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Nest-site differences between Red-headed and Red-bellied woodpeckers in South Carolina.—Red-headed (*Melanerpes erythrocephalus*) and Red-bellied (*M. carolinus*) woodpeckers are potential competitors for nest-sites over much of their range. Parameters serving to lessen competition between them have been discussed by Reller (Am. Midl. Nat. 88:270–290, 1972) for Illinois and by Jackson (Condor 78:67–76, 1976) for Kansas. Reller states that “All Red-heads observed nested in trunks of dead trees. Red-bellies, on the other hand, favored dead limbs in live trees for nest sites,” her observations having been made in oak-maple-hickory woodlands. Jackson (op. cit.), studying the 2 species under differing ecological conditions, noted that while both species preferred to nest in dead trees, 50% of which were elms, the Red-headededs preferred nest trees with open spaces around them and Red-bellieds, ones located in woodlands. Other differences were that Red-headededs, in contrast to Red-bellieds, preferred dead limbs with no bark and ones with a crack in which to make entrance holes. The aim of this report is to describe nest-site differences under still other conditions, namely those of the coastal plain in South Carolina.

Observations were made at a quail shooting plantation in Luray in April and May 1973 to 1975. Pairs of Red-bellieds and of Red-headededs were more or less intermixed in terrain where strips of loblolly pines (*Pinus taeda*), along with scattered oaks and other deciduous trees alternated with open fields. As shown in Table 1 the Red-bellied occupied holes carved originally by Red-cockaded Woodpeckers (*Picoides borealis*) in living pines or excavated ones of their own in pines that had recently died. The outstanding feature of these latter was that they still retained bark and branches. Pairs of Red-headededs, in contrast, excavated or occupied pines dead for some years. These were well-weathered, had almost no bark, and had only broken limbs remaining. Many, having lost their tops, were no more than stubs. One exceptional dead pine fell between the categories. It had, oddly enough, a pair of Red-bellieds trying to nest in an old hole made by Red-bellieds

TABLE 1
NEST TREES OCCUPIED BY RED-HEADED AND RED-BELLIED WOODPECKERS EARLY IN THE BREEDING SEASON ON A PLANTATION IN SOUTH CAROLINA

Location of Nest Hole (completed or being excavated)	No. of Pairs	
	Red-headed	Red-bellied
Hole of Red-cockaded, living	1	6*
Recently dead pines	0	8
Old dead pines	10	0
Old pine stubs	13	0
Deciduous tree; dead trunk or limb	0	2
TOTALS	24	16

* One of the pines had died within the previous year.

the year before, 3 m from the ground; 4 m higher up a pair of Red-headededs were trying to start an excavation in the face of much harassing from other Red-headededs (Kilham, Auk, in press).

Trees chosen by the 2 species differed also in that those used by Red-headededs usually contained numbers of old holes from previous years. As a result of this latter situation, Red-headededs on the plantation shared stubs in one case with Starlings (*Sturnus vulgaris*), once with Common Flickers (*Colaptes auratus*), and once with a flying squirrel (*Glaucomys volans*). It thus seemed that Red-headededs may be more prone to share nest trees with other species, an observation concurred in by Reller (pers. comm.) although she cites an exception (op. cit.). Jackson (op. cit.) in contrast, found that Red-bellieds characteristically nested in trees with more than one hole in Kansas. These discrepancies among observers are of interest in indicating that nest-site preferences can vary with underlying ecologic conditions. A main finding that seems to emerge is that wherever studied, whether in Illinois, Kansas, or in South Carolina, Red-headededs and Red-bellieds do exhibit differences in their choices of nest sites.

Another parameter serving to lessen interspecific competition it would seem, is time of onset of breeding seasons; Red-headededs, being irregularly migratory and nesting later than the resident Red-bellieds (Jackson, op. cit.) and Kilham (Auk 75:318-329, 1958; Wilson Bull. 70:347-358, 1959).—LAWRENCE KILHAM, *Dept. of Microbiology, Dartmouth Medical School, Hanover, NH 03755. Accepted 8 Dec. 1975.*

Ground foraging and rapid molt in the Chuck-will's-widow.—In a detailed study of the annual molt of the Chuck-will's-widow (*Caprimulgus carolinensis*) Rohwer (Auk 88:485-519, 1971) inferred that some individuals might be missing so many feathers in late stages of the molt that they would have trouble flying. When growing primaries 8 and 9, Chuck-will's-widows lose all 10 of their rectrices, more or less simultaneously, and are missing up to $\frac{1}{4}$ of the primary surface of each wing (all at the critical tip), as well as nearly $\frac{1}{4}$ of the secondary surface area. At this same time the rictal bristles are also lost simultaneously.

Rohwer (op. cit.) felt it unlikely that Chuck-will's-widows in such an intensive molt could forage aerially but little more could be said of the matter at that time, partly because of the also suggestive fact that only a single specimen molting either primary 8 or 9 had been preserved. This was a bird shot by Sutton (Bull. Okla. Ornithol. Soc. 2:9-11, 1969) at the Oklahoma Biological Station. Students had flushed it from an earthen ledge near the bottom of a deep erosion gully tangled with shrubs, vines, roots, and dead branches. It was flushed again from the same area when Sutton collected it. He reported finding the area strewn with feathers, and was able to find 9 of the 10 molted rectrices, many remiges and a great number of smaller feathers.

Mengel (Wilson Bull. 88:351-353, 1976) recently collected the second known specimen in late stages of the molt. His bird was flushed 4 times before it was shot; he reported its flight as "direct and somewhat slow and labored," a striking descriptive contrast to the normally buoyant flight of a Chuck-will's-widow. The most remarkable fact concerning Mengel's specimen was that it was virtually emaciated, weighing only 86.7 g, a value 27.5% below the normal summer weight of 119.6 g (mean of 12 specimens). Sutton's (op. cit.) specimen was normal in weight (117.1 g).

The question raised by Rohwer's report on the intensity of the molt in its late stages and by the specimens taken by Sutton and Mengel is "How do Chuck-will's-widows forage in this period of intensive molt?" One possibility, suggested both by the many feathers