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JOANNA BURGER, *Department of Ecology and Behavioral Biology, J. F. Bell Museum of Natural History, University of Minnesota, Minneapolis, Minnesota 55455*. Accepted 13 Apr. 72.

Propagation of Barn Owls in captivity.—Some aspects of the biology and life history of native birds often are more readily obtained in captivity than in the field. This is particularly true in evaluating the effects of pesticides or other pollutants on birds, because establishing cause-and-effect relationships requires experimental studies. Few wild species have been bred in captivity with sufficient success to permit the large-scale studies that are needed. This paper reports successful efforts to breed Barn Owls (*Tyto alba pratincola*) in captivity and presents biological data concerning reproduction.

I collected 6 Barn Owl eggs on the lower Potomac River in St. Mary's County, Maryland, on 9 April 1968 between 10:00 and 14:00, taking 2 eggs from each of 3 nests in offshore duck blinds, and put them under a broody Bantam hen at the Patuxent Wildlife Research Center in Laurel, Maryland, at approximately 18:00. Three of the six eggs hatched after 21, 24, and 29 days of incubation. The incubation period for the Barn Owl has been reported to range from 21 to 24 days (Bent, 1938) and from 30 to 34 days (Wallace, 1948; Kendeigh, 1952; Honer, 1963). Although we do not know how long the study eggs were in the nest before being collected, the incubation period must be at least 29 days.

The newly hatched owls were immediately brought indoors and placed on a layer of wood chips in a cardboard box. A constant temperature of 85-90°F (29.5-32°C) was maintained by suspending a heat lamp above the box. For the first 2 weeks the young owls were hand-fed three or more times a day. The finely chopped diet contained 1/3 whole rats, 1/3 whole hamsters, 1/6 chicken heads, and 1/6 chicken necks minus the skins. Steamed bone meal and vitamin supplement were added to the diet. The young owls cast pellets daily commencing the second day after

hatching. One owl was unable to make its own way from the egg. It died 6 days later, although it accepted food as well as the others. At 2 weeks of age, the two remaining owls began voluntarily to eat cut-up laboratory mice placed in a petri dish. Development seemed normal and both birds were flying by the end of June.

After fledging the smaller of the two owls was placed in a partially enclosed breeding pen with a 2-year-old female Barn Owl brought from New Mexico. The two birds were given an *ad libitum* daily ration of whole laboratory mice throughout the study. The elevated breeding pen measured 10 × 10 × 6 feet high; the back wall and part of the roof were covered with plywood. The remaining sides and the floor were covered with heavy-gauge chicken wire. A plywood shelf nailed horizontally to the back wall was concealed by a sloping piece of canvas that left one end of the platform open. Wood chips were placed on the shelf for insulation.

The female began laying during March 1969, when the hand-reared male was 10 months old. The pair produced six clutches of eggs over a period of 22 months (Table 1). As the time from the start of egg laying to the time of fledging is about 3 months (Bent, 1938), the performance of the captive owls substantiates Wallace's (1948) suggestion that Barn Owls tend to breed more or less continuously when food is plentiful.

The male owl usually spent the day in a half-sitting position beside the incubating female, but was never seen incubating. Literature records on the role of the male in incubation are conflicting. Bendire (1892) and Forbush (1939) state the male Barn Owl helps in incubation, while Reed (1897), Wallace (1948), and Reese (1972) claim the female incubates alone.

The mean clutch size for the captive owls was 5.3, and the mean number of young fledged was 3.7, which is very similar to the performance of this species in the field as reported by Reese (1972). He found a mean clutch size of 5.5 and a mean number fledged per successful nest of 3.8 for 74 nests studied in Maryland from 1964 to 1969. Henny (1969) reported a mean number of young banded per successful nest (233 nests) of 4.2 for the northeastern United States. Those fledging rates were computed on the assumption that mortality after banding and before fledging was insignificant.

During periods when the nest of the captive owls contained eggs or young, the female owl attacked anyone who raised the canvas nest cover. During these attacks, eggs or young were sometimes scattered about the nest. Indirect observations such as might be made through a hole drilled in the back of the nesting ledge would be preferable to avoid disturbing captive birds.

The ease with which the Barn Owl adapts to captivity and the capacity to breed more or less continuously in small enclosures at an early age make it an excellent

TABLE 1
NESTING SUCCESS OF A CAPTIVE PAIR OF BARN OWLS

Clutch No.	Dates started ¹	Eggs laid	Young fledged
1	3 March 1969	4	3
2	22 June 1969	5	4
3	2 Feb. 1970	6	2
4	25 April 1970	4	4
5	7 Aug. 1970	6	3
6	6 Jan. 1971	7	6

¹ Elapsed time from the start of first clutch to the start of last clutch was 22 months.

species for research. I thank Lawrence Blus for his helpful comments and editorial assistance.

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JOHN R. MAESTRELLI, *Bureau of Sport Fisheries and Wildlife, Patuxent Wildlife Research Center, Laurel, Maryland 20810*. Accepted 26 Apr. 72.

An erythristic specimen of the Rufous-sided Towhee.—The occurrence of chestnut or partly chestnut feathers in the normally black plumage of the pileum of the Rufous-sided Towhee, *Pipilo erythrophthalmus*, is not unknown. The variant appears in hybrid populations between *P. erythrophthalmus* and *P. ocai* and in populations of *erythrophthalmus* influenced by introgression from *ocai* in central Mexico (Sibley, Univ. California Publ. Zool., 50: 109, 1950; Sibley, Evolution, 8: 252, 1954; Sibley and West, Condor, 60: 85, 1958; Sibley and Sibley, Auk, 81: 479, 1964). Both Dickinson (Bull. Mus. Comp. Zool., 197: 273, 1952) and Sibley (1954) reported a low incidence of chestnut on the crowns of Rufous-sided Towhees in populations in the United States and Canada.

On 3 June 1968 I collected a first-year male (testes: right, 9.0 × 9.0 mm; left, 11.5 × 7.0 mm) Rufous-sided Towhee on its territory in Piscataway Township, Middlesex County, New Jersey (AMNH No. 792678). The specimen is unique in the extent of chestnut and rufous in its plumage, and is unquestionably an erythristic form. Measurements place it in *P. e. erythrophthalmus* (Dickinson, 1952). Feathers on the crown and occiput are broadly tipped (distal one-quarter) with chestnut and black basally. The forehead bears fewer chestnut-tipped feathers. Overall the effect is a distinct chestnut cap only a little less complete (black present) than that found in pure *ocai*.

Unlike other partly chestnut towhee specimens reported in the literature where the color is restricted to the pileum, the present specimen has chestnut-tipped feathers on parts of the body and wings as well. Contour feathers tipped with chestnut are most prominent on the breast, lower back, and upper tail coverts, where they produce a spotted and blotched effect. Regions with a few chestnut-tipped feathers,