

the male needs a much more precise knowledge of the opposite sex. As a consequence, its unlearned preferences are completed, to a greater extent, through early experience. The same situation is found in ducks where sexual differences in the extent to which mating is influenced by early experience are even greater (Schutz 1964). In contrast to ducks, however (if the small number of females tested so far permits any conclusions), no obvious differences in female imprintability have been found between the sexually monomorphic Bengalese Finch and the dimorphic Zebra Finch. This seems to be due to the fact that even in monomorphic estrildines, the remaining characters of the male (behavior, song) are still more distinct than those of the female. The same applies to monomorphic pigeons where according to Warriner *et al.* (1963), mate-selection in the female is apparently unaffected by early experience.

#### Phylogenetic Applications:

Due to its very precise determination of subsequent mating preferences, imprinting may certainly contribute to maintaining sexual isolation in the case of sympatric species of birds. Under certain circumstances, it may also lead to a reduction of intra-specific gene-flow. If, for example, a mutation in some of the species-specific characteristics occurs within a population, the offspring of parents carrying this particular mutation will become imprinted on the new signs and will subsequently tend to pair preferentially with individuals that likewise possess these characters. As a consequence, a certain isolation between the new form and the rest of the population may be developed eventually. In this context, sexual imprinting may also be an important factor in the speciation of birds. This question has been discussed elsewhere (Immelmann 1969b, 1970).

#### SUMMARY

In Zebra Finches and Bengalese Finches early experience has been found to exert influence on the establishment of sexual preferences. When tested in free-choice experiments, all males reared by foster parents of the other species orientated their sexual behavior preferentially or exclusively towards females of the foster parents' species. The same preference was found if individuals of different colour breeds of their species were reared by another colour of their own species.

The sensitive period for the determination of preferences lasts from briefly before the 15th to about the 40th day of life. After its end, absolute irreversibility is reached and it has been proved not to be possible any more, to alter the sexual preferences of the birds in any way,

neither by the mere presence, nor by (forced) joint breeding activities with conspecific females.

For the establishment of preferences early in life, a strong social attachment to the imprinting object is essential. For this reason, only the (foster) parents but not the siblings have an effect on subsequent choice of mate.—Besides for the great importance of early experience, unlearned preferences for some of the species-specific characters, probably the calls, have also been found which facilitate imprinting on the own species. As the females have proved to be slightly less imprintable than males, there seem to be sexual differences in the extent of unlearned preferences.

As indicated by our results, all criteria mentioned by Lorenz for characterization of sexual imprinting, are realized in the two species of estrildine finches. The possible reasons for contradictory results in other groups of birds are discussed.

The biological function of sexual imprinting is to enable the birds to recognize members of their own species and thus to restrict sexual behavior to conspecific mates. In this context, it may contribute to maintaining sexual isolation between species. Through reduction of gene-flow within any one species, imprinted preferences may also be important factors in the speciation of birds.

(References for this article will be furnished upon request.)



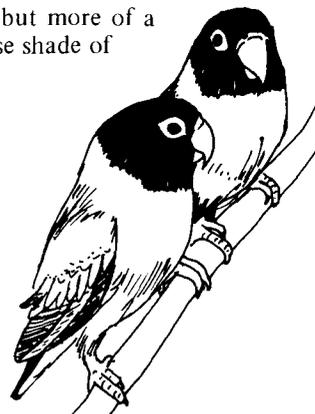
FINALLY, after months of delay this column called "Agapornis Acres" will talk about my favorite bird, the Agapornis (the African Love Bird).

The Agapornis is certainly a popular family of birds, with eight species in this genus. It offers the aviculturists perhaps one of the widest ranges of conditions and variety including price as well as care. Some of the Love Birds are very expensive, others are moderately priced, some are very easily bred such as the Peach Face, masked and Fischer's, others are very difficult or even near to impossible such as the red faced. This diversity, therefore, offers both the experienced aviculturist, as well as the amateur a challenge.

The birds are small in size, six to seven inches, this length includes a very short tail which makes the love bird look like a miniature parrot. Most of the Agapornis are easily cared for. Here in Southern California the genus has always been seen

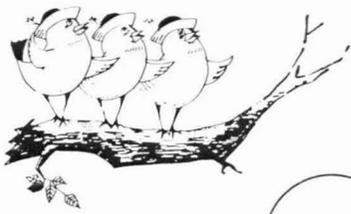
in Aviculturists aviaries since the 1930's. Mr. Harold Rudkin Sr. of Fillmore, California had large colonies of Black Masked in the 1940's and the 1950's. The blue mutation of this bird first appeared in his aviaries. At that time he also had very large colonies of Fischer's.

The PeachFace love bird has perhaps gone through the greatest change. As a normal green it has been established for years, however, it's mutations have had the greatest impact. The pied form appeared somewhere between 1945 and 1950 in a California breeders pen (if I recall his name was Hebert). Upon his death the collection was sold and part of it went to Mrs. T.M. Towne of Sunland, California and through her efforts the mutation was established. Recently the striking Lutino mutation occurred in a San Diego aviary. Mr. David West of Montebello, California has been striving to establish this mutation for the past few years. The blue mutation of Peach Face, which occurred in Germany, has been established here through the combined efforts of Mr. Bob Barry of Texas, Mr. David West, and myself. They are now quite plentiful, and many aviculturists enjoy them in their aviaries. Mr. David West also made the first cross between the Blue and the Pied. I was the fortunate one who obtained a pair of their young from which I raised the first Blue Pied Peach Face, a truly most beautiful bird. Another cross has been made recently by my friend David West between the Blue and the Lutino. Hopefully the first Albino young will be raised from this cross. Although the "ino" form of the Blue peach face will not be pure white but probably a pale lemon color due to the fact that the Blue Peach Face is not pure Blue like the Blue form of Black Masked but more of a turquoise shade of blue.



Many other mutations have occurred, the lutino form of Fischer and Nyassaland, the pied form of Blue Masked and Fischer's and many others. However, these are still not established. I, for example, have been working for six years with the yellow form of Black Masked (a dilute) and I still have not been able to establish it.

Contd on next page



# Canary Calendar

by Charlotte Nierenberg



Charlotte Nierenberg

(Mrs. Nierenberg is the author of "So You Want To Breed Your Canary" and countless articles on canary care and breeding. She will gladly answer questions through this column, and by mail. For a personal reply, please

enclose a stamped addressed envelope to P.O. Box 2095, Sepulveda, Calif. 91343.)

## CANARY BREEDING IN AUGUST? FORGET IT!

Indeed, this may not be an apropos time of the year to start a series of canary breeding articles. As a general rule, breeding operations should draw to a close in June, and by July, sexes should be separated.

In our vast country and, in fact, within a radius of a few miles within a state like California, climatic conditions can vary greatly. Breeders themselves add a multitude of variables — some breed outdoors, colony style in unheated aviaries, while others cage-breed indoors with controlled temperatures. Despite this confusion, however, most birds realize by instinct, that when hot weather approaches, they must moult or die!

Many times, a breeder is tempted to allow an unproductive pair to try once more in July — or permit a third clutch. The hen may indeed lay fertile eggs and raise her chicks to a certain point. However, although moulting is a normal process, birds are at a low ebb during this period and just do not have the stamina required to raise their young to maturity.

In retrospect, at this time of the year, one may wonder why little or no fertile eggs were produced. Don't always blame your hen! The cock may have been in poor condition and coition never was accomplished. Shaky perches or swings have no place in the breeding cage. Pre-conditioning with proper nutrients is very

important.

Methods and systems vary greatly and a novice has the right to become confused by the completely contrary advice offered by many successful breeders. Unfortunately, the only school available to the beginner is one of "experience, trial and many errors." I urge the novice to sort out the various tidbits of information, use what makes sense to him, and try to follow the pattern of a breeder whose facilities and conditions are similar to his own. Experiment with new foods and ideas during the months of August through January so that the birds will be accustomed to their fare during the breeding season.

By this month, the last clutch of babies should be out of nest and weaned — at approximately four weeks of age. Until they are six weeks old, they cannot digest seed and should be offered the nestling/condition food they were raised on. Egg food or biscuits should be given three times a day, gradually cut down to once a day by the sixth week. Other staples in the weaning cage are the usual gravel, cuttlebone and fresh water daily.

At this age, it is a good idea to note the young cocks that are "throating" a song and place them in a separate flight. It is much easier to spot a young singer among the quiet hens later on.

From six to eight weeks, hard seed and a small amount of fresh greens can be added to the daily diet. The baby moult starts at approximately eight to ten weeks of age and disturbance should be kept to a minimum.

By sixteen weeks of age, a youngster can be considered adult enough to be sold or kept for the next breeding season.

I will endeavor to keep my calendar suggestions general enough to be applicable to all. Whether a breeder specializes in "type" canaries, rollers for song, or experiments with new color tones, his canaries react the same way to good care, food and sanitary conditions.

Many of my ideas are by no means original and have evolved from the correspondence and personal contact of countless delightful "canary people" from all areas of our country. I rarely, if ever, recommend a food or method that I have

not tried and liked personally.

Let's make this "our" canary column. Questions and suggestions from novices and experienced breeders will be most welcome. It has been a long time since I encountered an "oldtimer" who wanted to jealously guard his secrets.

Join a bird club — become involved. Most of us realize the gratification of "bird talk" with others sharing our interest. Help aviculture to grow by helping a novice. ■

## AGAPORNIS ACRES—continued from page 13

Great strides have been made with the genus of Agapornis but much more remains to be done. Closed banding and individual identification of birds is necessary, as well as, reliable records if we are to establish and improve our birds, as well as our vital new mutations. Many Love Birds breed so freely in our aviaries that we must control the number of young the pair is allowed to raise. I have had very experienced Aviculturists tell me "they rest themselves" meaning the nest boxes are never removed. This is not good aviculture and a practice that should not be encouraged. Two nests a year is adequate, possibly a third if the clutches of young were small in number. When colony breeding, it is very difficult to stop the breeding cycle of all the pairs at the same time. There are always a few late starters and they are still incubating eggs when the majority of the pairs have fledged their second clutch. In this case I usually allow a third clutch and then foster the young to birds in other aviaries. Love birds on the whole are good parents but you must know your birds.

If you have never fostered any young before, I offer a few guidelines that will help. Always choose for a foster hen one that is "broody", this means a hen that is steady on the nest, one that is not too nervous when you inspect her young. Pick a nest in which the young are approximately the same age as the young bird you are fostering. Do not over burden a hen, four or five young is adequate for a Love Bird. Sometimes if necessary, a good foster hen can do well with six or seven, but this should only be done as a last resort. The point is that a hen should not be expected to raise more than ten young in a period of twelve months, if you intend to keep her in good condition for future years. I have hens that were banded in 1966 that are still raising good nest of young. I feel that you must control production or you will eventually produce weak young birds and encourage other problems such as feather picking of the young by the parents before they fledge, young that get stuck in the moult (feather

deterioration), poor fertility and high mortality of the young. Fostering of the young should also be done at dusk. Then, next morning check the birds to see if the mother has fed the fostered young. Most hens feed throughout the night and if the fostered young are fed then they normally will be cared for.

Another suggestion that might help is regular inspection of the nests in your aviaries. Birds, like all animals, are creatures of habit, thus, it is a wise aviculturist who feeds his birds, cleans aviaries and checks nest boxes on a routine basis. I check all my nest boxes every five days in the afternoon, this way my birds are used to my inspection. All of this makes the fostering of young and the close banding of the young a much easier task. Please understand that I do this only with the easy breeding Agapornis, that is the peach face, masked, and fischer's.

In future issues I will discuss each member of the Agapornis in detail devoting perhaps one article to each species.

If there are any questions I do not cover in the following issues of this column, feel free to write me regarding your problem with the "AGAPORNIS" and I will try to answer your questions.

Write to: Agapornis Acres  
2376 Bella Vista Vista, California 92083

## L.A. CITY PLANNING COMMISSION HEARING HELD

The Los Angeles City Planning Commission conducted a public hearing June 24, 1975 at the Northridge Junior High School Auditorium before a 'standing room only' audience of more than 600 RA zone residents and aviculturists. Arguments "for" and "against" a city proposal to place strict numerical limitations on animals kept on lots in the RA (residential agriculture) zone were heard.

Under the city proposal, generated by an isolated complaint, the breeding of game birds, waterfowl, and other birds would be practically eliminated on lots of 17,500 sq. ft. (1/2 acre) or larger. The implications for aviculturists living on the average 7,000 sq. ft. R-1 lot are profound, as the proposal is a step toward some of the harshest city regulations affecting bird breeders of nearly any city in the nation. Los Angeles currently ranks among the most liberal with no numerical limitations.

Spokesmen in support of the restrictions numbered only three, including the individual responsible for the original complaint.

Opposition spokesmen representing the

A.F.A., RURAL (Residents United for RA Lifestyle), 4-H Club, Future Farmers of America, Sierra Club and others numbered more than sixty, forcing the hearing to be extended to a second session in July.

The opponents to the proposed ordinance, wearing "I Like Animals" signs, presented convincing arguments and a show of strength for maintaining the status quo. A petition of over 4,700 signatures was presented with the groups vowing to gather more.

Whatever the Planning Commission's decision, the ordinance must be submitted to the City Council. If the Commission approves the restrictions a simple majority of council votes would be required for passage, whereas the commission's rejection would require a 2/3 majority vote from the councilmen.

Area aviculturists will be kept advised by mail of future action and will be asked to lend their support to the A.F.A. position. The proposed severe restrictions, should they become law, may well be held up as an example for other cities to follow.

# Magnolia Bird Farm

Owner  
Frank Miser



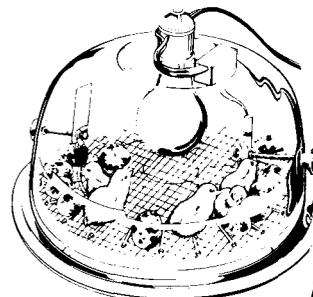
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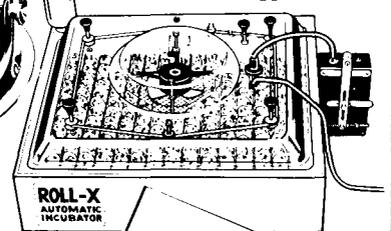
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