Amazon Husbandry

by Ramon Noegel

Recently when the noted English authoress and aviculturalist Mrs. Rosemary Low Grantham was visting with me she was asked by a newcomer to aviculture why she didn't start a school on how to be an aviculturist. Her sensible reply was basically this: you learn to be an aviculturist from experience, it is something that cannot be taught. I heartily agree with her statement. One can be schooled to be an ornithologist or a veterinarian but to be a true aviculturist one must first be endowed with sensitivity and a deep love for birds, and secondly be prepared to spend years of patient or impatient endeavor in order to achieve results. The true aviculturist will listen to his peers and gain from their experiences but in the end he must be willing to not only make use of what he has been taught, but to rely on that sixth sense every individual acquires who has ever excelled in a given field. This inward feeling which yesterday's aviculturists refered to as 'that gut feeling' will often save the day when problems are confronted. Some people are born naturals and exhibit this sixth sense naturally but most have to develop it through experience. To those who have it, some of the things we are about to write will come as no great revelation. Others won't believe it and still others will cry "crazy". Nevertheless, an aviculturist can become so in rapport with his birds that he instinctively knows when something is amiss with one of the specimens by simply looking at it.

Therefore, this article is not intended to convey the idea, as so many of late have tried to do, that we are putting forth the ultimate in avicultural husbandry. That would be too great a claim for even the best to make because each genus of psittacines would require a life time of study and experience even to begin to understand the parrots particular wants and needs. Because of our success in breeding amazons and due to the many requests we annually receive for information on this subject we of the New Age Ranch (Life Fellowship)

wish to share some facts and theories that may prove beneficial to the beginner.

Selecting The Amazons You Wish To Breed

Today's aspiring aviculturist is fortunate in having a large stock of imports to choose from for potential breeders. A few years ago we would pick up a lone, long term cage pet and hope to find another of the opposite sex and then spend two to three years getting them into breeding condition. When the birds were introduced to each other we were faced with the problem of whether they would be compatible or not. Just throwing two amazons of the opposite sex together does not always result in a breeding. There were no surgical or the other means of sexing available. The would-be breeder had to trust in his ability to sight sex. When one considers such impossible barriers confronted even fifteen years ago we can well be amazed by the breeding successes accomplished.

Many people today have beginner's luck and breed right from the start a species that yesterday was considered difficult or impossible. Because of these initial achievements some individuals become overnight authorities. After some bitter disappointments however they will usually go on to become seasoned aviculturists and appreciate just how difficult and touchy the art is really is.

Years ago it was argued that a tame amazon did not make a good breeder. This is not always true. I have only known of one such pet that has been so people imprinted that it refused to pair off. Most of our breeders were long term caged pets usually past twenty years of age when we received them. They were often feather pickers which is usually a good indication they are sexually frustrated and ready to breed. Sometimes they required two to four seasons to get the hang of parenthood. Having been used to people they didn't exhibit the skittishness so common among

wild adult imports. It must be remembered that amazons, unlike other psittacines are generally a one clutch a season breeders. If the eggs prove infertile the aviculturist is faced with waiting until next year for the pair to try again. This may discourage some who are used to psittacines that produce three or more clutches a year. Parakeets, Conures, Cockatiels, Cockatoos, African Grays, Macaws, Eclectus and Hawkheads breed the year round if conditions are right. Our pair of Hawkheads gave us nine chicks in one year. When you consider their average clutch to be only two eggs and at the most three you can well appreciate their effort. Our Pair of Eclectus breed every two months and give us two eggs each time; both are always fertile. Our breeding Jendays average five to six clutches a year. Such birds more than earn their keep and help pay for the time and effort we must spend on the more unpredictable amazons.

In the wild juvenile amazons go through the mating ritual each season just as the adults do. In this way "pair bonds" are accomplished. We have had one year old amazons copulate and go through all the stages adult breeders display. Some hens will even lay when as young as two years of age. The eggs are always small reminding one of the undeveloped eggs produced by pullets in chickens. We have never had or known of successful fertilization of eggs until the hen was four years of age and this has always been with an older cock. I think it would be safe to say that in amazons both hen and cock should be at least five years of age before actual breeding is accomplished. I am perfectly aware there are always exceptions to any rule but we are going on the basis of where true facts of the parrots concerned were known i.e., the birds were hatched in captivity or were imports still being hand fed and their exact ages could not be questioned. Often those who hint at an earlier age of breeding in reality do not know the true age of the amazons involved and have merely taken someones word for it. Because of this initial five year requirement it is always best to start out with adult birds if possible.

Like people, certain amazons are quite fussy about their partners. Putting two adult parrots of the opposite sex together doesn't always result in a breeding. On the other hand we must debunk some of the false ideas that have been forstered regarding pair bonds. Where one is faced with the problem of having one hen and three males of a particular rare species it is adviseable to mate her with a different cock each year to insure a better blood stock. We have accomplished this with certain leucocephala and never had a problem. One season after removing a fresh laid



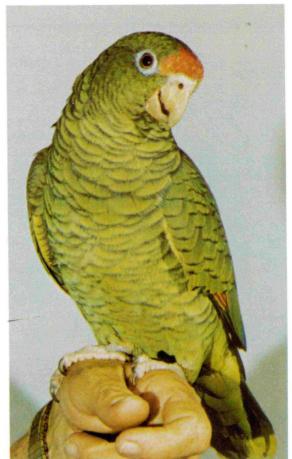
photos by Daniel L. Martin

Yellow Billed Amazon, A. collaria

All birds owned by Life Fellowship, Seffner, Florida.

Isle of Pines Amazon, A. leucocephale palmarum, very rare, first captive breeding in 1976, at Life Fellowship.





Tucuman Amazon, A. preteri tucumana, hen very rare, about four years old.



Blue-cheeked Amazon, A. dufresniana dufresniana, hen, extremely rare, ten years old.



Cayman Island Amazon, A. leucocephala caymanensis, hen, rare and endangered, first captive breeding in 1974, at Life Fellowship.

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clutch from one hen we removed the cock and introduced another which the breeding hen immediately took up with and went back to nest producing fertile eggs. This was accomplished partly because the hen in question nested early in April. Her first eggs were taken as soon as the full clutch was laid. She settled down with the new cock which was already proven from last year with another hen. Her second clutch was deposited in the middle of June. By such a procedure new blood lines can be built up even when a shortage of a certain sex is prevelant in a collection. We have over twelve Cayman Island Amazons (A.l. cyamanensis) which have the same mother but three unrelated fathers. By keeping track of the birds each year we can offer relatively unrelated birds to other offspring from other breeding pairs we have.

We are all too often amused when reading many of the ads that appear in various avicultural journals which give a long list of "breeding pairs", "Mated pairs" or "proven Pairs". Such ads are calculated to sell birds, that are often not even true pairs. In reality very few proven breeders are ever advertised. They are, generally too well known and when offered for sale will be quickly snatched up by those knowing their value. Any aviculturist with even a little knowledge is aware of the fact that many birds appear to pair off but will never breed. Nest mates often prove to be of the same sex. These facts are expecially true of amazons. Even copulation or attempts at copulation may be observed among such birds, giving the novice the impression he has a true pair. Therefore, ascertaining the exact sex of the specimens being introduced will be helpful. It is suggested that at least two pairs (sexed) be placed together in a large aviary thereby allowing the parrots themselves to pick out their own mates. The introduction of a nest box early in spring will usually trigger the choosing and one must be ever alert to the danger such pairing often brings. The true, or more correctly, the mated pair will turn on the others and serious injury or even death will occur if the unwanted birds are not removed. These are placed in another aviary with a nest box and often, though rejected by the others, will prove themselves. If they don't breed seek two more sexed individuals and begin again. In this way you may be fortunate enough to gain three mated pairs that will eventually breed for you, making all your effort well worth while. Remember, amazons are not colony breeders and will fearlessly defend to the death their nesting area. How quickly we have seen docile pets become vicious biting demons when pairing off takes place.

How To Encourage Breeding

Contrary to past information, we have found that it helps to have several breeding pairs of amazons in the same general area or within hearing distance of each other. Such a set up often stimulates nesting procedures. Some amazons, like many other birds and animals, have to be taught or incited to breed. When robbed from the nest as babies such amazons miss the privilege of growing up in a family group where much necessary training is accomplished. In the wild we have observed juvenile amazons still with their parents when the next breeding season commenced. The adult cock would go through his courtship display and feed the hen while last year's brood looked on appearently quite fascinated by their parent's actions. Such observation no doubt gives the young a lasting impression. In captivity this can easily be simulated by placing young amazons in aviaries within sight of proven breeders. When the adults begin to be excited and make their peculiar mating chortlings the nearby young are visibly stirred by this ritual and seek to imitate display and cries of the elders. Nature has so instilled this in them that even hand raised young readily respond. The best way then, to get results is from association in a controlled environment with proven pairs when available. At Life Fellowship (New Age Ranch) we accomplish this by what we call the "hotel" method. The "hotel" is a long aviary type cage which is divided into four or five compartments each of which is $3' \times 3' \times$ 3' in size. The dividing wire is $\frac{1}{2}$ " × 1" to prevent any parrot from doing any serious damage to his next door neighbor. The "hotel" is then situated so that an amazon in any compartment may easily see what is going on in the proven breeding pair's aviary. Young birds from a year on up to breeding age are placed individually in each compartment. When the adult proven pair begins its ritual the young birds become noticeably excited and they will often attempt to feed their adjoining partners if one proves to be a hen. If two cocks are side by side they will begin to spar with each other through the fine mesh wire that separates them. This procedure is merely to condition the youngsters for the years ahead. We seldom allow two birds that have formed a pair bond to be caged together until four years of age. While in some cases this is not dangerous in others it may result in serious injury or even death to the hen. In the wild such vicious advances by an adolescent cock can be escape by the hen simply flying away. In confinement this is not possible and often a young hen will be badly beaten or killed.

Injuries thus sustained may cause a shyness in the hen which later can interfere with actual copulation taking place. Be patient and wait; you may well save yourself and the parrots a bitter exerience.

Breeding season for amazons in North America and Great Britian is the spring and early summer, and is more or less determined by warmth and length of days or light. Proper conditions have been artificially simulated indoors. Your locality and climate will therefore determine the proper breeding season for your amazons. Here in central Florida the earliest we have had an amazon breed was April. In most instances nesting is in May or June and even as late as July but the latter is the exception. Since most of our psittacine area is in our Florida rain forest the shade factor plays an important part. Aviaries in the more open sun induce the amazons to breed earlier than those in the more shaded locations. Strange to relate, Yellow Nape Amazons in Central America commence breeding in December and January in places like Honduras, February in Nicaragua and March in Costa Rica. In the northeren Caribbean Islands the breeding season corresponds with ours in central Florida. The early nesting season in Central America allows the parrot hunters to harvest young amazons and usually results in the parents nesting again. This early nesting period is probably triggered by low pressure areas that are the result of cold fronts moving down the land mass from North America but which would not have the same influence on Islands in the Caribbean. I'm sure the "experts" will come up with a more feasible explanation regardless of its validity.

The Aviary and Nestbox

Each set up is different and many aviculturists go to great length to justify their approach in this matter and to often force their way upon others. But in all seriousness we have to lay aside the rules where this department is concerned. What works for one will not necessarily work for another. Years ago English and European aviculturists emphasized large aviaries as a must for captive breeding. Many newcomers upon reading these works of yesterday immediately set out to do the same, not realizing that many advances in knowledge have been made in the past thirty years where this subject is concerned. The results have been that many potentially capable aviculturists have been discouraged from attempting to breed larger psittacines because of the cost and space such large aviaries require.

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Typical suspended aviary of Life Fellowship, Seffner, Florida, designed by Rev. Ramon Noegel in 1970.



Cayman Brac Island Amazons, A. leucocephala hesterna, pair, extremely rare, male on left, hen on right. Birds owned by Life Fellowship, Seffner, Florida.

predictable successes being scored in breeding. It was my happy privilege to know the late Mrs. E.L. Moon of Miami for the last twelve years of her life. This grand old lady of aviculture bred many difficult exotics and produced or developed the white cockatiel which she lovingly refered to as her "moonbeams." She was in love with her birds and consequently they bred for her under the most questionable conditions imaginable. When I first met Mrs. Moon she must have been in her late sixties. I was astounded to see that her aviaries consisted of stacked cages three and four high from the floor to the ceiling of the small room adjoining her house. Tin was placed between each layer to keep the droppings off the fellows below. Each cage was roughly $3' \times 3' \times 6'$. the room for the most part was rather dark being lighted only by some small dirty windows and a sixty watt bulb or two overhead. In such a set up Mrs. Moon bred African Grays, Cockatoos, Macaws, Amazons, Cockatiels, parakeets and I believe some lorikeets. In addition to sunflower seeds and greens she fed all her psittacines some unsavory looking mess that reminded me of slop being fed to pigs. I have always regretted having not ascertained its composition. At the time I was still too brain-washed by what I had read to be open minded enough to learn. Consequently I was rather critical of this grand old lady's achievements. As the years of experience have since taught me better I have grown to greatly admire Mrs. Moon. Recently when a novice with a high degree of education in avian medicine was seeking to down-grade Mrs. Moon's set up my reply was: "yes, wasn't it a pity, and to think she bred every type of difficult to breed psittacine in such 'deplorable conditions'." The party in question has bred little that is noteworthy even with his self proclaimed superior knowledge.

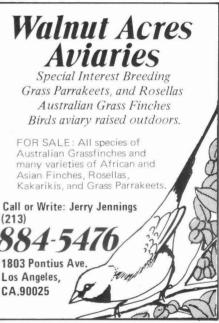
This all leaves us with the question: What is really necessary for breeding and sustaining healthy parrots? Obviously the attitude of the aviculturist plays an immense role in the happiness and well being of the birds. We have seen parrots bred in very limited quarters while still other bird keepers with thirty foot long aviaries and vast avian medical knowledge have miserably failed to breed even the most simple and commonly bred psittasines. The rare exception to this rule is a veterinarian in Miami who owns and operates one of the largest pet supplies in the U.S. This rare academically accredited importer has racked up several first breedings that I personally am aware of but has steadfastly refused to apply for the first breeding award. His attitude is that the accomplishment was reward enough. Such a humble and dedicated attitude is so uncommon among today's aviculturists that I think it should be noted here even though he prefers his name not be mentioned. However, such a person is the exception and certainly not the norm. We all tend to put recognition ahead of the better goals of accomplishment.

The obvious conclusion is that a parrot in breeding condition i.e., not too fat, sexually mature, nutritionally balanced, well exercised and happy will breed in a small aviary and will do so year after year producing perfectly healthy young. Too many people fail to take into consideration the law of evolution which grants adaptation to all creatures. It is not inconceivable to invision parrots or for that matter any bird or animal adjusting to captive conditions just as the budgie, cockatiel and domestic fowl have so readily done. We have dared some far-out outlandish programs here at Life Fellowship and have, by our success, proved they can be practical and that Nature is willing to work with us so long as none of her laws are violated. Others in less favorable climates than ours have achieved similar success when they have sought to work with Nature. By this it becomes more and more evident that the solution to successful captive breeding lies within the realm of the aviculturist's sensitivity toward his charges rather than in prejudiced and preconceived ideas which limit his vision and thwart the satisfaction aviculture could be gratifying him with.

Today when asked by closed minded sceptical visitors how we succeed I simply reply "we listen to the parrots and give them what they want rather than what others think they should have."

Most captive amazons are relatively content in their aviaries and upon escaping will usually return to them for food, protection and for roosting. This is a good indication the parrot is happy with its surroundings. When we can get past the impractical dream of rare and endangered species remaining safe in their natural habitat and accept the more realistic and positive attitude that the only lasting means of survival will eventually be through captive breeding we can get on with the project. The limited land area of many endangered amazons - such as the Caribbean Islands makes it imperative that we captive breed these parrots. It is doubtful, with the present development of these islands and other Central and South American countries, that many species will last another twenty years. There is a concerted effort on Grand Cayman Island to exterminate its native amazons (A.l.







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Lee Horton — after 6 p.m. 2376 Bella Vista Vista, CA. 92083 caymanensis). On Cayman Brac A.l. hesterna has never been overly plentiful and the islands current development will finish off the native parrot. These are just a couple of cases. There are other similar cases such as the Isle of Pines, St. Vincent, etc.

Years ago the average aviculturalist was more deeply concerned with captive breeding for the joy of accomplishment than for the money he expected to make on the birds. Today too many seem to have lost sight of that wonderful thrill and inward satisfaction that accompanies each breeding success. I am still thrilled when I look into a nest box and see some commonly bred psittacine that has just hatched. This is life being perpetuated under human supervision and like the husbandry of any living thing is exhilarating and we shouldn't lose sight of this fact. The awe and wonderfulness of it ought to be reward enough. Just think how many vanished species would still grace our planet today if more people thought that way. Do you realise the only native parrot of North America, the Carolina Parakeet was once easily bred in captivity in the nineteenth century. However, due to its commoness in the wild little consideration was given it in preference to the more exotic imports. This beautiful parrot, which must have been a close relative to the Jenday and Sun

Conures was last sighted about 1920 here in Florida.

Today, many amazon and conure escapees are readily breeding and even producing hybrids in the Miami area. It is not uncommon to see ten to twenty Double Yellow Heads, Mexican Red Heads, Finches and Yellow-napes even in the more inhabited areas such as Miami Beach. These parrots prove they can easily adapt to city living. If this keeps up we may well see amazons and other psittacines established in Florida, California, and Texas not to mention the Quakers already well established in New York.

But this is digressing from the topics of aviary and nest box. Ten (1969) years ago we decided to change our style of aviaries from the traditional walk in type to aviaries suspended about four feet off the ground. This new approach ended parasites in the collection, afforded better protection from predators and ants, cut down on the needless disturbance of the birds which walk-in aviaries produce. This arrangement allows both discarded food and droppings to pass through the wire and out of the reach of the parrots. The nest box is attached to the outside of the aviary which facilitates easy inspection with a minimum of bother to the parents.

This type of aviary is less expensive, easier to keep clean and produces a more

psychologically secure affect on the parrots. They soon learn that a person cannot get to them and even the most skittish specimens will soon calm down. We construct our aviaries with welded wire and "C" clips. The average size is usually three feet wide by three to four feet high and twelve to sixteen feet long. This is ample size for most amazons and similar sized parrots i.e., African Grays, Eclectus, Hawkheads, etc. The sides and top are 1" \times 2" or 1" \times 1" and the bottom is ½" × 1" wire. This smaller wire for the bottom affords a better footing for the parrots. These aviaries can be suspended on iron pipe frames or on wooden cross beams. This makes the aviary portable and easy to rake under. Wood perches are placed at each end. Here we purchase $1'' \times 1''$ farming stakes four feet long and made of cypress. They can usually be purchased from a farm supply and are used staking tomatoes. These are inexpensive when purchased in large bundles. The parrots love to chew them to pieces. The left over large pieces we allow to remain on the bottom of the aviary and the parrots continue to whittle them away to nothing. This not only keeps their beaks trim but gives them something to play with and there by not become bored with confinement. Green branches of various trees are also excellent for the purpose but if the avicul-

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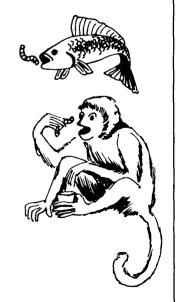
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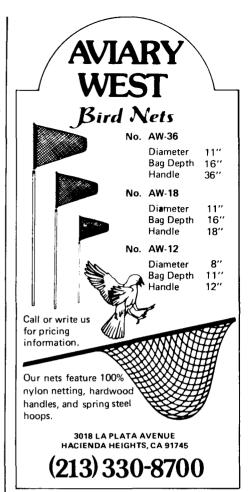
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Square perches make copulation an easier matter and gives the parrot a chance to relax while on the perch rather than constantly having a grip a round perch to keep from falling. I abhore the use of iron or plastic pipe for perches. The unfortunate birds have to continuely be on guard to keep from slipping off the perch. While such pipe last indefinitely its use certainly show little consideration on the part of the aviculturist for his birds. For many years we cut branches from the hardwoods that comprise our rain forest here on the Ranch. The bark would soon be peeled off but the hickory, magnolia and oak takes some time to be whittled away. In the meantime such perches became quite soiled by the parrots feet after they would hold a piece of fruit or some other form of soft food stuff. This residue would then tend to build up to a grime which the parrots were constantly coming in contact with each time they took hold of the perch with their beaks. Therefore the easily demolished square perch made of clean freshly milled wood not only provides a better resting place for the parrot's feet but a cleaner less bacteria ridden perch. Don't worry about the sharp edges on the square perch they are usually smoothed off by the parrots on the first day.

The nest box for most amazons of medium size should be $12" \times 16" \times 24"$. The depth should be more for the larger amazons and an increase in width of two to four inches is advisable. Here we use three quarter inch plywood. For the smaller less destructive amazons we place only a piece of 1" × 2" welded wire down from the entrance to give the birds something to climb down on to the nest area. For the larger more destructive amazons we line the entire inner part of the box with 1" \times 1" wire. The entrance consists of square hole cut at the very top of the box and measures about four to five inches square. In this way the top piece of plyboard is the lintel of the entrance and there is not the waste of several inches of space above the entrance that the conventional round holed nest box gives. Square holes are more easily wired to keep the entrance way from being chewed to pieces. About eight inches from the bottom and on the back side of the box we cut a doorway about six inches square. On the inside we place welded wire and make another smaller wire door inspecting the nest box. It is best to first lure the hen from the box which is seldom difficult with amazons. A piece of flat tin is then inserted between the wire of the aviary and the nest box's entrance so

neither bird can gain entrance to the box. In this way you can candle the eggs after they are seven days old to see which ones are fertile. We usually mark the eggs as they are laid so we know the exact date when they should hatch. Twenty-eight days are required for all amazon eggs. If the clutch proves infertile we remove them which will generally result in the pair nesting again. Sometimes the second clutch will prove fertile. Always remove any infertile egg from a clutch as they only take up space and may break and spoil the nest. Oddly enough however, amazon eggs after being incubated for twenty-eight days though infertile are most always as fresh in appearance as freshly laid ones when broken open.

The nest box is wired to the aviary and often rests on a post embedded in the ground. This gives the heavy nest box more support and keeps down movement which would occur if attached only to the suspended aviary. The nest box is filled to a depth of about six to eight inches with clean wood shavings such as cedar. Large bags of this type of wood shavings can usually be bought through pet supplies. We prefer cedar because it helps repel various ants and insects. Sometimes Sevin Dust is sprinkled over the bottom of the box before the shavings are placed in it. Tobacco dust in the form of snuff will also serve the same purpose and is quite safe and highly effective against mites, roaches and ants. If the nesting material is not too soiled at the end of the breeding season we allow it to remain in the box and as the next season approaches a three inch layer of fresh shavings is placed over the old. Here in Florida we have such high humidity that we never need to moisten the nest material unless it is extremely dry just before the eggs are to hatch. We then spray water directly into the nest box daily in the form of a light fine spray from the hose. This simulates rain which quite often is blown into nest cavities in the amazons' wild habitat. If carefully done this seldom disturbs the hen and she simply remains tight on the nest. Such a daily spray keeps a high humidity in the nest box but does not make the material wet. Since we often spray our amazons when there is a dry spell we also take this opportunity to spray them when they are off the nest in the heat of the day. The hen will usually bathe herself enough in this way to carry considerable moisture back into the box and thus to the eggs. We have found that in most cases it is not uncommon for the cock to regularly enter the nest box with the hen. This is another good reason for having a large enough nest box to acommodate the presence of the cock also. When the chicks hatch the cock





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will in most cases assist in the chore of feeding. This is especially true in the leucocephala group (Cubans, Caymans, Hispaniolans) and in the Spectacles. We have noticed a marked tendency of our captive bred males to feed their young — more so than the long term caged males. This undoubtably shows the longer a parrot is away from some of its natural instincts the less possibility of reverting back to what is no doubt a normal practice in the wild or with four or five year old cocks.

Feeding Practices

It is our intention to get the parrots to ingest the most nutritious and widest range of foods possible. However, some birds just refuse to cooperate but still annually breed and produce strong young on a very limited sunflower seed type diet. As already stated most of our breeders were long term caged pets and with the exception of some fruit and vegetables refuse other types of food. Having helped to establish health food stores in central Florida some twenty years ago we had to learn a lot about vitamins, minerals, raw juices, etc. Let me encourage you to visit your near by nutrition store and pick up some of the valuable literature on proper nutrition. You will learn many worthwhile things for your parrots' diet as well as for your own.

In the past we used to place vitamin drops in the birds water but we soon realized the intake was negligible so we therefore developed a mixture which is readily accepted by most parrots. In a blender we add hot water about one third full. To this is added a cup of raw shelled peanuts. To this is added: a teaspoon of powdered dolomite or calcium lactate or cuttle bone. We vary it almost daily to insure variety. Then three spoonfuls of powdered milk, a teaspoon of wheat germ oil or cod liver oil or two 400 I.U. vitamin E capsules, a teaspoon of brewer's yeast or potent yeast which contains many added vitamins and minerals not found in plain brewer's yeast. Raw wheat germ may be added to thicken the mixture after it is well blended. We also add about two CCs of orange flavored liquid children's vitamins. You can daily vary the above recipe in order to get into your parrots what may be deemed best. Care should be taken not to overload the mixture so the peanut taste is lost or the birds may refuse it. This mixture is then heated in an enamel pot until almost hot. Constant stirring is necessary to prevent sticking. The mixture is then poured out into a pre-heated thick baking or mixing bowl to sustain the heat of the mixture. A spoonful is given to each aviary of a pair of birds. A half spoonful to one bird. In this way you will be getting more nutrition in your bird than what it would gain in a week's average feed. This warm mixture is greedily downed by most amazons.

Sometimes we use raw carrot and beet juice in place of the water used in the blender. This necessitates a juicer as well as a blender. When raw juice is used care should be taken not to overheat the mixture and thus kill the living enzymes. The most powerful living enzymes known are in the chlorophyl of wheat sprouts, and wheat grass, newly germinated bud and root tips such as found in bean sprouts. This living, flowing plasma in growing plant tissue contains the powerful growth hormones so very necessary to all living things. It would take a volume even to begin to explain the necessity of living enzymes to sustain life. Until you undertake the study for yourself simply remember you cannot get life from dead food. Only living food offers life. Cooked and processed foods may give protein, starches, vitamins and minerals but they contain no living enzymes.

To give variety in the above mentioned mixture we beat four to five eggs and scramble fry them in a non-stick frying pan until well done. They are added to the blender with two or three slices of whole grain bread, powdered milk and hot water. Once well blended the mixture is removed and we add vitamins, minerals, calcium and wheat germ oil, all of which is well mixed in the bowl. In order to thicken the mixture simply add raw wheat germ or another slice or two of whole grain bread. This makes a delicious and desirable mixture for your parrots which gives them much needed protein, lecithin and lime in addition to all the other nutritious ingredients. It makes an excellent supplement for parents feeding chicks and can safely be used in hand feeding chicks so long as it is brought to a more liquid state by adding water. It can be refrigerated and portions warmed up at hand feeding time.

In Central America the natives use "masa" to successfully raise thousands of baby amazons destined each year for the U.S., England and Europe. Masa is composed mostly of corn meal and banana with some vitamins added. This mixture is well cooked and fed to the chicks in a very soupy form. It is allowed to cool until warm and then literally poured down the babies from a can that has been crimped to form a spout. Generally children and old ladies are used to feed up to four hundred of these babies at a time. Upon seeing such a performance one comes away feeling rather foolish for all the painstaking efforts we go through here in the States to raise a dozen amazon chicks. We think of hand

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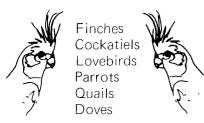
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10797 New Jersey Street Redlands, CA. 92373 raising as a relatively new practice and forget that Central and South American Indians and those on the Caribbean Islands practiced hand feeding baby psittacines centuries before the arrival of the first European. They are naturals at the art and clearly understand things about parrots we are just now finding out such as what to feed babies to produce more color, etc. Our expertise could stand a little updating in some areas. We hope to spend about three months among these Indians learning some of their ancient techniques for raising psittacines.

Surrogating

If you are fortunate enough to have rare and endangered species that may well depend on captive breeding for survival, it will be to your advantage to learn something of surrogating. This is accomplished by simply removing the eggs as they are laid and placing them under a dependable foster parent bird. Here we substitute artificial eggs for those we remove to cause the hen to continue to lay out her clutch in the nest rather than face the chance of her quitting the nest as her eggs begin to disappear. When the hen has finished her clutch the artificial eggs are removed and in about three weeks she will usually go back to nest. This clutch we allow her to keep and hatch. In this way you may be fortunate in obtaining twice the number of chicks you would have ordinarily hatched. It can be a tricky business, however, and one must really know the birds he wishes to use for surrogates. We never place more than one egg from small sized amazons with the Jenday's own clutch. This has to be done when the Jenday pair lays its first egg as the amazon egg will hatch four or five days after the Jendays' begin to hatch. Sun Conure eggs are almost identical in size to the smaller type amazons such as Spectacles, Cubans, Caymans, Hispaniolans, Finches, Mexican Red Heads, etc. Most aviculturists would not want to risk the loss of a Sun Conure clutch for the sake of surrogating. We also use old amazons hens which refuse copulation and therefore their eggs are infertile. These are replaced with the desired fertile eggs and as a rule both foster mother and father are just as judicious in caring for the chicks as if they had been their own. This gives the chicks a chance to be cared for in a real nest environment rather than incubator raised. It also gets the chick past the first five days which is the most crucial period of its life and we are convinced it gives them a better start in life than by artificially raising them.

We have had six eggs surrogated at one time by an old Cuban hen which we affectionately call "the old Maid Cuban". She has had many partners over the years but steadfastly rejects copulation. The last three seasons we have placed four year old cocks with her which she subjects and permits them to feed and to help in the rearing of chicks. At any rate the above mentioned six eggs consisted of two from A. ventralis, one from A.l. caymanensis and three from A.l. palmarum. All were successfully hatched and removed from the nest when about six days old. Overjoyed with her accomplishment this old lady smitten with philoprogenitive emotions went back to nest and laid three more infertile eggs to which we added one A.l. caymanensis egg. This she hatched and was allowed to raise the chick until it had pin feathers. If you ever visited Key West in the fifties and early sixties you no doubt saw this Cuban Amazon in her cage in front of the old Anchor Bar on Duval St. Again one must know the birds this is being attempted with. Each parrot is different. Some know the eggs aren't theirs and will roll them aside or worse yet pick them so they are ruined. It is best to practice surrogating with less rare species and thereby learn your prospective foster parent's attitude.

Environment

Finally, parrots like people, enjoy variety. We regularly move proven breeders from one location to another during the winter. This gives them a chance to adjust to their new surroundings prior to the spring breeding season. Many of our "bird experts" who visit us are horrified at this procedure and argue it disturbs the parrots and will interfere with their breeding next season. We have found it to be just the opposite. Since our aviaries are portable this makes a change of scenery an easy matter. Due to the heavy growth of tropical shrubs that form a ground cover under our Florida rain forest we often need only move the aviary a few yards to give the parrots an entirely new environment. Since they remain in the aviary and their nest box is immediately reattached upon locating the aviary, the amazons feel secure and seem to fully enjoy the excitement of the change. We leave the nest boxes with all our psittacines the year round and both birds are often seen entering the nest box at almost any time of the year. Some do so especially during inclement weather. I learned this in the Cayman Islands years ago when a hurricane passed by the islands and they were battered for several days by high winds and rain. Curious to know how the parrots were taking the weather I spent much time in the field and saw parrots peaking our of nest holes in venerable old trees that had stood tropical gales for centuries. It would seem that

under these circumstances the parrots go for several days without eating until the winds are abated. Young birds, lacking the experience of their elders are often water logged after a heavy rain and cannot fly and are then easily caught. This same thing often occurs in Cuba, I am told, and then the rural people catch such birds and make a soup from them. Soup making of parrots is an ancient practice of most of the Caribbean Island peoples. It is supposed to give strength and potency to the males of the family.

The practice of moving the aviary refers to amazons only. Other psittacines that breed the year round should not be disturbed. In the wild, breeding amazons will usually make use of the same nest hole year after year. For some reason in confinement they prefer a change of scenery. We must remember that in the wild they are daily moving to new places in a circular movement but maintain a perfect homing ability which brings them back to their roosts and old nest sites each season. Moving them about thus gives them a good memory pattern of the whole area on our Ranch. This often proves useful if a bird escapes. Amazons have excellent memories and a very high degree of intelligence. They are always quick to make use of this memory in a pinch. For instance, one old Cuban male knows that a certain pair of catching gloves that I use on amazons has a small hole in the right thumb. When attempting to catch him he makes for the hole everytime and usually succeeds in nipping my thumb. This never fails though he or any of our amazons are seldom handled more than three times a year. Merely showing the amazons the gloves which may be tucked under my arm causes them great excitement. They know what the gloves are used for and immediately fly to the furtherest part of their aviary as quickly as possible. Other types of strange clothing or hats only draw marked curiosity but seldom trigger this fear behavior.

Privacy

It was the great English aviculturalist Mr. Edward J. Boosey who said the pet vice of most aviculturists is "gloating". He went on to say "this is only too often followed by dire results." How easy it is to gloat and parade an endless line of visitors through one's aviaries, especially if the birds are quite rare. Over the years we

have come to realize the folly of such foolish exhibitionism. If you wish to breed amazons keep people out of your aviaries. Breeding amazons are highly nervous and unpredictable parrots. Strangers may incite fights among breeding pairs, cause hens leave the nest and worse during the adult's frenzy they may even resort to biting and killing their offspring. Many have been the injured looks I've had to face when refusing visitors to our bird area here on the Ranch. The true aviculturist understands this caution but most beginners do not

Remember your breeding successes are more important, or should be, than the satisfaction of gloating one gets when exhibiting his collection. Let's have the real satisfaction of displaying the offspring from our breeders and thereby make captive breeding a feasible and practicable practice. Through such captive breeding programs you will greatly aid in keeping many species from extinction and in relieving the heavy drain on wild populations which current demand encourages. When one considers all that is involved, the rewards are well worth the effort, heartache, and time required of us •

