

Ten of the eleven starved nestlings were either the youngest or next to youngest bird in the nest at the time of death (Table 1). This is similar to the situation in certain asynchronously-hatching raptors, in which the young that starve are the weakest and least able to compete for food.

As there were no traces in or around the nest of younger (ten days of age or less) nestlings that starved (or of unhatched eggs or eggshells), these were probably eaten or removed by the parents. The 16-day-old starved nestling remained in the bowl of the nest. Removing the younger dead nestlings but leaving older ones has also been observed for five corvid species in England (Holyoak, op. cit.).

Excluding clutches that failed completely, 86.7 percent of the eggs laid in 1972 hatched and 90.9 percent in 1973. Davis and Griffing (op. cit.) reported a hatch rate of 63 percent. This apparent discrepancy and their conclusion that White-necked Ravens hatch nearly simultaneously may be partly explained if they underestimated hatching rate and neglected early nestling mortality. Within the weekly interval between their observations the nestlings could have hatched over a three- or four-day period, one or two of the youngest could have died of starvation, and the parents could have disposed of the dead young, eggshells, and unhatched eggs. The remaining young would then be approximately the same size. The differences in hatching rates could possibly reflect adjustments to local or seasonal food supplies; however, this conclusion would be inappropriate in view of the small sample sizes.

I wish to thank Ralph J. Raitt and Walter G. Whitford for helpful criticisms of the manuscript.—RICHARD MISHAGA, *Department of Biology, New Mexico State University, Las Cruces, New Mexico 88003. (Present address: Stone and Webster Engineering Corporation, Environmental Engineering Division, Boston, Massachusetts 02107.) Accepted 12 December 1973.*

**Molt schedule of House Sparrows in northwestern Texas.**—From January 1971 through July 1972, I collected House Sparrows (*Passer domesticus*) in Lubbock and Hockley Counties, Texas, as part of a study of the quill mite, *Syringophiloidus minor* (Berlese). As examination for the mite involved individual removal of all primaries, primary coverts, secondaries, and rectrices, I routinely recorded data on molt status. Juvenile birds were determined by the degree of cranial ossification (Nero, Wilson Bull., 63:84-88, 1951).

Fifty-nine juveniles were collected in 1971. Molt was first noted in a bird collected on 4 August. Twelve juveniles taken during May (2), June (3), and July (7) had not begun molt. The height of the postjuvinal molt occurred in August and September, when 50 percent and 87.5 percent, respectively, of the birds were molting (Table 1). Greatest involvement of feather tracts occurred in September when 70 percent ( $N=7$ ) of the molting birds had simultaneous renewal of primaries, secondaries, and rectrices. The last juvenile to evidence molt was collected on 22 November.

Sixty juveniles were collected from April through July 1972. The single juvenile collected during April was not molting, but in May, six of eight juveniles collected were in molt—the first on 15 May. During June, 21 of 24 and in July, 22 of 27 birds evidenced molt.

A total of 130 adults was collected from July through November 1971. Eight of 11 females collected on 28 July were the first to evidence molt. These birds were collected at night from nests where they were either incubating eggs or brooding young. Primary one was in various stages of exsheathment on all birds.

TABLE I  
MOLT SCHEDULE OF HOUSE SPARROWS DURING 1971

		No. of Birds Examined	Stages of molt in specimens		
			Molt not begun	Molt in progress	Molt com- pleted
July	Juveniles	7	100%	—	—
	Adults	38	79%	21%	—
Aug.	Juveniles	18	50%	50%	—
	Adults	23	30%	70%	—
Sept.	Juveniles	8	12.5%	87.5%	—
	Adults	31	—	97%	3%
Oct.	Juveniles	9	—	22%	78%
	Adults	21	—	70%	30%
Nov.	Juveniles	12	—	25%	75%
	Adults	17	—	18%	82%

The height of the postnuptial molt occurred in September when 97 percent of the birds examined were molting (Table 1). The greatest involvement of feather tracts also occurred in September when all (N = 30) of the molting birds had simultaneous renewal of primaries, secondaries, and rectrices. The last adults to exhibit molt in 1971 were a male and female collected on 9 November.

During 1971 six adults were collected in which molt had stopped following replacement of primaries one and two. Four of these birds were caged for observation, and molt resumed in all after intervals of eight, 10, 16, and 47 days, respectively. This suggests that the birds had experienced molt suspension (King, Condor, 74:5-16, 1972) rather than arrested molt, where feather replacement is permanently stopped before completion.

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**The question of possible surplus females in breeding Red-winged Blackbirds.**—The Red-winged Blackbird (*Agelaius phoeniceus*) is a polygynous species, with each male having one to several females in his territory. Males holding territories appear to represent only a portion of those in the population, as Orians (Ecol. Monogr., 31: 285, 1951) found that their removal resulted in a replacement by other males in California. In females, Nero (Wilson Bull., 68:129, 1956) reported that within the territory of a male they hold their own subterritories in Wisconsin. This suggests that in a finite area, females compete for space, and thus a surplus might also exist of this sex. Brown (Wilson Bull., 81:293, 1969), however, has postulated that no such surplus exists, as the males should be able to accept all available females. To provide some insight on the question of possible surplus females in breeding populations, I have reviewed my data collected in connection with studies of reproductive behavior and physiology. The work was carried out near Waterloo, Nebraska, in 1968, with supplementary data obtained from post-breeding birds taken near Wooster and Vickery, Ohio, in 1967.

In 1968, earliest nests were found on 20 April, with the latest in late July. Table 1