Hawkins (Simpson, Chat, 36:39–47, 1972) captured a juvenile Saw-whet Owl in a mist net on 2 September 1965, at 5,800 feet, on Mt. Mitchell in the Black Mountains, Yancey County. The owl was banded and a documentary color photograph was sent to the National Photoduplicate File in Laurel, Maryland (accession no. 372-1T). Kenneth C. Parkes (pers. com.) has examined the photograph and reports that the bird is in the first prebasic (postjuvenal) molt, with the plumage indicating that the individual is a young of the year. The most recent sighting is that by Peter G. Range of a uniformly chocolate-brown juvenile on 2 September 1972, at 5,600 feet, on Devil's Courthouse in the Pisgah Ridge Mountains, Transylvania County. Devil's Courthouse is less than one mile northeast of Tanassee Bald and is the southernmost locality at which a juvenile has been reported in the North Carolina mountains.

Migration data from various localities in the eastern United States (Mueller and Berger, Bird-Banding, 38:120–125, 1967; Simpson, Chat, 32:83–89, 1968; Davis, Kingbird, 16, 1966) indicate that the earliest migratory movements of the Saw-whet Owl occur in late September and early October. The four records of individuals in juvenal plumage, all with dates at least one month prior to the species' known migratory period, combine with spring-summer records of adults to provide strong evidence that the Saw-whet Owl breeds south into the mountains of western North Carolina.—Marcus B. Simpson, Jr., *Department of Pathology, Yale University School of Medicine, 310 Cedar Street, New Haven, Connecticut 06510 and* Peter G. Range, *514 Laurel Avenue, Johnson City, Tennessee 37601.* *Accepted 21 November 1973.*

Notes on asynchronous hatching and nestling mortality in White-necked Ravens.—Asynchronous hatching is a common characteristic of bird species with long nestling periods and unpredictable food supplies (Lack, Ibis, 89:302–305, 1947). Although most passerines have short nestling periods with synchronous hatching, many corvids, with their comparatively longer nestling periods, hatch asynchronously. In the British Isles, for example, all seven native corvid species are asynchronous in hatching (Lockie, Ibis, 97:341–369, 1955), as are Common Crows (*Corvus brachyrhynchos hesperis*) in California (Emlen, Bird-banding, 13:143–154, 1942). Recently, however, Davis and Griffing (New Mexico State University Agr. Exp. Sta. Res. Rep. No. 231, 1972) concluded that in White-necked Ravens (*Corvus cryptoleucus*), "hatching was nearly simultaneous." They examined 11 nests in May and June 1971, at approximately weekly intervals, and observed that newly hatched ravens from the same nest were usually of equivalent size. Contrary to their conclusions, I have found that White-necked Ravens hatch asynchronously.

In conjunction with physiological studies, I followed physical and behavioral development of nestlings in mesquite (*Prosopis juliaflora*) communities in southern New Mexico, approximately 30 km west of Las Cruces. In the summers of 1972 and 1973, I studied seven raven nests containing eggs that hatched. These nests were visited each afternoon to record hatching of the eggs. Hatchlings were then tagged with color bands, which I replaced with larger sizes as the birds grew. I continued to visit nests, after hatching of the young, at least every other day for the first ten days and at intervals of less than five days after that. Birds were usually weighed, measured, and examined for developmental and behavioral changes at each visit. Nestling data pertinent to this discussion are summarized in Table 1. The interval between the hatching of the first and last nestling was three days for three nests, four days for three nests, and five days for one nest.

TABLE 1

SUMMARY OF WHITE-NECKED RAVEN NESTING DATA

Nest number	Clutch size	Eggs hatched	Nestlings fledged	Dates hatched	Nestling mortality per date, with ages at death and causes[1]
I.	4	4	0	2 June	2 of 2 hatched, both 18 days (M)
				4 June	1 of 1 hatched, 7 days (S)
				5 June	1 of 1 hatched, 15 days (M)
II.	5	4	0	15 June	2 of 2 hatched, both 21 days (M)
				16 June	1 of 1 hatched, 10 days (S)
				18 June	1 of 1 hatched, 2 days (S)
III.	6	5	4	25 June	none of 2 hatched
				26 June	none of 2 hatched
				27 June	1 of 1 hatched, 3 days (S)
IV.	6	5	3	26 May	none of 2 hatched
				27 May	none of 1 hatched
				29 May	1 of 1 hatched, 2 days (S)
				30 May	1 of 1 hatched, 1 day (S)
V.	6	6	3	29 May	1 of 3 hatched, 7 days (S)
				30 May	1 of 2 hatched, 6 days (S)
				31 May	1 of 1 hatched, 16 days (S)
VI.	5	4	3	3 June	none of 2 hatched
				4 June	1 of 1 hatched, 10 days (S)
				5 June	none of 1 hatched
VII.	5	5	2	16 June	2 of 3 hatched, 8 and 15 days (U)
				17 June	none of 1 hatched
				19 June	1 of 1 hatched, 5 days (S)

[1] Causes of mortality were: M = man; S = starvation; U = unknown.

Nest robbing by man and starvation accounted for most of the nestling mortality. Man was considered the cause of mortality if human and vehicle tracks were found leading to the nest site. The high human mortality factor may be partly attributed to the conspicuousness of ravens' nests and the fact that these nests were located near a populated area on public domain heavily used for recreation. Starvation was assessed as the cause of mortality if the nestling was not diseased, and if, for two or three observations preceding death, it showed abnormally low growth rates and developmental retardation.

Of the 11 nestlings assumed to have starved, eight died within the first eight-day interval, two at ten days, and one at 16 days (Table 1). This pattern, where most of the nestling mortality falls within the initial one-third of the nestling period, has been noted for Rooks (*Corvus frugilegus*) and Carrion Crows (*C. corone*) by Holyoak (Bird Study, 14:153–168, 1967). He suggested that this may be partially due to these species hunting for food farther afield than other British corvids, which have different nestling mortality patterns. Therefore, during the interval when most frequent feedings are required for the young, nestling mortality would be great. This explanation may also hold for White-necked Ravens which often forage at distances greater than 2 km from their nests (pers. obs.).

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 discrepency 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 postjuvenal 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.