are rare in the Parulinae (Parkes 1978; Bledsoe, 1988), and it would seem unlikely that the crown patch in Tennessee Warblers is a consequence of hybridization. None of those we have examined with rufous crown feathers would appear to be anything but typical Tennessee Warblers in other respects. With more than one percent of the population exhibiting rufous crown feathers, it seems much more likely that the rufous is a vestigial plumage pattern of the type typically found in most other members of the genus *Vermivora.*

Among other *Vermivora* warblers in which the males exhibit obvious rufous crown patches, it might be presumed that these patches serve a display function. It seems very unlikely, however, that the coloration now serves any display function in Tennessee Warblers, since it is either very restricted or very pale.

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American Goldfinch nests in purple loosestrife.—Bird foraging, nesting, and other activities are often closely related to vegetation characteristics. Introduced plants may alter the architecture and chemistry of the plant community, potentially affecting the food base and nest substrate available to birds. One non-indigenous plant, purple loosestrife (*Lythrum salicaria*), is said to have little value to North American wildlife, and a biological control program is predicted to dramatically reduce American populations of loosestrife (Malecki et al. 1993). Here I report American Goldfinch (*Carduelis tristis*) use of loosestrife as nest substrate.

The American Goldfinch is a widespread breeding bird in North America and nests in a variety of habitats that include parks and yards with ornamental vegetation, weedy waste grounds, forest edges, fence rows, old fields, abandoned orchards, shrub swamps, and marshes. Nickell (1951) and Smith (1988) suggested that pre-Columbian habitats were beaver

TABLE 1

AMERICAN GOLDFINCH NESTS IN PURPLE LOOSESTRIFE, SOUTHEASTERN NEW YORK

Dimension	Mean	Median	IQR[b]	Range	N
Nest rim to soil (cm)	140.3	134	121–182	90–190	7
Plant height from soil (cm)	229.7	224	200–246	192–315	7
Nest height fraction of plant height (%)	60.9	60.3	54–66.7	45–74	7
Maximum plant diameter at level of nest (cm)	94.2	94	67–114	58–152	12
Nearest woody plant >1 m tall (m)[a]	14.6	11.5	6.5–21	2–34	12
Nearest open water >1 m wide (m)[a]	9.2	4	1–16	1–37	11
Nearest shore (upland) (m)[a]	19.4	17	0–29	0–71	11

[a] Paced or estimated from maps.
[b] Interquartile range.

meadows, wetlands, lake and river banks, and burn areas. Purple loosestrife, a robust, shrub-like forb introduced to North America ca 1800 (Thompson et al. 1987), is common in the moister types of habitats used by nesting goldfinches in New York.

From 1971 to 1994, in the course of other field work, I found 15 American Goldfinch nests in purple loosestrife in Dutchess and Ulster counties in the Hudson Valley (Table 1). I have deposited voucher photographs at Visual Resources for Ornithology (VIREO catalog numbers v06/22/001 through v06/22/004; Academy of Natural Sciences of Philadelphia, Philadelphia, Pennsylvania). Three nests were active and 12 abandoned, the abandoned nests identified by a persistent accumulation of nestling feces on the nest rim (Walkinshaw 1939, Berger 1971:258).

The goldfinch nests were above water or intermittently saturated soil as follows: five in flooded nontidal marshes, two in the upper intertidal zone of a freshwater-tidal marsh, two at pond margins, two in patches of unmowed wet meadow within mowed fields, one in a patch of wet meadow in a dry old field, two in extensive wet old fields, and one in a small roadside wetland. The nests were attached-statant and resembled types 1, 2, and 6 illustrated by Nickell (1958) for the goldfinch. The nests were typically woven around several primary vertical stems of loosestrife and their ascending secondary branches, with the branches preventing the nests from sliding down the primary stems. Nests were attached to stalks of the current year (8), previous year (1), or both years (2), and remained identifiable through one or even two winters (Smith 1988). The nests were in tall, wide, many-stemmed loosestrife clumps near or touching other robust loosestrife (Table 1). The nests were not wider than high (contra Allen 1934), probably the result of attachment to the vertical stalks of loosestrife rather than being saddled on horizontal branches of woody plants.

Goldfinch nesting habitat, nest sites (plant species), and nest height vary greatly (Berger 1971), but nests are not placed on wholly artificial substrates or on the ground (Nickell 1951). I compiled literature reports of 5991 nest substrate records, predominantly (94%) from the Great Lakes region, representing 87 plant species or genera. Of these records, 87.5% are in broad-leaved trees or shrubs and only 11.6% in herbs (almost all thistles [*Cirsium*]). The same records comprise 55% nests in plant taxa native (Gleason and Cronquist 1991, Peattie 1991) to the American Goldfinch breeding range, 1% in introduced taxa, and 44% not determinable as native or introduced (mostly hawthorns [*Crataegus*] and willows [*Salix*]). The records are 32% wetland plant taxa following the classification of Reed (1988), 22% upland taxa, and 46% ambiguous (mostly hawthorns, elms [*Ulmus*], and maples [*Acer*]). The data compilation and a list of sources have been deposited at the National

Technical Information Service (NTIS Accession Number PB95-226965; 5285 Port Royal Road, Springfield, Virginia 22161).

Nickell (1958) remarked that American Goldfinch and Red-winged Blackbird (*Agelaius phoeniceus*) are exceptions to the rule that bird species nesting above the ground do not attach nests to herbs because they are weak, insufficiently branched, and not fully grown at the peak of the nesting season. Goldfinch nests with shorter distances from woody plants (Table 1) suggest loosestrife was occasionally selected in preference to apparently suitable woody species close by, and nests with longer distances indicate loosestrife allowed goldfinches to nest in the interiors of herbaceous wetlands not otherwise usable. Purple loosestrife is intermediate in growth form between the shrubs and the thistles used by nesting goldfinches. Like the thistles, loosestrife shoots develop late; they do not reach full height until August (Rawinski 1982:27). Most goldfinches begin nest construction mid-June to mid-August. The late development of loosestrife may make it unsuitable for some marsh birds that build elevated nests in May and June.

McCabe (1991:50, 55) believed concealment from predators, weather, sunlight, and conspecifics the key factor governing taxonomic choice of nest site in the Willow Flycatcher *Empidonax traillii* Goldfinch eggs, nestlings, and sitting females are vulnerable to overheating in the sun and to chilling in rain and wind (Mayer 1981, Kleinhenz 1984). Eggs and nestlings can also drown when tightly constructed nests fill with rain (Allen 1934). Kleinhenz (1984) found that successful nests had more overhead vegetation cover, and that goldfinches selected broad-leaved rather than narrow-leaved hawthorns. Mature loosestrife has a dense leafy crown that presumably shelters goldfinch nests from sun, wind, and rain; tall, dense loosestrife growth probably also conceals nests from predators and the Brown-headed Cowbird (*Molothrus ater*).

Wetlands can be refuges from predation and brood parasitism (Kiviat 1989). Expanses of soft wet soil, stream channels, or frequent flooding may deter some mammals and snakes from reaching nests. Many potential avian predators and the Brown-headed Cowbird do not venture far into marshes that lack tall shrubs or trees. Low rates of nest predation and brood parasitism of blackbirds, Swamp Sparrow (*Melospiza georgiana*), and Song Sparrow (*M. melodia*) have been recorded in extensive marshes (Johnston 1956, Friedmann 1963, Meanley and Webb 1963, Ortega and Cruz 1991).

Native birds commonly nest in certain introduced plants, e.g., shrubby honeysuckles (*Lonicera* spp.), common buckthorn (*Rhamnus cathartica*), and multiflora rose (*Rosa multiflora*) DeGraaf et al. 1975, Whelan and Dilger 1992), whereas other aliens such as tamarisk (*Tamarix* spp.) (Brush 1983, Ohmart et al. 1988:156–157) are rarely used, and not all native species are used equally (Berger 1971:217). Although the American Goldfinch more often nests in native than introduced plants, a few abundant alien taxa are used. The breeding range of the American Goldfinch (AOU 1983) and the American range of purple loosestrife (Thompson et al. 1987:19) are nearly conterminous, making loosestrife a potential nest substrate for the goldfinch over much of its range. In extensive marshes lacking woody vegetation, loosestrife could have facilitated an ecological extension of goldfinch nesting habitat. Native forbs that form tall clumps and dense patches in marshes and wet meadows rarely provide a structure as dense, leafy, and sturdy as that of mature clumps of purple loosestrife.

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Opportunistic winter water acquisition by Pine Grosbeaks.—The sparse documentation of water acquisition by birds in cold regions is limited primarily to observations of consumption of water in a frozen form. Methods reported include Pine Siskins (*Carduelis pinus*) eating snow, Cedar Waxwings (*Bombcilla cedrorum*) catching snowflakes during a storm (both by Dr. Glover Allen as cited in Gordon (1934) and in Allard (1934)), and "Song Thrush" chipping ice (Harding 1986). Allard (1934) also reported "starlings" eating snow and catching snowflakes. Other species observed eating snow include the "Redwing (*T. iliacus*) and Blackbird (*T. merula*)" (editors note following Harding [1986]), and Bohemian Waxwing (*B. garrulus*) (pers. obs.).

This note documents the opportunistic exploitation of free water droplets in a cold region in winter by Pine Grosbeaks (*Pinicola enucleator*). It also notes that this species has the ability to hover, somewhat like a hummingbird, for short periods.

Lone Pine Grosbeaks were observed on 7 November 1992 and again 20 December 1994 at a site about 24 km northeast of Anchorage, Alaska, in Eagle River Valley (61°19′N/149°28′W), flying from a cottonwood tree (*Populus* sp.) perch to hover briefly below an icicle as a droplet of water formed. The droplet was sipped off the end of the icicle and then the bird returned to its perch in the tree about 1.5 m away. This process was repeated 5–10 times over a 5-min period. The icicles were forming off the roof of a cabin located on a south-facing 27° slope. The area is under what Viereck et al. (1992) classifies as an "open poplar" (I.B.2.c) or "open spruce-poplar" (I.C.2.d) forest and receives its first measurable snowfall in September and is snowfree by mid April (pers. obs). The area is visited intermittently throughout the winter months by Pine Grosbeaks. Temperatures prior to both observations varied somewhat (±3°C) but were consistently subfreezing ($\bar{x} = -10$°C) at night (National Weather Service, pers. comm.; NOAA 1992) and at or above freezing (0–5°C range) during the day at the 610 m elevation observation site. Both observations were preceded by snowfall of 25 cm (6–7 November 1992) (NOAA 1992) to 46 cm (15–18 December 1994) (pers. obs.). These conditions led to droplet-producing icicles along the south-facing roof pitch.

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