



Bali Myna, *Leucospa rothschildi*

Preparing for the Future in Rothschild's Myna Breeding

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In March, 1978, I gave a paper in Seattle at the 1st Birds in Captivity Symposium in which I was groping toward ways to make our efforts in aviculture more relevant to the conservation of birds in the wild. Since that time several bits of information have directed my thoughts. This paper is intended to discuss them with you and to let you know where they have led me.

Again I'm going to discuss the Rothschild's myna or Jalak Bali as the Indonesians prefer we call it. It is *Leucopsar rothschildi*-Stresemann 1913 to the scientists. The reason for choosing it is that it breeds well enough in zoos that a number of lines have developed. Also, it is an attractive aviary bird being largely white, with black wing and tail tips and with bare skin of a turquoise-blue color on the lores and behind the eye. It has an erectile crest, slightly longer in males.

It is found only on Bali and is now confined to the few remaining forest areas at the northwest tip of the Island. There has been some confusion about the number of Rothschild's myna to be found in the wild. That is because another partly white myna occurs on Bali. It is the black-winged starling *Sturnus* (*Gracupica*) *melanopterus*, a bird reported as common and frequently mistaken by visitors for the more widely heralded but always rare Bali myna.

The latest report I have is that of the Smithsonian's John Seidensticker who was there last August looking for indications that the Bali tiger *Panthera tigris balica* still existed. John found that the tiger is gone and the Rothschild's myna is declining and vulnerable, though he hesitated at estimating numbers.¹⁰ There was an estimate of 550 by an expedition of The Ecological Institute of Universitas Nasional, from Jakarta, earlier the same year.⁵ This is a species very much endangered. Having learned that the numbers were dwindling and that the exportation into captivity was very much less of late, I began to wonder how our captive populations stood.

I decided to examine our own flock data at Washington. Records had been kept, but never summarized. In fact, getting the information together so it could be summarized appeared more formidable than the summation. I obtained the cooperation of a volunteer, Joan Smith, who as a representation of FONZ (Friends of the National Zoo) was keeping records at the Bird House last summer. I asked her to make copies of the individual record sheets of all the Rothschild's mynas and to run off copies of all notes about them in daily keeper reports, death reports, etc. She did, and I found it fairly easy to make a record of each bird, and what we know about it.³

Several facts became apparent very soon. What we had suspected was true. One pair had started to breed, they had dominated all others and had inhibited any breeding by others. From our first hatching in December, 1970 until the death of the female in September, 1973 one pair fledged 36 young . . . but no others nested. By October, 1973 the male was mated with one of his two-year-old daughters and they were the only producers for the next year. The male caught avian pox from a wild common starling which somehow got into the Bird House and died on November 4, 1974. By then, he and his daughter had fledged 15 more youngsters. During 1973 and 1974 two pairs of second generation young started to breed, in isolation from the original pair, but all were from the same parents.^{2 3}

Our records drove home to me two points. The first, that many collections might have our situation — one pair dominating the breeding resulting in many related young. The second, if those early pairs were sufficiently productive, there might still be plenty of first generation young around for some widespread outcrossing.

Although I was reluctant to get into the records analyzing end of the bird business any further, I had gone too far to turn

back. I prepared a letter and questionnaire. I sent them to every zoo in the country which was named in the latest listing by IZY (International Zoo Yearbook) of Bali myna breedings (1976). I sent it to several private breeders also. I wanted to know if they had had breeding by a wild-caught pair.

I had to assume that those were probably unrelated because of the great amount of shuffling which would have been done in assembling enough birds for shipments, and again in the final selling off of the birds. If that were a true assumption, then any first generation offspring from those pairs would be unrelated to those of like parentage in other collections.

I found that of the thirty-seven collections which responded, collection numbers 5, 12, 20, 23, 24, 26, 35, and 37 had bred wild-caught pairs. From their answers and those of the others, I discovered that there still existed 27 of the wild caught birds and 58 first generation young late last winter. From that excellent nucleus, we could set up a "multitude" of unrelated pairs. Then by judicious shuffling back and forth, we could provide a sound genetic basis for the breeding for years to come.

At the time of the Seattle Symposium there was not much hope that aviculturists would have the freedom to make the exchanges and shipments of birds necessary to set up the unrelated pairs. It would have been illegal under the Endangered Species Act. It seemed that the only chance would be to obtain CSSP (Captive Self-Sustaining Population) status for the Rothschild's myna under the Act. And at about that time the F&WS quit accepting proposals for such status, saying they had decided to issue new regulations for captive birds.

Now there is hope. The F&WS has come out with regulations which will allow interchange of captive-reared birds, under restrictions, but making it possible.

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We must assume it is all important. Recent studies by Dr. Katherine Ralls, *et. al.*^{6 7} show statistically that young hooped animals which resulted from related matings have lower survival rates than those from unrelated matings (at the National Zoo). It is not possible yet to make such comparisons for captive-reared Bali mynas. Neither our early records nor those sent me by other institutions show enough about the dates and numbers of deaths in the nests, before fledging. I would expect the greatest proportion of deaths, if they are based on inherited weaknesses, to occur during those trying times while the young are dependent on their parents for food, warmth, etc.

One result of the questionnaire reveals that Bali mynas have relatively long productive lives in captivity. One group of fifty individuals examined showed five still alive at eight years old and one still alive in its ninth year. All were still producing young. Similar information was gained by Spilsbury ten years earlier, so that was not new.⁹

Another result from the questionnaire has been to reveal that most collections do not keep good enough records for long term management of their flocks. Record keeping at the National Zoo appears to be better than average, but there are many gaps. If we are to know in ten years what Rothschild's mynas have been bred to which, we must have clear records. There must be much shipping about of birds to maintain the maximum of unrelatedness.

When keepers of accounts must pass their records to other hands, as frequently happens in zoos and eventually must happen in every collection, there must be accurate records if the work is to be continued. No doubt, some breeders will feel that existing stocks can be line bred without deleterious effects, at least for a few generations. Certainly all domesticated stocks have come from such work. However, we are breeding endangered wild species, possibly for eventual return to the wild. We must assume that the type which came to us from the wild represents the best that line could produce through the means of natural selection.

What are the possibilities of release? When I first began to investigate the background of this bird, I kept finding references to the removal from the wild for captive purposes as the prime factor in the decline. When I had dug into it a bit, I realized that the Jalak Bali was suffering from the identical problems of other forms which were becoming scarce. Man is taking over or destroying its habitat.

John Seidensticker was hired by the In-

onesian government to survey the situation in 1978.¹⁰ He reported that the Bali Barat Forest Reserve which had been set aside as 19,365 hectares in the 1940's had been reduced and fragmented by withdrawals and resettlement inside the borders so that the area is about 11,500 hectares now. What was once a continuous block of forest consists of five or six widely separated fragments now. The continuity of habitat, so necessary for success of many species, particularly fruit eating birds, is lost.

Illegal harvesting of timber within the 11,500 hectares is continuing. Some cutting is for charcoal burning on the nearby island of Java, some is for fuel wood and for the wood carvers of Bali. Hunting within the reserve is not being controlled. In effect a nature reserve is being treated as "a commons with free resources for those who can get them first". He joined Indonesian planners who recommend that the forest be made into Indonesia's first national park. He appealed to the Indonesian government for more responsible control to save the Jalak Bali. However, he told me that without widespread support, it probably would be impossible to reverse the trend in time to save the species in the wild.

He did feel that all hope for the species was not lost if we could provide a soundly bred stock in captivity. When the national forest is gone, the need for charcoal will still be there. He is urging the Indonesian government to come up with long-term, large scale tree planting programs, for sustained yield harvest particularly on Java. That is not unreasonable given their growing conditions, for trees of one genus have been recorded as reaching 85 feet in four years.

Therefore, if the Indonesian government moves quickly enough, the scenario could go something like this. On lands set aside for the purpose, the government finances tree plantings. It promotes plantings along roads and even city streets. Meanwhile it strives to reverse the thinking of the people, establishing values in their minds for conserving the forest and its wildlife. The unique white myna could be the symbol. The University or other agency would establish a rehabilitation center in the forest. There Bali mynas from captive stocks in America or Europe could be bred and as their young matured, they could be released to the wild. In the young forest, nest boxes and other aids such as supplemental feeding would be needed. Care for forest and its denizens should become a way of life.

Is it impossible? No. It happened to the North American Wood Duck.⁸ The rever-

sal of public opinion was necessary in every state in our Union in which the white-tailed deer and the wild turkey have been restored.⁴

The task for captive breeding is clear. We must continue to "plug along", but with a new awareness of our responsibilities. For every species maintained in captivity, **someone** must lead the way to maintaining a soundly based genetic program. For how many bird species will that someone be a member of AFA? Will that someone be you? •

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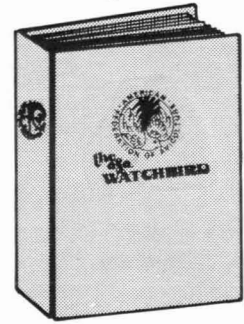
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