BREEDING BIOLOGY OF HOUSE SPARROWS:

Observations of a Suburban Colony

By Peter E. Lowther

House Sparrows (*Passer domesticus*) first appeared in North America at New York in 1852. The introduction of this species as an aid to farmers was supported and encouraged by the United States. But a mere 22 years later, when the species first appeared in the Chicago area, the favorable public opinion had already radically changed (Barrows 1889).

House Sparrows are human comensals and are rarely found away from urban or agricultural habitats. Cities in the 1800s provided an environment ideal for House Sparrows: buildings with nooks and crannies for nesting and roost sites and an abundance of food. This food came indirectly from the care and maintenance of the primary means of transportation — horses — as spilt feed and undigested seeds in manure. With the beginning of automobile transportation, sparrow abundance shifted from cities to rural agriculture areas (Rand 1956). Most North American studies of House Sparrows have examined, understandably, rural sites where sparrow numbers are often enhanced by concentrations of farm animals (see Lowther and Cink 1992). Here I report general data on breeding biology from a suburban sparrow population.

House Sparrow, 5 May 1995. Salisbury, IL. Photo by Dennis Oehmke.

METHODS

Study Site: In October and November 1987, I placed 7 nestboxes on the garage at my residence in Homewood, Cook County, Illinois. Nestboxes measured about 14 x 14 x 20 cm with a 3.8 cm diameter entrance hole, and were placed between 1.7 and 2.4 m above ground. In successive years I added to the number of nestboxes until 25 were present in 1995. Median nearest neighbor distance for boxes was 61 cm (range 20 - 521 cm, n= 25).

Homewood is located about 37 km south of Chicago at about 41_ 33' N, 87_ 39' W, at 200 m elevation. Homewood is a residential village with population of 19,278 (1990 census) or 1,404 per km^2 and is surrounded by other similar Chicago suburbs. Nearest croplands are isolated fields about 3 km distant; nearest livestock are much farther away.

Field Routine: Nestboxes were checked regularly to allow determination of dates of egg laying, hatching, nest losses, and young birds leaving the nest. For the first few years this interval was once every 3 days; for later years, every other day. Occasionally, due to my absence, a longer interval was necessary; sometimes I checked nests daily. For each nest check, I recorded nest contents. I numbered eggs and measured length and width to nearest 0.1 mm and mass to the nearest 0.1 g. I measured young to the nearest 0.25 g and banded them with USF&WS bands when they reached 15 - 20 g in mass. Actual, or estimated, mass of surviving young at age 7 days was used as a measure of nestling quality. These procedures were the same I had used elsewhere (Lowther 1979, 1983; see also Murphy 1978a, 1978b). Completed clutches were those clutches known to be incubated and/or containing a "last" egg with less dense pigmentation spotting (see Lowther 1988). I could not account for the fate of all eggs at hatching; number of young hatching recorded was either minimum hatch (which counted only those young known to have hatched), or maximum hatch (which assumed that unaccounted eggs hatched). Young known or presumed to have left the nest contributed to measures of nestling survival.

Brood XIII of periodic cicadas (*Megacicada* ssp) emerged during 1990 in the Homewood area. Cicadas were above ground between 28 May and 6 July, with peak numbers about 17 June 1990. On 18 July 1993, I positioned 12 boxes (including 2 with active nests) about 16 cm higher in response to a period of systematic predation by a cat. European Starlings (*Sturnus vulgaris*) used 1 or 2 boxes during 5 years of the study, gaining entrance either by lifting the box's lid and entering the top (this method prevented by adding latches to most boxes) or by enlarging the entrance hole. Two boxes available