

posturing we saw was rather brief and passive compared to that observed on some other occasions, and very well-described by Koford (op. cit., 77-79). Also copulation was in all cases performed in seclusion, whereas display sometimes occurs when groups of Condors are together at food, at a roost, or elsewhere.

The sexual display of most New World Vultures (Cathartidae) has been described, but apparently actual copulation has seldom been seen. Poulsen (Z. Tierpsychol., 20: 468, 1963) watched captive South American Condors (*Vultur gryphus*) display actively just prior to copulation, and Koford (op. cit., 79-80) records display by this species both before and after mating. On the one occasion on which we saw Turkey Vultures (*Cathartes aura*) copulating, there was no display. The birds were first noted at 07:45 on 11 March 1970 sitting side by side on a rocky promontory. They sat quietly for another 15 minutes, then one climbed onto the other's back and stayed there 45 seconds, flapping occasionally as coition occurred. The "female" preened actively for the next 7 minutes, while the "male" sat motionless at her side. Then both alternately preened and sunned (spread wings) until 09:21 when they flew away.—SANFORD R. WILBUR, *Bureau of Sport Fisheries and Wildlife, Patuxent Wildlife Research Center, Ojai, California 93023*, and JOHN C. BORNEMAN, *National Audubon Society, 1973 S. Victoria Ave., Ventura, California 93003*. Accepted 11 May 71.

Food and feeding behavior of the Jamaican Crow, *Corvus jamaicensis*.—

Virtually nothing is known about the life histories of West Indian crows, as evidenced by Johnston (The biosystematics of American crows, Seattle, Univ. Washington Press, 1961, pp. 81-99). On Jamaica specifically the 19 species of endemic land birds are poorly known from the standpoint of feeding and other aspects of niche utilization, competition, and resource partitioning. The following information of food and feeding behavior of the Jamaican Crow should be helpful in future analyses of the ecology of this species. To my knowledge the only reference to its food habits is that of Gosse (The birds of Jamaica, London, Van Voorst Press, 1847, pp. 209-217), who states that it is principally a vegetarian, feeds on the fruits of bitterwood (*Picrasma excelsia*), pimento (*Pimenta pimenta*), soursop (*Annona muricata*), banana (*Mus sapientum*), and plantain (*M. paradisiaca*), and also eats the eggs and nestlings of wild pigeons.

This study was carried out in the Lluidas Vale (Worthy Park) region, St. Catherine Parish, Jamaica during the spring and summer of 1970. Lluidas Vale (1,250 feet) is in an interior valley or polje. Its vegetation is classified as wet limestone forest (Asprey and Robbins, Ecol. Monogr., 23: 359, 1953). This type of forest grows in areas of limestone rocks where annual precipitation exceeds 75 inches. Many of the trees in this region have epiphytes, lianes, and bromeliads growing in profusion.

The Jamaican Crow is a fairly common resident in the wet limestone forest and mountain pastures, usually encountered in small flocks of three to four individuals. Primarily arboreal, it feeds on fruits and may be seen probing into bromeliads, underneath bark, and into rotten limbs, as the following excerpts from my field journal show:

20 April.—Watched two individuals feeding on the reddish berries ($\frac{1}{2}$ inch) of the wild fig (*Ficus trigonata*) in the upper inner branches, approximately 35 feet from the ground.

23 April.—One bird seen feeding on the fruits of the wattle-wood tree (*Laetia thamnia*), approximately 20 feet high on the outer lower branches.

27 April.—Watched Jamaican Crow probing into a medium-sized bromeliad (base

2 inches) on a vertical limb of a Jamaican cedar (*Cedrela odorata*) for approximately 70 seconds. The crow probed into the center of the bromeliad, also into the dead leaves on the outside of the plant, and removed an invertebrate prey. The same individual flew to a dead limb (5 inches wide) on the same tree and began probing into the rotten end. I watched it remove a grasshopperlike insect.

4 May.—Two individuals were observed on a guango tree (*Samanea saman*). One probed into a large-sized bromeliad (base 4 inches) for approximately 160 seconds. Near-by a second individual probing under the loose bark on a dead branch 3 inches thick caught an invertebrate prey.

28 June.—Watched crow probing and pecking woodpecker-fashion into the rotten end of a guango tree 4 inches wide for approximately 140 seconds; it obtained a small arthropod approximately $\frac{1}{2}$ inch long. The same individual kept probing underneath the bark for 85 seconds.

1 July.—One individual watched probing into a medium-sized bromeliad on a guango tree for 150 seconds caught a grasshopperlike insect.

14 July.—Watched crow feeding on the whitish fruit ($\frac{1}{2}$ inch) of the burnnose tree (*Daphnopsis tinifolia*) for approximately 130 seconds. In this period it swallowed four berries.

While these observations show the foraging pattern of the Jamaican Crow to be considerably more flexible and diverse than Gosse (op. cit.) reported, much work still remains to be done before the complete picture of its niche utilization pattern emerges.

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Canada Goose-Osprey interactions.—During the course of a study of tree-nesting Canada Geese (*Branta canadensis*) along the Bitterroot River in Ravalli and Missoula Counties, Montana, I witnessed several instances of conflict between nesting geese and Ospreys (*Pandion haliaetus*). Few such conflicts between nesting waterfowl and raptors have been recorded. John Fannin (Auk, 11: 322, 1894) describes an Osprey nest in British Columbia that a pair of Canada Geese and a pair of Ospreys both defended. In the nest an Osprey was incubating two Osprey eggs and three goose eggs. Four of the eggs were collected, one goose egg being left in the nest. On a later visit the Osprey was incubating the goose egg and the geese had abandoned the site.

Geese are present in the Bitterroot River region throughout the year, and begin nesting activities about mid-March. They choose a wide variety of aerial nesting sites, including nests built by Great Blue Herons (*Ardea herodias*), Red-tailed Hawks (*Buteo jamaicensis*), and Ospreys. Several pairs of Ospreys nest here every year; I saw the first ones in 1969 on 3 April and in 1970 on 9 April.

In 1969 a pair of Ospreys apparently evicted a nesting pair of geese that had occupied the nest before they arrived. The gander, however, refused to abandon his post and defended his territory despite frequent harassment. On one occasion this gander with two other geese flew directly toward the nest. One goose dove at the Osprey sitting in the cup of the nest; the goose's breast missed the Osprey's head by only a few inches. The Ospreys immediately gave chase, but the attacking goose