young Mistle Thrushes (*T. viscivorus*) showed abortive nest-building behavior in an aviary (Goodwin, Br. Birds 47:81–83, 1953), and a captive 17-day-old Swainson's Thrush (*Catharus ustulatus*) made nest-building movements when held in cupped hands (Dilger, Wilson Bull. 68:157–158, 1956). All three observations of nest-building behavior in young thrushes occurred when the stimulus of an object of appropriate form was present. Juvenile robins have been reported to show other adult reproductive behavior including incubation (D'Agostino et al., Condor 84:342, 1982) and feeding nestlings (Favell, *in* Nice, Trans. Linn. Soc. N.Y. 6:79, 1943).

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The hiss-display of nestling Black-capped Chickadees in captivity.—Hissing occurs in many hole-nesting birds (Sibley, Wilson Bull. 67:128–132, 1955), but it is especially prevalent in parids (Hinde, Behav. Suppl. II, 1952). Gompertz (Vogelwelt 88:165–169, 1967) observed the "hiss-display" of a captive adult female Great Tit (*Parus major*) in a nest box. Adult female Black-capped Chickadees (*P. atricapillus*) hissed while being held in a swaying sock (Ficken et al., Auk 95:34–48, 1978) and while in a wire mesh trap (Dixon, Wilson Bull. 95:313–314, 1983). Nocturnal hissing has been reported in nestling Blue Tits (*P. caeruleus*) and Coal Tits (*P. ater*) (Winkel, Vogelwelt 93:68–71, 1972). Nestling chickadees begin hissing at about 12 days of age (Odum, Auk 58:518–535, 1941; pers. obs.). Here we describe hissing by nestling Black-capped Chickadees in the context of nest defense.

From 1979 to 1981 we hand raised four broods of chickadees taken from nest cavities in southeastern Wisconsin. The young hissed on numerous occasions when the cloths covering their bowl "nests" were lifted, and once when one brood was being transported in a swaying mosquito-net hat. Hissing also occurred when one nestling jostled another, sometimes during the night.

Hisses were recorded both in the field and in captivity with a Uher 4200 Report Stereo tape recorder and an Electro-Voice Soundspot 644 or Sennheiser MKH 104 microphone; the calls were analyzed on a Kay 7800 Digital Sona-Graph. The call resembles white noise extending from about 0.5 to 6.0 kHz or more. The mean duration of the hiss in nestlings both in captivity and in natural cavities was 0.90 sec (N = 44, range = 0.30–1.32 ± 0.24 [SD]); this was more than 5 times longer than that reported for adult chickadees ($\bar{x}$ = 0.159 ± 0.072 sec [Ficken et al., 1978]; and $\bar{x}$ = 0.16 ± 0.02 sec, N = 3 [pers. obs.]).

Gradations in intensity were evident in the hiss-displays of the captive nestling chickadees. For example, a nestling sometimes hissed and lunged forward with wings spread, often jumping out of the nest. In other cases, the hiss was accompanied by the wings being spread very quickly in an arc-like fashion forward and downward, with the tail spread and crest raised. This pattern, like that described by Pickens (Auk 45:302–304, 1928), Löhrl (J. Ornithol. 105:153–181, 1964), and Gompertz (1967), often ended with the bird in a posture with the head tucked down and tail up. Hisses were also heard in the absence of any apparent wing-spreading or lunging. On those occasions, the bird hissed and cowered, with its head tucked down and tail up. Nestlings also cowered silently and sometimes hissed without any discernible visual display. These variations in the hiss-display may have been due to one

or more of the following: (1) variable stimulus intensity, (2) the caller's position in the nest inhibiting movement and obstructing our observation, and (3) individual variation.

The behavior of the captive nestlings described here and of adult chickadees reported by Ficken et al. (1978) and Dixon (1983) parallels that of free-living birds in nest cavities. In all instances, the chickadees hissed when disturbed while entrapped in a confined space from which their escape was thwarted. In such a context, the survival value of the hiss probably lies in its ability to startle and deter a potential predator.

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Nestling Great Crested Flycatcher parasitized by larval fly (*Protocalliphora hirudo*).—Nestling birds often are parasitized by blow fly larvae (*Protocalliphora* spp.) (Diptera: Calliphoridae), hematophagous parasites that attack nestlings of many nidicolous birds (Gold and Dahlsten, Wilson Bull. 95:560–572, 1983). To the best of our knowledge, this note reports the first known occurrence of *P. hirudo* in the Great Crested Flycatcher (*Myiarchus crinitus*).

On 8 July 1984, we found a nestling Great Crested Flycatcher on the ground at 1080 m in Giles County, Virginia, in an Appalachian mixed-oak forest. The nestling, which was near fledging, had 5 larvae imbedded subcutaneously. Four larvae were located about the head and one larva was in the right wing wrist joint. The larvae were collected, reared to adulthood and identified.

P. hirudo apparently is the only Nearctic species in the genus whose larvae are obligate subcutaneous parasites (Bedard and McNeil, Can. Entomol. 111:111–112, 1979). All other *Protocalliphora* are intermittent ectoparasites that live in the nest material (Gold and Dahlsten 1983).

Gold and Dahlsten (1983) reported a single *P. hirudo* larva in the cavity-nesting Mountain Chickadee (*Parus gambeli*). The other North American records for birds infested by *P. hirudo* are for open-cup nesters, probably due to the ease with which ornithologists can find these nests and examine nestlings. Species recorded include: Savannah Sparrows (*Passerculus sandwichensis,* Bedard and McNeil 1979), Wilson's Warblers (*Wilsonia pusilla,* Rausch, Aquilo Ser. Zool. 13:1–4, 1974), Chipping (*Spizella passerina*) and Vesper sparrows (*Pooecetes gramineus,* Bennett, Ph.D. diss., Univ. Toronto, Toronto, Ontario, Canada, 1957), Goldfinches (*Carduelis* spp.), and Yellow Warblers (*Dendroica petechia,* Hicks, Iowa State J. Sci. 46:123–338, 1971).

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