites within 24 hours.

Due to the opening of two pet shops on Grand Cayman, there has been a rash of escaped exotics. Among these is the Indian Parakeet (*Psittacula eupatria*) which has multiplied and may be seen in flocks up to ten or more. We fear this free breeder will soon invade the limited nesting habitat of the endemic Amazon. Their size and aggression could easily drive the more mild mannered *caymanensis* from its nest. We have, for over a year, been working very closely with the National Trust of the Cayman Islands to reintroduce some of the seriously endangered Grand Cayman Blue Iguanas (*Cyclura nubila lewisi*) now only being captive bred here at Life Fellowship. Through the director, we learned that the Grand Cayman Parrot has just this year (1990) been removed from the gamebird list which allowed it to be shot along with doves and White-crowned Pigeons.

We have sent 14 pairs of our captive bred *A. l. caymanensis* to aviculturists and zoos but none have, to date, been able to captive breed this difficult subspecies. Visitors who are allowed to see Life Fellowship's collection think it all seems so very easy until they try to duplicate our breeding success. We have bred *A. l. caymanensis* into the third generation.

#### The Cayman Brac Amazon

##### *Amazona leucocephala hestern*

Not only is this parrot the Lilliputian of the *leucocephala* series, but its habitat is considered the smallest known area to support an Amazon. The entire island is about 20 km. in length and 4 km. at its widest point. There are no native parrots found on Little Cayman with the exception of two escapees, which were released by two of the 15 human inhabitants. Both have survived for three years and we do not know if they are, in fact, a pair. They are supposed to have been purchased on Cayman Brac. There is also a Grand Cayman parrot kept at liberty at the Pirates Point

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Resort. This may lead to the possibility of a breeding pair being formed on Little Cayman. These two islands are separated by only seven miles of sea.

The Brac parrot has the red confined (in the majority of specimens) to the cheeks and a spot under the beak. The white is restricted to the frontal part of the crown. In our opinion, this bird has the most fixed characters in morphology of this group. It also appears to be the most endangered. We estimate less than 50 surviving in the wild and seven kept as pets. Due to the inbreeding in this subspecies, we have only been able to breed it into the second generation. Chicks are readily hatched but appear to be weak and difficult to rear. We brought out a total of three pairs in 1975 and 1976. Of these, only two pairs have successfully bred here. Because of the steady decline in the wild and the fact we have the only breeding *besterna* outside their habitat, we have begun to pair offspring with specimens of the nominate species to save this distinctly defined subspecies. This is a common practice among zoos possessing limited bloodlines and is not considered hybridization in the sense that *it is not the crossing of two different species*. However, a well known zoologist/ornithologist, upon being told by us of our plans to save this unique bird by this method, sallied forth to broadcast it to the extent that we have had calls inquiring if we were producing hybrids. We can only conclude that our meager achievement has caused him some discomfort or the man is ignorant of common practices in animal husbandry to save seriously endangered species. It is also doubtful that he or anyone else apart from the writers could even identify by sight the various subspecies of this race. We have had many *Amazona* specialists visit us and we have had to point out each of the subspecies to them. Certainly, the party in question was unable during two separate visits to distinguish one from the other. Such opposition is met with by the successful aviculturist who has flourished where self-appointed "experts" have failed.

We met with this opposition when Life Fellowship began to breed the St. Vincent Parrot (*Amazona guildingii*) in 1982. Annual breedings have become an almost common occurrence, much to the consternation and dismay of other facilities that have tried for nearly two decades with

little success. We offered them our findings, techniques, and even accepted and sent out specimens on loan, which resulted in a waste of our proven birds. In order to save face, slander and invective innuendos began to be circulated after our refusal to sign over our ownership of these rare Amazons to the consortium. In 1988, a proposal by the Consortium was to send all captive St. Vincent parrots back to the island. This would have been a convenient face-saver for those who had failed to breed this species. By December 1988, no less than 82 of these birds were registered on St. Vincent, kept as pets, with an additional 17 being housed at the Botanical Garden for a breeding program. There are comparatively few kept outside the island. The largest collection and the most successful breeding program is here at Life Fellowship.

This lends credence to the charge we have made that there are a few in conservation more intent on keeping their jobs intact than in saving seriously endangered species; the only way their positions have any relevance or serve any purpose is for the species to remain on the brink of extinction. Successful captive breeding relieves this necessity. This has also been borne out with our successful captive breeding of the Galapagos Tortoise (we hatched 85 in 1989) and with the Caribbean Ground Iguanas (72 in 1989).

I have spent some time elaborating on this because the private aviculturists should come to realize that while such ornithologists and, sad to say, even a few zoologists, often appear to support avian functions when they are afforded a large audience that they would never have had in their own field, they are behind the scenes doing all in their power to outlaw the private sector from keeping endangered species. The accomplishment of the private sector is, in fact, often an embarrassment to them. Frequently, we have been confronted with this deceit and bitterness against our favorable breeding of so many endangered species. We have readily shared our findings and endeavored to assist with our expertise in other programs, but the results too often have fallen short of that witnessed in the private sector. The true aviculturist is not a nine-to-five employee. His birds are a deeply meaningful part of his life. There are too many avian authorities today who have never

even owned a bird but are capitalizing on the growing interest of the masses involved in bird keeping, which is an honorable and therapeutic hobby, and also a means of saving threatened species.

In 1975, we returned from Cayman Brac to Grand Cayman with a brother/sister pair of *A.l. besterna*. Though Dr. J. Lear Grimmer was then acting in official capacity for the Cayman Island's government and had lived in the islands for some years, he had never seen this subspecies. This is understandable because we found only a few people living on "The Brac" who had ever seen it and some were not even aware of its existence. Lear, in turn, took us to a hotel where, after a short wait, the principal of our visit arrived from field research. He was none other than the legendary Dr. Alexander Wetmore, whose writings on Caribbean avian fauna date back to the early twenties. These were the first *besterna* he had ever seen and he spent a full hour examining them. At the time, Dr. Wetmore was 89 years of age and still very active in the Smithsonian Institute. He was a true conservationist and encouraged our captive breeding program. In the many years he spent in the field, he had seen countless species disappear. His confidence in our captive endeavors has been an inspiration remembered over the past 15 years (Noegel, 1976).

#### The Bahaman Parrot

##### *Amazona leucocephala bahamensis*

In 1977 and 1978, we sponsored two of our staff to research the representative found on Abaco (Carraways, 1979). At the time, little existed regarding this largest of the race. The extraordinary contribution of Rosemarie Gnam over the past three years has filled in data of unanswered questions and has raised new ones. Her visit here to Life Fellowship in February 1989 was a rewarding one to us and gave Rosemarie a chance to see the other subspecies in live condition. We were deeply impressed with her sincere dedication and her findings. We can only hope she will go on to research the parrot of Great Inagua. It has always been our opinion that there were, no doubt, at least three subspecies scattered throughout the Bahama chain. For instance, the parrot from Acklins Island existed until the 1940s and was reported to be larger than any of the extant series. The single picture we have seen of the

parrot of Inagua would indicate it as somewhat different from that of Abaco. Allowing the extreme variation in the two Cayman subspecies separated by only 80 miles of ocean, imagine the evolution afforded birds in the Bahamas separated by hundreds of miles and adapting to their extremely different habitats. One of the unique differences in the Abaco parrot and the one from Great Inagua is that the former nest in limestone fissures on the ground due to the lack of large trees with suitable cavities. It is interesting to note that the Puerto Rican Parrot (*Amazona vittata*) is alleged to have, on occasion, nested in limestone cliff crevasses within historic times. Again, this certifies an Amazon's ability to adapt to its environment.

### Summary

The mainland Cuban species of this series has been captive-bred on a regular basis in recent years at various locations in Europe. Unfortunately, American aviculturists and zoos have failed to do so, even when provided with captive bred pairs from Life Fellowship.

The aforementioned 48 *leucocephala* residing at Miami Metro Zoo since early 1988 may yield some hope for an additional captive breeding apart from that at Life Fellowship. However, even if successful, it may be years before any offspring find their way into the private sector.

Our examination of these 48 specimens disclosed an almost equal sex ratio and the majority were in the prime of life, all essential requisites for a successful captive breeding program. Compare this with the old and sometimes sexually senile specimens we began our program with in 1965. Even those in good health often required upwards of ten years before producing fertile eggs. They had to be conditioned to accept a mate, had to be brought into potency, and by several seasons of trial and error, acquire the ability to properly copulate. Such behavior is *learned* as evidenced by our four generations of captive-bred birds. This learning process begins as early as five months of age and, no doubt, plays an effective role in breeding activity when maturity is reached in three to five years. Age of maturity varies with individuals (Noegel, 1979).

Our ongoing research of endangered species in the Caribbean and Galapagos Islands causes us to appre-

ciate the marvels expressed in creation of insular species. Only in such habitats do the unusual and unique evolve and seem to capture the full potential of nature's powerful images. Fed by the bounty of oceans that pound our shorelines, each of us should feel a kinship with island life forms. Their existence is somehow interwoven with ours. Those who have loved living things can best appreciate the fragile environments of these parrots. It becomes a necessary part of our own destiny to see that they continue for future posterity. As I look back over the 25 intervening years since our first attempt at captive breeding island Amazons as a means of conservation, I am made to smile in gratitude and am filled with wonderment. Indeed, "He hath founded it upon the sea."

### References

- Barbour, T., 1923. The Birds of Cuba. Memoirs of the Nuttall Ornithological Society, V. 6, p. 141.
- Boosey, E.J., 1962. *Foreign Bird Keeping*, Iliffe Books Ltd., London, pp. 161-163.
- Carraway, Patricia and Clarke. The Bahaman Parrot. *Aviculture Magazine*, V. 85, No. 1, pp. 18-23.
- Noegel, R.P., 1974. Breeding the Cayman Island Amazon, *Aviculture Bulletin*, Oct., pp. 17-28.
- Noegel, R.P., 1976. The Cayman Brac Amazon, *Aviculture Magazine*, V. 82, pp. 202-209.
- Noegel, R.P., 1977. Captive Breeding of *Amazona (leucocephala)*, *Aviculture Magazine*, V. 83, pp. 126-130.
- Noegel, R.P., 1979. World First Captive Breeding of the Jamaican Black-billed Amazon, *The Parrot Society*, V. XIII, pp. 265-267.
- Noegel, R.P., 1979. Amazon Husbandry, *The A.F.A. Watchbird*, V. VI, No. 4, pp. 10-21.
- Noegel, R.P., 1979. The Isle of Pines Amazon, *Aviculture Magazine*, V. 85, pp. 85-88.
- Noegel, R.P., 1979. The Vanishing Yellow-napes, *American Cage Bird Magazine*, Nov., pp. 29-32.
- Noegel, R.P., 1980. *Amazona leucocephala*: Status in the Wild and Potential for Captive Breeding, *Conservation of New World Parrots* by Roger F. Pasquier, Smithsonian Institution Press, pp. 73-79.
- Noegel, R.P., 1981. World First Captive Breeding of the Cayman Brac Amazon, *Aviculture Bulletin*, Sept., p. 7.
- Parkes, K.C., 1963. Notes on Some Birds from Cuba and the Isle of Pines, *Ann. Carreg. Mus.*, V. 36, pp. 129-132.
- Peters, J.L., 1928. The Races of *Amazona leucocephala*, (Linn.), *Auk*, V. 85, pp. 342-344.
- Rutgers, A., 1965. *The Handbook of Foreign Birds in Colour*, Volume Two, Blandford Press, London, p. 179.
- Todd, W.E.C., 1916. The Birds of the Isle of Pines, *Ann. Carreg. Mus.*, V. 10, pp. 146-296.

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