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Prolonged Incubation by a Long-eared Owl.—Prolonged incubation has been reported for a number of bird species (e.g., Skutch 1962), but I am aware of only one record for an owl. East (1930) observed a Common Barn-Owl (*Tyto alba*) that incubated 10 eggs for 12 weeks.

On 24 March 1981 I found a female Long-eared Owl (*Asio otus*) that appeared to be incubating at a nest in the Snake River Birds of Prey Area along Fossil Creek, Owyhee County, Idaho. I visited the nest 7 times in 8 weeks and observed the female in an incubation position each time. I neither flushed the female nor observed nest contents during any of these visits. On my eighth visit, on 27 May, I flushed the female and collected 6 stained, infertile eggs.

Barn-owls and Long-eared Owls begin incubation with the first egg, and a meaningful definition of incubation might be the time between laying and hatching of the first egg in a clutch. Using that definition, the 65-day interval from my first to last nest visit represents a prolongation of at least 37 days beyond the normal incubation period (26-28 days, Mikkola 1973) of the Long-eared Owl. The barn-owl incubated for at least 51 days beyond the normal incubation period (33 days, Prestt and Wagstaffe 1973).

Long-eared Owl eggs hatch asynchronously and the laying (and thus hatching) interval can be irregular. Whitman (1924) reported Long-eared Owls laying on alternate days, and Armstrong (1958) recorded laying intervals of 1 to 5 days. Given the variability in laying interval, a 6-egg clutch might hatch over a period of 1 to 2 weeks. A similar or perhaps longer hatching period would be required for a clutch of barn-owl eggs.

Prolonged incubation provides a margin of safety for eggs that take longer than normal to hatch (Holcomb 1970), and many species will incubate unhatchable eggs for 50 to 100% longer than the normal incubation period (Skutch 1962, Holcomb 1970). Holcomb (1970) suggests that excessive prolongation would be nonadaptive for birds that can renest after a nest failure. The prolongations reported for the barn-owl and Long-eared Owl represent about 150% of the normal incubation periods and thus might be considered excessive, especially since both species can renest after failure during incubation (Marti 1969, and pers. observ., respectively). I suggest that prolonged incubation behavior is related to the time interval in which an entire clutch would normally hatch. Species laying large clutches that hatch asynchronously (e.g., some owls) may be more likely to prolong incubation more than species whose eggs hatch in a short time interval.

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Lack of Vocal Mate Recognition in Female Red-winged Blackbirds.—The vocal recognition of mates as individuals, though generally assumed to occur, has been demonstrated for only a few avian species. All or most of these species breed monogamously (Beer 1970). In an effort to determine if polygynously breeding birds recognize their mate's vocalizations, we presented territorial female Red-winged Blackbirds (*Agelaius phoeniceus*) with playback tapes of mate and non-mate male songs. We assumed that differential responses to mate and non-mate song would indicate that females were recognizing their mates.

Red-winged Blackbirds are exceptional in that the females sing characteristic songs in connection with the establishment and maintenance of individually defended "sub-territories" within the confines of the male's larger territory (Nero 1956, pers. obs.). Female Red-wings sing two fairly distinct song types (Fig. 1a–b). The females' Type 2 songs are evoked by territorial intrusion, both by conspecific females and by other species, and likely function as aggressive, territorial songs. Type 1 song is evoked during the early part of the breeding season by male song, and probably functions in pair-bond maintenance (Beletsky 1983). During the early weeks of the breeding season, a male's song delivery is closely followed in time by his mate's song (Fig. 1d) (Smith and Reid 1979); the female's Type 1 song either immediately follows male song, or is initiated midway through the male's song. Upon listening to this vocal interaction, we had the impression that the females were responding specifically to their mates' songs. Females seldom responded to songs of other territorial males nearby, but responded frequently to their mates' songs.

This study was conducted during the spring of 1977 on a maturing field in Old Field, Long Island, New York. Males in the present study had 1–3 females nesting on their

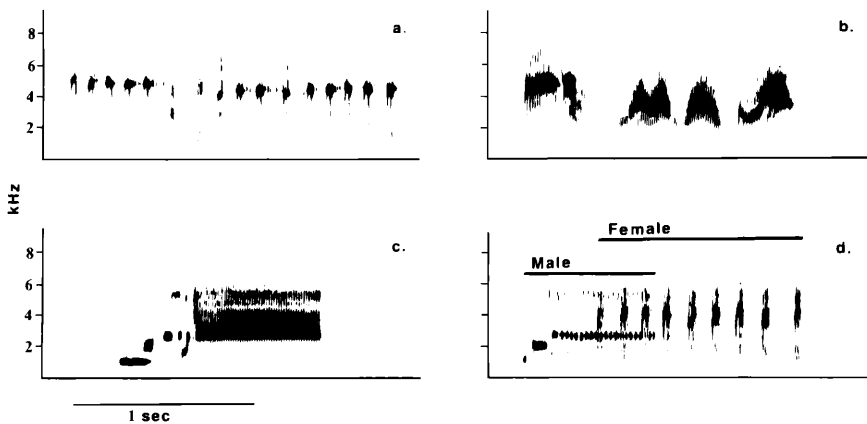


FIGURE 1. a. Type 1 female song; b. Type 2 female song; c. typical male song; d. Type 1 female song immediately following, and overlapping, male song.