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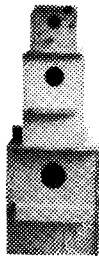
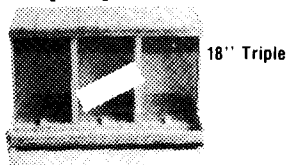
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breeding the Scarlet-headed Blackbird

by **Larry Shelton**
Curator of Birds
Philadelphia Zoological Garden

Of the 94 species of icterids, many have frequently been exhibited in zoos and some, such as the common troupial, have long been popular cage birds. However, probably less than 25 species have ever bred in captivity—and certainly none with any regularity. Three reasons for this paucity of captive breeding successes would seem to be: (1) the large quantities and varieties of live food necessary for fledging the young; (2) the difficulty in providing suitable nesting sites and the specialized nesting materials required by some species; and (3) in the case of colonial nesters, sufficient specimens to trigger breeding behavior and enough space to set up territories—a difficult condition in most captive circumstances.

The Philadelphia Zoo's experiences in 1978, 1979, and 1980 and early 1981 with the scarlet-headed blackbird (*Amblyramphus holosericeus*) demonstrate that, with careful management and manipulation, these circumstances can be overcome—even with a highly sociable acterid such as this species. The only member of its genus, the scarlet-headed blackbird is a splendidly handsome bird—both sexes are velvety black with scarlet head, breast and thighs. It is 9½ inches in length and has a stiletto-like beak. Found from southern Brazil to northern Argentina, this blackbird is an inhabitant of reedbeds and marshes. It wades along the water edges, opening its needle-like beak to explore waterlogged debris in its search for insects and other food. W.H. Hudson in *Birds of La Plata* (1920) has this description:

"...The birds are lively, active and sociable, going in flocks from half-a-dozen to thirty birds; they remain all year and inhabit the marshes, from which they seldom wander very far but seek their insect food in the soft decaying rushes. They are common on the swampy shores of the Plata, and when seen from a distance, perched in their usual manner on the summit of the tall rushes, their flame-colored heads shine with a strong glory above the sere, sombre vegetation...."

"The nest is an ingenious structure of dry grasses, fastened to the upright stems of an aquatic plant, three or four feet above the water. The eggs are four, in size and form like the English Song Thrush, spotted somewhat sparsely with black on a light blue background.

"The young birds are entirely black at first, and afterwards assume on the head and neck a pale terracotta red, which gradually deepens to vivid scarlet."

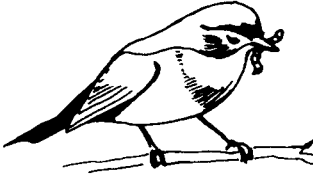
When the Philadelphia Zoo obtained two specimens from a Florida dealer in October 1978, the above quotation was essentially the only printed information about the bird's social behavior, natural diet and breeding habits available to us. After a period of quarantine, the "pair" was released into our Shore Bird Exhibit. The back of this exhibit (measuring 35' wide, 15' deep and 9' high) had been converted into a marsh-like habitat through much replanting. The blackbirds soon proved to be hell on wings when it came to the destruction of the more succulent plants. We had to content ourselves with bamboo and a reed-like palm as substitutes for real marsh plants.

The two birds thrive on a diet of fruit, soaked Gaines dog meal, Zoocake (a nutritionally balanced food similar to commercial softbill mixes prepared by the Zoo's commissary), ground meat and small quantities of crickets and mealworms. The beautiful scarlet of the plumage will fade without an adequate amount of carotenoids in the diets. Since the birds readily drank our nectar formula, this proved to be the most effective means of providing the necessary carotenoids. The additive used in the nectar was Ambrosia Base, manufactured by Nutritional Research Associates. With the aid of the nectar, the birds faded only slightly from a captive moult.

In March 1979, we obtained two more specimens which had been imported with our original birds. They had been returned to the Florida dealer because of their plant-destroying propensity. During their period of captivity, they ob-

choice golden mealworms

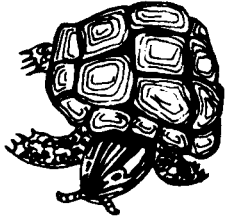
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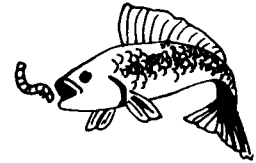
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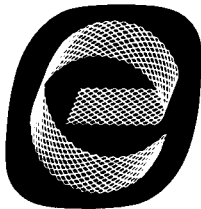
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viously had not been fed supplemental carotenoids in their diet. For the "scarlet" in the new birds' plumage was fully one-third paler than that in our two original specimens.

After the four birds were put together in the exhibit, we began to see for the first time what was sexually differentiating behavior. Based on behavior alone, we now strongly felt that the original two birds had been a pair and the new specimens were also a pair. (Time would prove our observation to be right.) The presence of the new birds had stimulated territoriality, and this in turn, seemingly, was necessary to arouse any sexual responses in the birds. As time went on, pair bonding occurred between the original male and a new female and

the original female and a new male. Size did not prove to be a form of sexual dimorphism: the largest and smallest of the four birds were both females!

A posture which frequently had been assumed by the four birds, regardless of sex, was an erect position at the top of a bamboo stem or a palm frond. Tail was slightly spread, shoulders raised and head lowered as if to display as much scarlet as possible. All this was accompanied by a whistling call. This posture was used for both recognition to a mate and territory identification to those birds with no pair bond to it.

In March 1980, both females frequently exhibited a submission posture. They would elevate their heads and tail and flutter their wings below their



Territorial and mate—greeting posturing of a bonded pair.



Elevated feeder for live food. Month-old fledgling begging food from the parent.

Month-old fledgling begging food from parent at pool edge. Note the very slightly brownish-grey throat on the otherwise totally dull black plumage of the juvenile.



bodies. Despite the frequent observations of this behavior, actual copulation was never seen at any time.

By April 5, both females were trying to build nests in the same palm—the larger female had secured the more favorable site for a nest. Males exhibited no interest in actual nest-building activity, only interest in guarding nest sites. Both females (even the one with the better site) were having difficulty in constructing a nest with only bamboo leaves and twigs in the exhibit and the dried grasses we were also providing. Nest-building was at an impasse until the provision of Spanish moss and strips of pampas grass. The former material seemed essential to binding the nest together. The long strips of pampas grass were first soaked in water by the birds before being incorporated in the nest structure. The nest was approximately five feet above ground.

(The larger female had indeed become the Alpha or dominant female, and the smaller or Beta female had stopped nest-building in the palm by April 7. At the opposite end of the exhibit, branches with nest sites were stuck upright in bamboo in the hopes that she would attempt to nest there. However, she showed no interest in the new location.)

On April 10, nest-building seemed to have stopped. A check of the nest revealed a deep, well-constructed affair. The Spanish moss had been woven throughout the nest and had also been used to secure the whole nest to the palm fronds. A check of the nest on April 12 revealed no eggs, and minor work on the nest was continuing. A further check of the nest on April 16 showed it to have become even more massive. By April 20 the female was definitely incubating.

Just as the female had built the nest without the male's assistance, she now did all the incubation of the eggs. The male assumed a guard/observation post at the top of the palm, rarely leaving except to chase other scarlet-headed blackbirds when they approached the nest site.

Not knowing the exact incubation period, we began to place large supplies of live food in the exhibit on May 2. The live food—mainly mealworms with lesser quantities of grubs (a large fly maggot commercially available from Grubco) and small crickets—was given at 8:00 AM, 10:30 AM, 1:00 PM, 3:00 PM and 4:45 PM. Liberal quantities of Vionate, a mineral/vitamin supplement for puppies manufactured by Squibb, were sprinkled over the insects. The live food was placed in an elevated feeder to pre-

vent the other exhibit inhabitants (except for a pair of Pekin robins and the other scarlet-headed blackbirds, mainly ground-dwelling marsh and shore birds) from immediately gobbling it up.

On May 5, the female was definitely feeding young and may have been feeding on the previous day. While the male had not contributed to nest-building or shared incubation duties, he carried food to the young in the nest, though not as frequently as the female did. The preferred food for the nestlings was mealworms with some grubs and fewer crickets. The adults carried food to the nest almost every 15 minutes at first and later about every half hour. Adults would carry out fecal sacs.

Parents frequently would take insects to the edge of the exhibit pool and dunk them in water as the birds battered the live food into more acceptable form for feeding. This undoubtedly is a natural behavior of these marsh-dwelling birds. Legs of crickets were always removed before feeding to the young.

On May 15, the exhibit pool was drained as a precautionary measure lest a fledgling should drown itself. By the morning of May 19, a young bird had fledged. The parents now engaged in murderous attacks on the other scarlet-headed blackbirds, which had to be removed from the exhibit.

Although there had probably been more than one egg, the single youngster was the only fledgling. (An attempt to check nest contents with a mirror early in the incubation period when the female was off the nest had caused such hysteria from the female that this check was aborted and no other was ever made.) From the point of fledgling, the male fed the young bird more frequently than the female, and by May 21 the female was renovating the old nest with Spanish moss and was showing total disinterest in the young bird. The feedings by the male also did not seem adequate, and we consequently removed the young bird for handraising on May 22. The fledgling was fed 75% Gaines dog meal and 25% grape dusted with Vionate. Until the bird became self feeding, the bird never gaped for food and had to be forcefed.

By May 28, the young bird began to eat some food on its own. (This was also the date on which the adult female began incubation again.) We began to reduce the frequency of feeding, and by June 7 we considered the bird to be self-sufficient and stopped forcefeeding altogether. Mealworms had been placed on the top of the finely mashed Gaines dog meal and chopped grapes to attract the youngster's attention and to

stimulate pecking and eventually eating. The bird also drank nectar.

The young bird was a poor, in fact, a very poor edition of the adults—essentially a dull black bird with a brownish-gray throat and upper chest. The legs and beak were horn-colored; the eyes black.

On June 11, the adult blackbirds were again observed feeding young in the nest. The feeding pattern essentially followed that of the first nest, and at the end of the day on June 23 a single youngster had again left the nest. By June 24 the female, which was already renovating the nest, was ignoring the begging of the young bird but would still remove any fecal sacs from the youngster's palm frond perch. Again, the male's feeding of the fledgling did not seem adequate. However, we decided to leave this second youngster in the exhibit and risk the consequence.

Although the young bird was observed probing the ground and water edge for food from July 4 on, the young bird was not actually seen feeding by itself until July 9, when it was seen to take mealworms from the elevated feeder.

An extreme heat wave caused the scarlet-headed blackbirds to desert the third and last nest of the season. Temperatures were rising well above 100°F in the Bird House. When nest desertion became apparent, we removed three eggs from the nest—two were totally light blue and the third had only a few brownish specks on the large end.

At five months both young birds began showing flecks of scarlet under the chin. (Our experience shows no transitional terr-cotta color on the head and breast.) At eleven months all scarlet coloring is still confined to the underparts, the crown, nape and thighs showing none of the bright color. The bird from the first nest turned out to be female, the one from the second a male.

At the time of writing (April 1981), the old breeding pair have eggs in a new nest in the same palm tree and have been incubating for one week. Although both young birds are still moulting into adult plumage, they have pair-bonded and the female has almost completed a nest in the branches which were provided for the Beta pair last year!

SUMMARY

Two pairs of scarlet-headed blackbirds in a medium-sized exhibit or aviary with a marsh-like environment can activate breeding in this social species. However, Beta pair may have to be removed later. Color feeding to retain scarlet plumage is also probably an added stimulus to breeding. Proper nest material is crucial

to a successful nesting—plenty of Spanish moss and shredded pampas grass were vital to the Philadelphia Zoo's successful nestings. Incubation and fledging periods are each 14 days. Mealworms with lesser quantities of grubs and small crickets—liberally sprinkled with Vionate—are adequate for successful captive rearing of the young. Live food must be supplied constantly. Female performs all nest-building and incubation chores. Inspection of nest after onset of incubation should be avoided, or desertion may result. Male guards the nest from a sentinel position. Male assists in feeding of young in nest and does most of the feeding once the young have fledged. Female in captive circumstances almost immediately starts new clutch. Although feeding of fledglings by male may appear to human observation to be inadequate, it probably is not necessary to remove young for handraising in such cases. In contradiction to literature (Hudson), the eggs seem to be frequently entirely light blue and the young birds (at least, in captive conditions) moult directly into scarlet plumage with no transitional terra-cotta stage. Although at eleven months the adult plumage is not totally assumed, young birds in captivity will breed at this stage.

AN APPRECIATION

The author offers special thanks to the following individuals for their assistance in helping to make possible the breeding of the scarlet-headed blackbird and in providing important data used in the preparation of this article: Ralph Horn, Assistant Curator of Birds, and Albert Woerner, Senior Bird Keeper, Philadelphia Zoological Garden; Shirley Busch, Peggy Chambers, Elizabeth McKee, and Dolly Purves, Docent Observers, Philadelphia Zoological Garden; Eileen Brandown, Philadelphia Zoological Garden, typing and proof reading of manuscript; Charles Cook, Disney World, and Ronald Young, Busch Gardens (Tampa), both of whom supplied Spanish moss for nesting material.

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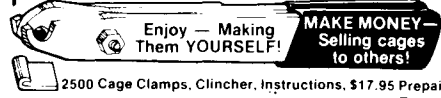
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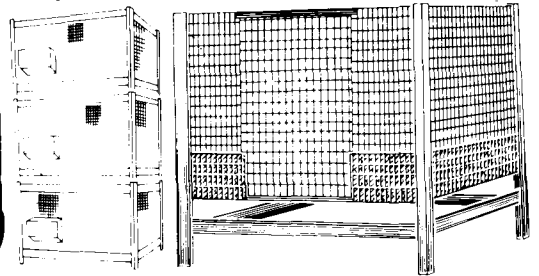
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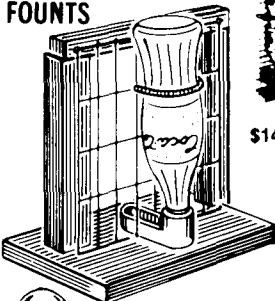
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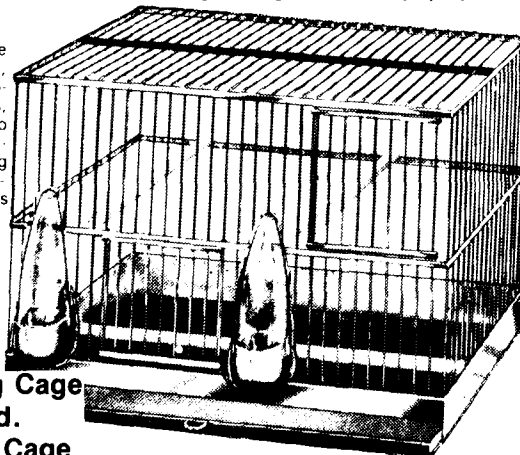
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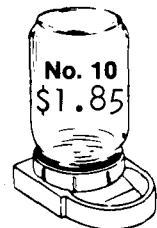


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