same way. I continued to check the nest until 14 May, but the birds had deserted it, and if they renested I failed to find the new site.

I found the second Kauai Creeper nest on 26 April 1970. This nest was 28 feet above the ground in the terminal crown of a thin branch growing horizontally from the trunk of a large nonblooming Ohia tree. I could climb to within 10 feet of the nest but could neither reach it nor climb above it to look down into it. On 26 April the female was in the nest and she remained there while I attempted to check the nest. This strong tenacity to remain on the nest continued throughout all of my days of observation and is markedly different from what I have observed in other drepanidids, which fly off and away from the nest at the slightest disturbance. On 9 May I again tried to check the nest. The female crouched down into the nest while I was in the nest tree and I assumed that she was still incubating.

On 20 May the nest contained two well-feathered nestlings. They had brownish green feathers on the back and wings, cream-white feathers on the chest, and a considerable amount of long white down ($\frac{1}{2}$ inch in length) sticking up between the feathers over each eye and on the back. The inside of the mouth was bright pink and the margin of the bill was bright yellow. The legs and feet were pinkish gray. The nestlings gaped readily and showed no fear reaction.

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Tool-use by the New Caledonian Crow (Corvus moneduloides).—Although various types of tool-use by birds have been described in recent years (Morse, Wilson Bull., 80:220, 1968; van Lawick-Goodall, *in* Advances in the study of behaviour, vol. 3 (Lehrman, Hinde, and Shaw, Eds.), New York, Academic Press, 1970, p. 195; Hobbs, Emu, 71: 84, 1971), the use of a twig or other object as a probe during food search has been known only in the Galapagos finches *Cactospiza pallida* and *C. heliobates*. The following observation of activity of this type in an unrelated species is therefore of some interest.

During a brief visit to New Caledonia I visited the Reserve de Chasse et de Pêche de la Haute-Yaté in the southern mountains of the island on 7 August 1970. In an isolated patch of forest about 8 m in height, with a dense, large-leaved canopy layer and little understory, I saw a pair of New Caledonian Crows (Corvus moneduloides) about 1.5 m below the canopy level. One bird was bobbing its head vigorously up and down, with its neck arched and its bill pointed vertically downward. After repeating this action several times, it wiped its bill on a branch. Looking at it with binoculars, I discovered that it held in its beak a slender twig (leaf petiole?) about 10 cm long. It proceeded to insert one end of this under a piece of bark and probe vigorously with it to a depth of about 5 cm, using the same action I had seen previously. I watched the bird for about 10 minutes until the pair flew off, and I saw what I presume was the same individual repeat this action at least four times, inserting the twig under bark or into the end of a hollow branch. I never saw it actually catch or eat anything. The bird held the twig aligned with the length of the bill, with the proximal tip approximately at eye level. While probing, the crow often clung to vertical limbs or branches, but the probing motion was always in an up-and-down direction with the bill pointed downwards.

As the bird had the twig when I first saw it, I cannot say whether the crow

actually removed it from a tree or picked it up from the ground; the forest floor was littered with small, bare twigs similar to that used. I did not see the bird discard the twig; I believe it flew off with it. Although I saw several other birds of this species at various times during my stay, I never again saw tool-using behavior, nor had such behavior been observed by any of the local ornithologists I spoke with.

On 11 August in the Ouaou Reserve in the south central part of the island, I watched a crow that flew to a treetop carrying what appeared to be a leaf stalk approximately 15 cm long. After landing the bird called, put down the stalk, called again for a few moments, picked it up and flew off. It is of course possible that this stalk was nesting material, but it did resemble that used by the Haute-Yaté bird.

It is difficult to speculate on such behavior based on a single observation. I have no proof that the bird actually was foraging, nor do I have any idea how often tool-use occurs in this species, but the repetitions of probing that I watched were similar enough to suggest that this behavior was, if not a stereotyped pattern, at least a regularly performed action. Assuming that tool-use may be a regular foraging activity in this species, some interesting considerations follow.

Millikan and Bowman (Living Bird, 6: 23, 1967) have speculated that the evolution of tool-use in *Cactospiza* was in part promoted by a dry climate, which caused insects to hide below bark or deeper in the wood. The habitat of *Corvus moneduloides* is, at least in part, heavy rain forest. If Millikan and Bowman are correct, presumably different factors were responsible for the evolution of tool-use in this case. Although there are no woodpecker like birds in New Caledonia, the Horned Parrot (*Eunymphicus cornutus*), which appeared to be common in the taller forest at Haute-Yaté, apparently strips bark from trees to get at the



Figure 1. New Caledonian Crow probing into the end of a hollow twig. The head was moved vertically (up and down) in this action.

insects below (*fide* R. Aymard) and so may compete with the crow for a "probing" niche. Further, *Corvus moneduloides* is an omnivorous species (Delacour, Guide des Oiseaux de la Nouvelle-Calédonie et de ses dépendances, Paris, Delachaux et Nestle, 1966), presumably with many sources of food available to it. Thus it is hard to imagine what selective pressures could have acted to produce such a highly specialized foraging pattern. Nonetheless the discovery of tool-use by such an inquisitive bird as a crow is perhaps not too difficult to imagine.

I am grateful to J. Parrat, Chef du Service des Eaux et Fôrets de la Nouvelle-Calédonie, who provided me with permission to visit Haute-Yaté, and to Henri Cagou, warden of the reserve. M. A. Tonnelier, R. Aymard, and R. Daly of the Societé Ornithologique de la Nouvelle-Calédonie gave me much advice and information during my stay. J. C. Barlow, J. Delacour, and R. W. Storer offered valuable information and suggestions, and R. B. Payne criticized the manuscript. The drawing of the crow was prepared by B. K. Mackay from field sketches and notes.—RONALD I. ORENSTEIN, Division of Birds, Department of Zoology, University of Michigan, Ann Arbor, Michigan 48104. Accepted 22 Sep. 71.

More notes on interspecific cacique and oropendola colonies in Surinam.— Dunham (Auk, 88: 178, 1971) describes two cacique colonies in the savanna region of Surinam where *Cacicus cela* and *C. haemorrhous* nested together. The nesting together of these two species in Surinam has been known for centuries as J. G. Stedman (Narrative of a five years expedition against the revolting negroes of Surinam, vol. 1, London, 1796, p. 205) gives a clear description of a mixed colony he observed on 23 December 1774!

In the same region where Dunham made his observation I found a small colony of $C.\ cela$ in a low tree among savanna bushes on 31 October 1967. Many birds were still building and only 3 nests were occupied, one of them containing 2 eggs and two with 2 nestlings. On 5 November a number of $C.\ haemorrhous$ were busily nest-building in the same cluster of nests, and on 18 February 1968 the two species were still nesting together. On 31 October 1969 in an isolated tall tree standing in a small forest clearing near Zanderij I found another mixed colony of these two species where $C.\ cela$ was in the minority. In December 1970 and January 1971 both species nested once more in the same tree, and a small number of Crested Oropendolas (*Psarocolius decumanus*) were nest-building on the same branches as the caciques. $C.\ haemorrhous$ also nests together with the Green Oropendola (*Psarocolius viridis*) as on 4 December 1966 I found a cluster of nests of $C.\ haemorrhous$ in a large tree at the edge of the forest near Phedra with a number of nests of $P.\ viridis$ on the same branches as the caciques.—F. HAVERSCHMIDT, 16 Wolfskuilstraat, Ommen, Holland. Accepted 26 Aug. 71.

Nesting of Chuck-will's-widow on Andros Island, Bahamas.—On 12 June 1970 I found a female Chuck-will's-widow (*Caprimulgus carolinensis*) in a clearing surrounded by Caribbean pine (*Pinus caribbaea*) some 8 miles north of Fresh Creek, Andros. The bird was extremely disturbed by my presence and showed the distraction displays usually associated with nightjars. A short search at that time did not reveal the presence of any eggs or scrape. I returned on 13 June and eventually located the bird sitting out in the open on a single egg in an area of broken limestone. I visited the area again on various dates up to 26 June, after which no further visits were practicable. During this period the single egg was still being incubated. After I had found the egg I was accompanied by J. T. Herbert, who verified my identification of the bird. At no time did I see or hear another Chuck-will's-widow in the area.