as in *V. affniis*. The dorsal coloration of the two *caquetanus* specimens is greener and less bronze than in most specimens of *V. affinis*, but is not yellowish as in *V. cassini*. Their nape is dull yellow-gold, resembling *V. affinis*.

The two *caquetanus* specimens differ from most specimens of *V. affinis* in their blacker ventral barring, the whiter and less buffy underparts, and their greener upperparts. These features are found in at least two specimens of *V. a. ruficeps*, and another two specimens of that form approach *caquetanus*, but are buffier below. Significantly, the *affinis* specimens resembling *caquetanus* are definitely (two cases) or possibly (other two cases) immature specimens. Both *caquetanus* specimens seem to have a thin, pliable cranium, and the AMNH specimen, at least, is an immature bird (plumage fluffy owing to weakly interlocking barbs, outer primary very long and broad).

Two years prior to describing *caquetanus*, Meyer de Schauensee (1947, Proc. Acad. Nat. Sci. Philadelphia 99: 116) discussed the future type specimen of *caquetanus*, concluding "As we have but a single specimen, apparently in adult plumage, but with the skull still soft, I hesitate to describe it." It seems likely that the two specimens of *caquetanus* will prove to owe their differences from *V. affinis* to their being in subadult plumage. The plumages of *Veniliornis* are poorly known, requiring study with as yet inadequate material. At present I must conclude that no single characteristic or group of traits exhibited by *caquetanus* warrants considering it to represent *V. cassini*. Rather, the likelihood that the specimens of *caquetanus* are subadults and their resemblances to *V. affinis* prompt me tentatively to consider them subadult specimens of *V. affinis orenocensis* >< *hilaris*, and I therefore treat *caquetanus* as a synonym of *V. affinis orenocensis*. The presence or absence of spotting in the wing coverts and the color of the bill are characters that might be important in species recognition where *V. cassini* meets *V. affinis orenocensis*. It seems most unlikely that a population of *V. cassini* isolated within the range of *V. affinis*, as is "*caquetanus*," would resemble *V. affinis* in bill color and in the condition of the wing covert markings, without differing substantially from *V. affinis* in other ways.

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**Loud vocalizations by Pileated Woodpeckers on approach to roosts or nest holes.**—The loud stream of "cuks" given by Pileated Woodpeckers (*Dryocopus pileatus*) flying to roost for the night is a dramatic performance. While the woodpeckers are likely to be silent if disturbed, the "cuks" occurred on 19 of 27 occasions when I was watching a pair roosting at Cabin John, Maryland between October 1958 and February 1959. In a typical example on 29 November, the male flew silently to a tree about 50 m from his roost. He waited a few minutes, then at 16:40 (sunset at 16:39), flew to his hole, 16 m up in a sycamore, uttering a barrage of "cuks." These ceased the moment he reached the hole and popped inside. The "cuks," which may be given at a rate of 3 per second, constitute a veritable stream of sound, audible at a considerable distance. On 16 November both members of the pair had flown to their roost holes in this manner, the holes being 30 m apart. I have seen other Pileated Woodpeckers perform similarly from Florida to New Hampshire.

Why should these woodpeckers advertise where they are going in such a striking

manner? In 15 years of observations on the roosting habits of six other species of woodpeckers in the eastern United States, I have encountered none with a similar habit, although Blume (1964, Vogelwelt 85: 11) describes a similar one for the European Black Woodpecker (*D. martius*). Red-headed Woodpeckers (*Melanerpes erythrocephalus*) sometimes make a considerable noise in the evening with their "quirrs" and rattles, but when flying to roost holes they are generally silent.

The Pileated Woodpeckers at Cabin John began to fly to their holes silently on 26 March 1969 when I discovered that the male had started a nest excavation in a sycamore that, by 8 April, was large enough for him to spend the night. I now wondered whether the "cuks" were a phenomenon limited to the nonbreeding season. In the course of the next 14 years I found 8 more Pileated Woodpeckers' nests, mostly on visits to Georgia and Florida and, as at Cabin John, the woodpeckers flew to them silently. Few of these nests were found early in the incubation period.

On 24 March 1973 I found a male Pileated Woodpecker finishing a nest cavity 15 m up in a dead pine in Luray, South Carolina. Incubation began 3 days later. The male did all the nest attending on the first day. At 09:35, after being away for a while, he returned making a loud series of "cuks" from 100 m away until he landed below the hole. Would he do the same on following days? I was watching below the tree not long after dawn on 28 March. The male put his head out at 06:20 to give a high call in response to the "cuks" his mate gave continuously while flying from a distance to a branch near the hole. I continued to watch the nest until the 7th day of incubation. On each day, with the exception of one I missed, either the male or the female flew to the nest hole at times of changeovers making "cuks," the bird on the nest usually answering with a single high call.

The above phenomena raise two questions. One is why the Pileated Woodpeckers at Luray should have flown to their nest in noisy fashion, while pairs observed at nests elsewhere had not. This may involve the degree of human interference. According to accounts in Bent (1959, U. S. Natl. Mus. Bull. 174), Pileated Wodopeckers were at one time hunted as game birds. It may be that an increased wariness has been a factor in their survival. When undisturbed as at Luray, they fly to both roost and nest holes with loud "cuks," whereas with increasing wariness the "cuks" may be reserved for roost holes alone, as at Cabin John. If roost holes are close to human dwellings, or an observer frightens the bird, the "cuks" may not be heard at all.

A second question is why *D. pileatus* should make vocalizations that seem almost designed to reveal the whereabouts of their holes. The European Blackbird (*Turdus merula*) is more circumspect. According to Lorenz (1970, Studies in animal and human behavior, Massachusetts, Harvard Univ. Press), it gives a loud warning vocalization, then flies silently to its roosting place some distance away. Several reasons for a reverse type of behavior in *D. pileatus* are conceivable. One is that the woodpeckers seek to startle any competitor that might be lurking in a roost hole to reveal itself, but this appears unlikely. Although flying squirrels (*Glaucomys sp.*) sometimes show themselves if one knocks on a tree, other species such as grey squirrels (*Sciurus carolinensis*) are difficult to arouse. Furthermore, the idea does not apply where the mate on the nest answers with a high call, yet the "cuks" of the approaching bird continue. A more likely hypothesis is that the "cuks" are addressed to conspecifics. Pileated Woodpeckers maintain

a close pair bond the year round and, when conditions are favorable as at Cabin John, they may roost in holes that are not far apart. When one of a pair goes to roost, it lets the other know to which hole it is going. This may serve to prevent both birds from going to the same hole and competing, as well as to keep the two in touch at a crucial time of day. The calls may also be territorial—a warning to intruders.

The habit of giving loud vocalizations is not mentioned in Bent (ibid.) nor by Hoyt (1957, Ecology 38: 246) in her excellent account of the roosting of *D. pileatus*. She has, however written (pers. comm.) that she "can still hear the long series of 'cuks' as the birds [in Sapsucker Woods] approached the roosting area in winter and early spring. It was from that that we could ascertain which of several roost holes was being used." The habit may be a characteristic of the genus *Dryocopus*. Blume (ibid.) describes and gives a figure of the Black Woodpecker flying to its roost giving "kurr-kurr-kurrs" all the way to the hole, punctuated by a "kijah" when it alights on a perch. The "kijah" may correspond to the high call (Kilham 1959, Condor 61: 377) of *D. pileatus*. Blume (pers. comm.) also states that some individuals of *D. martius* call in flying to nest holes. He considers the calling territorial but, as shown above, I feel that the loud vocalizations are, more importantly, communications between the members of a pair.—LAWRENCE KILHAM, *Department of Microbiology, Dartmouth Medical School, Hanover, New Hampshire 03755.* Accepted 15 Jul. 73.

**Florida Burrowing Owl collected in North Carolina.**—While birding on the Outer Banks of North Carolina on 14 November 1966, Walter C. Morrison (pers. comm.) of Marlton, New Jersey, discovered a Burrowing Owl (*Speotyto cunicularia*) at Salvo, Dare County. I collected the owl on 14 February 1967. The specimen, an adult female, was subsequently determined at the U. S. National Museum to be *S. c. floridana*. It weighed 112.2 g, the wing (flattened) measured 165 mm, tail 71 mm, exposed culmen 22 mm, tarsus 45 mm, and middle toe (including nail) 27 mm. The ovary was 7 × 12 mm. The bird was in good flesh, and the stomach was almost empty. The specimen is now catalog No. 566510 in the NMNH. This constitutes the first record for North Carolina and appears to be the third specimen record of this subspecies outside of Florida and the Bahama Islands. Howell (1928) secured a specimen of *S. c. floridana* on 3 February 1912 on Blakely Island near Mobile, Alabama, and Bond (1943) reported a female of this race taken by Gaston Villalba at Campo Florida, Havana, Cuba, on 7 January 1943. All other Burrowing Owl records in eastern North America were either of the western form, *S. c. hypugaea*, or of undetermined subspecific identity. There is one sight record of a Burrowing Owl in Virginia (Murray 1952), and one in South Carolina (Sprunt and Chamberlain 1949), both at coastal locations. The site at which the owl was found is relatively open sand flats with scattered grasses and forbs. The bird was using a burrow in the middle of a National Park Service campground. This general area on the Outer Banks is similar physiographically to the habitat of *S. c. floridana* on the southeastern coast of Florida, where the birds are common along the old beach ridges and in sandy pastures.

The occurrence of *S. c. floridana* in North Carolina raises the question: how did the bird reach a point approximately 920 km (572 miles) from its range? Alachua County, Florida, is the nearest location (Ligon 1963), and the subspecies, so far as anyone is aware, is nonmigratory (Howell 1932, Bent 1938, Sprunt 1954).