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Nest-construction tactics in the Cedar Waxwing.—Nest construction involves a large expenditure of time and energy (Collias and Collias 1984). Putnam (1949) estimated that building a nest would require a pair of Cedar Waxwings (*Bombycilla cedrorum*) to make over 2500 trips. In addition to the cost of transporting material to the nest site, observations of the struggles of birds to break off twigs or pull fibers loose, and the frequent failures involved, suggest that nest building is an energetically expensive activity. Nonetheless, it seems that little attention has been paid to the tactics that birds might use to reduce the costs associated with nest construction. Collias and Collias (1984) suggested that energy costs may be reduced considerably if good sources of nest materials are located close to the nest site. Skutch (1976) suggested that birds may save labor by removing material from other nests, either deserted or occupied, and gives examples of such behavior in several tropical and colonial nesting species.

During a study of the breeding biology of the Cedar Waxwing at the Prince Edward Point National Wildlife Area, near Picton, Ontario, we made a number of observations of waxwings engaging in activities that could substantially reduce the large expenditure of time and energy required for nest building. These involved taking material from either old nests or active nests of other birds, and reusing abandoned nests of conspecifics.

On several occasions we observed waxwings taking material from old nests of Cedar Waxwings and other species. The main drawback to gathering material from old nests is likely to be the possibility of acquiring ectoparasites from the material. Putnam (1949) reported two cases of Cedar Waxwings deserting nests infested with mites, and in both

instances the birds had taken nesting material from old nests of Common Grackles (*Quiscalus quiscula*). This possibility may be reduced when birds take material from active nests under construction. Tyler (1950) commented on Cedar Waxwings stealing material from active nests of other birds, and he mentioned the Eastern Kingbird (*Tyrannus tyrannus*) and Yellow-throated Vireo (*Vireo flavifrons*) as species that have been recorded as victims of this behavior. At Prince Edward Point, we have seen waxwings taking material from active nests of Eastern Kingbirds, Northern Orioles (*Icterus galbula*), and American Robins (*Turdus migratorius*). Waxwings have also been observed on a number of occasions removing substantial quantities of material from active nests of Yellow Warblers (*Dendroica petechia*) near Elgin, Ontario (M. Studd, pers. comm.). This tactic suffers somewhat from the relative scarcity of nests that are under construction, as well as the owners' defense of their nest when the waxwings are observed carrying off material.

In addition to taking material from old nests, we observed 3 cases in which a pair of waxwings apparently took over and renovated an abandoned Cedar Waxwing nest. One nest was found by us on 11 June 1984 with the female sitting on the nest. The pair deserted the nest, however, probably in response to our disturbance. By 15 June the nest had deteriorated noticeably. Waxwings were noticed visiting this nest again on 15 and 17 July, and on 23 July a female was sitting on the nest. Four young were eventually fledged from this second nesting attempt. In 1985 two similar occurrences were recorded. We discovered one of the nests while it was still under construction on 17 June. We assumed that eggs were laid and incubation had begun because the female was sitting on the nest as late as 28 June. The nest was abandoned for unknown reasons, possibly due to predation (it was empty on 12 July). On 18 July, however, a female was sitting on the nest, and this nesting attempt produced 5 young which fledged around 13 or 14 August. The other nest was found on 28 June while it was under construction. It was active until at least 5 July, but was later abandoned for unknown reasons. On 20 and 22 July, however, 2 waxwings were carrying material to the nest and apparently rebuilding it. This pair eventually produced young, but the nest was depredated between 12 and 15 August. On closer examination we found that in this case the birds had not renovated the old nest but had built a separate structure on top of the old cup. In all 3 cases, the birds involved in the first attempt were not marked, so it is not certain if the same pair returned to their old nest or a new pair occupied it. It seems unlikely, however, that a pair would return to a nest they had already abandoned.

In instances of nest reuse where the birds do not build a new nest cup they may realize a significant energy savings. It is possible though that this behavior may have drawbacks. In addition to the problem of ectoparasites, an old nest might be contaminated by fecal material if it has been occupied by nestlings. It seems likely that only unsuccessful nests will be suitable for reuse, as nests that have housed a brood of large nestlings tend to become expanded and flattened by the activity of the young. If the location of the nest site is associated with the probability of fledging young, for example by being in an area regularly visited by a predator, then reuse of unsuccessful nests may decrease the chance of successfully raising young (Blancher and Robertson 1985).

Most species of birds build their own nest, and typically build a new nest for each brood. The use of a nest built by other individuals of the same species seems to be uncommon, perhaps because such a nest is likely to be defended by the original owners if it is still suitable, and conspecifics are apt to be relatively equally matched competitors. Nonetheless, in species that are site limited or which build complex nests, the same nest may be used repeatedly. However, nest reuse seems to have been rarely reported among the very large number of passerine species which build open cup nests. Nest reuse has been reported in the American Robin (Tyler 1949) and in the Eastern Kingbird (Blancher and Robertson 1985). In robins at least, though, the nest was believed to be reused by the same pair. Nolan

(1978) noted one case where a female Prairie Warbler (*Dendroica discolor*), after having its own nest destroyed by the investigator, apparently used a nest that had been abandoned by another female.

Reuse of nests abandoned by conspecifics may be more likely to occur in Cedar Waxwings than in other passerines because of two factors. First, the absence of territorial behavior may allow other pairs access to old nests, and secondly, the propensity of this species to desert its nest (Tyler 1950) may increase the probability of a pair finding a complete nest. The tactics described here for Cedar Waxwings could result in a significant reduction in the costs associated with nest construction. More work is needed to ascertain how these benefits might be offset by drawbacks such as a potential reduction in nest success. Researchers studying the breeding biology of other open-nesting passerines should consider the possibility that other species may use similar tactics, as further information could provide useful insights into the selective pressures operating on nest-building behavior.

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Sightings of Golden-cheeked Warblers (*Dendroica chrysoparia*) in northeastern Mexico.—Relatively little is known about the Golden-cheeked Warbler (*Dendroica chrysoparia*) outside of its breeding range in the Edwards Plateau of Texas. Although it has been reported that the species winters in southern Mexico (Miller et al. 1957, Alvarez del Toro 1980, Braun et al. 1986) and Central America (Pulich 1976), observations of this species during migration are rare. Pulich (1976) summarized spring migration records outside the United States and noted only a single record other than in the northern regions of the Sierra Madre Oriental