

Supplies.—Containers of distilled water and alcohol (antiseptic), cup, forceps (e.g. Dumont #5), dropper, vials, scissors (e.g. Jarit #360-100), record book, glove for handling dry ice, styrofoam container (e.g. 25 × 25 × 25 cm.). (See Fig. 1a).

Procedure.—Hold the bird in one hand with breast up, and wet the feathers with water on a finger, spreading the feathers along the tract (Fig. 1b). Cut a slit in the skin 15–20 mm long and through the connective tissue to expose the pectoralis muscle (Fig. 1c). Cut a section, in a longitudinal direction, out of the pectoralis muscle about 2 mm deep, 8 mm long, and 3 mm wide (Fig. 1d). Lift out the tissue with forceps (Fig. 1e), and place tissue into vial with 2 drops of distilled water. Place the vial onto dry ice. Smooth the feathers over the wound (Fig. 1f), and release the bird. Total time required to perform one biopsy is about 2 min.

The styrofoam container fits conveniently into a backpack and holds dry ice sufficient for a full day in 27°C weather. Dry ice slabs can be formed into walls and floor within the styrofoam container with another slab serving as a lid. On returning to living quarters, one may store vials in a 25-l flask of liquid nitrogen until biochemical work is performed. In my initial work with finches, I used suturing and collodion in closing the wound, but the extra time, stress on the bird, and feather fouling caused more problems for the bird than simply releasing it. The tissue obtained by this biopsy is adequate to load 3–4 starch gels 6 mm thick, each of which may be sliced 3 times to provide 9–12 enzyme assays. I obtain 8 variable loci in certain populations of White-crowned Sparrows and 4–5 in Dark-eyed Juncos and Tree Sparrows.

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Whooping Crane Preyed Upon by Golden Eagle^a

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The Golden Eagle (*Aquila chrysaetos*) is the largest predatory bird in North America and is well known for its predatory abilities. Attacks have been reported on mammals such as whitetail jackrabbits (*Lepus townsendi*) (McGahan 1967, J. Wildl. Mgmt. 31: 496), pronghorn antelope (*Antilocapra americana*) (Bruhns 1970, Can. Field-Natur. 84: 301), Mallards (*Anas platyrhynchos*) (Kelleher and O'Malia 1971, Auk 88: 186), and Great Blue Herons (*Ardea herodias*) (Carnie 1954, Condor 56: 3). This communication describes an attack on an immature Whooping Crane (*Grus americana*) by a Golden Eagle and the subsequent necropsy findings.

The victim was an apparently healthy immature Whooping Crane that had been raised by foster-parent Greater Sandhill Cranes (*Grus canadensis tabida*) at Grays Lake National Wildlife Refuge in Idaho [Drewien and Bizeau 1978, Pp. 201–222 in *Endangered birds—management techniques for preserving threatened species* (S. A. Temple, Ed.). Madison, Wisconsin, Univ. Wisconsin Press] and was migrating through Colorado enroute to wintering grounds in New Mexico.

The attack occurred southwest of Rangely, Colorado and was witnessed by a party of nine deer hunters on the afternoon of 13 October 1979. An interview with the hunters revealed the following scenario. The Whooping Crane, accompanied by two Sandhill Cranes, was flying at an estimated altitude of 300 m when the eagle attacked. The Whooping Crane glided toward the ground after being struck and crashed into a juniper (*Juniperus* sp.) tree just before hitting the ground. The crane was still alive when found by one of the hunters but died about 10 min later.

Subsequent x-ray examination and necropsy at the National Wildlife Health Laboratory (NWHL) showed that the cause of death was a direct result of the eagle attack and the subsequent fall. Four talon

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wounds were noted, ranging in size from 1.5 cm × 1.5 cm × 1 mm deep to 2.5 cm × 2.0 cm × 10 mm deep. The wounds located at the dorsal body surface were examined for the feasibility of an eagle kill by using the claw of a dead eagle awaiting necropsy at the NWHL. The eagle's claw, when spread into a striking position, fitted the talon wounds found on the crane.

Internal examination revealed a large, wedge-shaped laceration about 2 cm across and 2 cm deep on the right liver lobe with an associated blood clot attached to this laceration. Scattered edema and pulmonary hemorrhages were found along the ventral border of the right lung. The right abdominal air sac was filled with blood. Rupture of the liver was the probable cause of death.

Bacterial, viral, parasitic, and chemical analyses of tissues indicated that this crane had no detectable diseases, defects, or toxicants. Abundant quantities of subcutaneous, abdominal, and coronary fat and the degree of muscular development showed that the bird was in very good condition.

On 6 August 1979, this crane was banded at 56 days of age by personnel of the Idaho Cooperative Wildlife Research Unit and fitted with a 50-g radio transmitter leg pack to facilitate observations of movement and behavior. The bird was observed frequently before migration. During that period, it appeared to be normal and healthy. As further evidence of its physical soundness, it had migrated an airline distance of 400 km since departing from Grays Lake on 11 October, 2 days before the eagle attack. We conclude that this healthy immature whooping crane died as a direct result of an aerial attack by a golden eagle.

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New Brazilian Records for the Golden Parakeet (*Aratinga guarouba*)

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Recent sight records and a specimen in the collection of the Museu de Zoologia in São Paulo, Brazil establish a large extension of the range of *Aratinga guarouba*, the Golden Parakeet. These data are of particular importance for several reasons. Haffer (1974) used the Golden Parakeet to help define the "Belém refugium" as part of the larger theory of Pleistocene refugia. This parakeet is a taxonomically isolated species with no close relatives or geographical representatives among the many other species of *Aratinga*; the golden yellow plumage and dark green remiges as well as the large bill are unique in the genus. Virtually nothing is known of its habits in the wild (Forshaw 1973). Furthermore, the species is considered endangered and afforded special protection by the Brazilian National Forestry Institute (IBDF), which is charged with faunal protection.

Meyer de Schauensee (1970) lists the range of *Aratinga guarouba* as extending from the east bank of the Xingú to the Rio Capim and adjacent Maranhão (Fig. 1). Peters (1937) includes the possibility that the species occurred as far east as Ceará, based on the description of the "Quijubatui" by Marcgraf (1648). Under this designation, Marcgraf unambiguously described *A. guarouba* in a brief three-line account in his classic work, including at the end that the bird is "easy to domesticate." This suggests that he knew the species as a cage bird. Several bird species were involved in aboriginal trade in the New World (Haemig 1978, 1979), and the spectacular saffron and green Golden Parakeet would have been a primary candidate for such trade in early Brazil, just as it is today. The eastern limit of the modern range of the species coincides with the western-most extension of Dutch Brazilian territories during the 17th century, when Marcgraf worked there (Fig. 1). We think that the specimen he described was a trade bird brought to his base in Recife from Maranhão or Pará and that the species never occurred in the wild in northeastern Brazil.

In contrast to the dispute about the eastern limit of *Aratinga guarouba*, the western limit has been given consistently as the Xingú. Pinto (1978) revised this to the Tapajós, based on a single juvenile specimen collected by Olalla in 1962 at Fordlândia on the eastern bank (specimen 556313, Museu de Zoologia da Universidade de São Paulo), which was taken from a flock of seven individuals.

Sight data indicate that other populations exist between the Xingú and Tapajós and on the western