

Feeding of nestlings by the Caracara in Costa Rica.—A Caracara (*Caracara cheriway*) nest was located on the edge of a fresh water marsh near Las Canas in Guanacaste Province, Costa Rica. The large bushy nest was approximately 30 m up in a 40 m *Pseudobombax septinatum* tree, and contained 2 nestlings that were close to fledging. I used spotting scope and binoculars to identify prey items brought to the young and the frequency with which the young were fed. The nest was observed during the dry season from 26 January through 30 January 1975. I spent 23 hours watching the nest from 06:00 to 11:30 and from 16:00 to 18:00 daily. The adult pair foraged over the marsh and in the surrounding areas of savannah and second growth arid scrub habitat.

During the 23 hours of observation, 47 visits were made to the nest by the adults, averaging about 2 trips to the nest per hour. The adults brought food to the young on 25 of these visits to the nest, or slightly more than once an hour. On only 5 occasions did more than an hour elapse between feedings. The food was torn apart in the nest by the adults and presented bite by bite to the nestlings—a feeding process typical of many raptors (Brown and Amadon, Eagles, Hawks, and Falcons of the World, Vol. I, McGraw-Hill, 1968). It took the adults an average time of 12 min to aid the young in consuming the prey.

Bent (U.S. Natl. Mus. Bull. 170, 1938) reports that some species of caracara feed their young fresh meat as opposed to carrion. Much of the food I observed brought to the nest (though difficult to ascertain) appeared to be freshly killed. The following food items were observed: Birds—3 *Jacana spinosa* (1 adult, 1 juvenile, 1 juvenile leg), 1 unidentified small bird; Mammals—1 peccary (lower jaw of *Tayassu pecari*), 1 cotton rat (*Sigmodon hispidus*); Reptiles—2 tails of *Ctenosaura similis*, 2 tails of *Iguana iguana*, 4 *Ameiva* lizards (probably *festiva*); Amphibians—1 large frog; Fish—2 fish of the family Eleotridae; Arthropods—1 tarantula or large insect; Miscellaneous—3 unidentified pieces of carrion. In addition to these, 4 items brought to the nest could not be identified at all before they had been fed to the young. The freshwater fish of the family Eleotridae were probably found in nearby ponds and waterways that were quite shallow as a result of the dry season. The cotton rat (*Sigmodon hispidus*) appeared to have been freshly decapitated and was one of the few instances in which the adult Caracara carried the food in its feet instead of with the bill. The peccary jaw was identified after an adult, flustered by an attack by a Tropical Kingbird (*Tyrannus melancholicus*) dropped the jaw and I retrieved it.

The Caracara is usually described as a carrion feeder (Glazener, Condor 66:162, 1964), and is sometimes seen in association with vultures (Monroe, Ornithol. Monogr. No. 7, 1968). It is of interest that only in 4 cases (including the peccary jaw) did the adults bring what appeared to be carrion to the nest. Since occasionally both adults joined the young in the nest after one of the mates brought food, it is possible that the adults were feeding along with the nestlings on the food brought to the nest. Thus during the nesting season the adult *Caracara cheriway* may feed on more fresh prey than hitherto reported.

I am indebted to Norman Scott for his help in identifying the prey, to Indiana University for supplying the funds for my participation in the Tropical Biology course sponsored by the Organization for Tropical Studies, and to Rollin Richmond for reading the manuscript.—ANN RELLER RICHMOND, Zoology Dept., Indiana Univ., Bloomington 47401. Accepted 22 Sept. 1975.

Unusually large vulture roost in Virginia.—On 29 December 1975, in the Radford Army Ammunition Plant (RAAP), 14 km west of Blacksburg, Va., we saw a large roost of Black (*Coragyps atratus*) and Turkey vultures (*Cathartes aura*). We counted 813

Black and 320 Turkey vultures. A review of the literature indicates this to be a large roost. Most reported Turkey Vulture roosts contain no more than 300–400 birds and average about 50 (Leach, *Condor* 31:21–23, 1929; Tyrrell, *Auk* 55:468–470, 1938; Eifig, *Auk* 16:299, 1944; Nauman, M.S. Thesis, Ohio State Univ., 1963). The 2 species are reported roosting together by Robbins (*Wilson Bull.* 62:36, 1950), who recorded 1 Black Vulture in a roost of more than 50 Turkey Vultures; and Grube (*Wilson Bull.* 65:199, 1953), who saw 12 Black Vultures among “a large flock of Turkey Vultures.”

The roost near Blacksburg was counted in December of 1973, 1974, and 1975. It contained 401, 1047, and 1133 birds (both Black and Turkey vultures) respectively. Weekly counts were made throughout January and February 1975 and totals ranged between 320 and 708 for both species. Counts were made by 2 observers who visited the roost 1 h before dusk. A position was selected directly across the river, approximately 200 m from the roost. Birds already roosting were counted using binoculars. The surrounding horizon was then divided into areas of responsibility and incoming birds were tallied as they crossed an imaginary line located sufficiently distant from the roost to avoid counting any birds twice.

Our data indicate the roost near Blacksburg to be one of the largest vulture roosts ever reported for North America. Bussjaeger (*Condor* 69:425–426, 1967) saw a flock of Turkey Vultures migrating over Vera Cruz, Mexico, which he estimated to contain several thousand individuals. Stevenson (*Am. Birds* 28:629, 1974) reported a Turkey Vulture roost at Lake Okeechobee, Fla., which he estimated to contain 4000 birds. This estimate was made on 28 February 1974, and the vultures represent overwintering migrants (Paul Sykes, pers. comm., 1974). The majority of the RAAP birds are nonmigratory Black Vultures and the season of the counts seems to preclude transient migrants.

There are about 20 other vulture roosts reported in or near the State of Virginia. Most of these are located on the eastern shore of Virginia or bordering the Chesapeake Bay on either the Virginia or Maryland side. Only 3 other roosts are reported in mountainous sections of Virginia near Lexington, Staunton, and Charlottesville; all are located beside rivers (Robert Downing, pers. comm. 1975). The bulk of all 20 roosts are composed of Turkey Vultures, none exceeds 300 birds, and most number below 50.

The RAAP roost site is composed of large (32 m) sycamores (*Platanus occidentalis*) at the base of a 30 m bank along the New River. In this respect the physical aspects of the roost site do not differ from many others. There are no obvious concentrated food sources (e.g. slaughter houses) to attract the birds. However, the general public is denied admission to the plant, firearms are not permitted, and vehicular traffic in the roost area is minimal. This protection may account, in part, for the size of the roost.

This concentration of birds raises several questions. The most obvious is: what quantity of food is required to support such a population? We found a maintenance diet for caged Turkey Vultures approximates 140 g of meat per bird per day. A population of 1000 birds could require in excess of 140 kg of carrion per day. How large an area is needed to supply such a quantity? How far can these birds range in search of food? Continued observations at the roost near Blacksburg may provide some insight into these questions.

These observations were made possible through the cooperation of the Radford Army Ammunition Plant.—IRVINE D. PRATHER, RICHARD N. CONNER, AND CURTIS S. ADKISSON, *Dept. of Biology, Virginia Polytechnic Institute and State Univ., Blacksburg 24061. Accepted 21 Apr. 1976.*