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USE OF AN ORAL IMMOBILIZING AGENT TO CAPTURE A HARRIS' HAWK (*Parabuteo unicinctus*)

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A 5 yr old, captive bred Harris' Hawk (*Parabuteo unicinctus*) routinely used for falconry purposes was lost while being flown during a severe thunderstorm in the spring of 1987. The hawk was wearing a single 216 MHz transmitter (Beacon Products, Salt Lake City, Utah) attached to a tail mount. Using a radio receiver (Rb-4 Falconer, Custom Electronics, Urbana, Illinois), the hawk was relocated the following day.

For 6 d the hawk was observed catching and feeding on numerous small rodents. The hawk was also observed robbing several Black-billed Magpie (*Pica pica*) nests of newly hatching nestlings. Due to the abundant availability of prey the hawk refused to return to the falconer when offered food. Several attempts were made to trap the hawk using pigeons (*Columba* sp.) and quail (*Coturnis* sp.) and various Bal-Chartri traps (Berger, D. and Mueller, H., The Bal-Chartri: a trap for the birds of prey. *Bird-Banding* vol. XXX, January 1959). The hawk cautiously avoided all trapping attempts and would only accept food items from the falconer if left near the perching hawk, or if food was thrown in the hawk's direction.

Previous capture methods being unsuccessful, chemical immobilization was considered as a means of retrieving the hawk. Because of possible impact damage caused by an anesthetic dart, traditional methods of administering an immobilizer were unacceptable. Since the hawk was

indirectly accepting food from the falconer, an alternative was to use an immobilizing agent injected into food that, following ingestion, would act to slow the hawk enough for capture.

Oral immobilizing agents have been used to capture wild birds (Martin, L. L., Comparison of methozymol, Alpha-chloralose and two barbiturates for capturing doves. Proceedings of the 21st. Annual Conference of the South-eastern Association of Game and Fish Commissioners, 1967; William, L. and Philips, R., Capturing Sandhill Cranes with alpha-chloralose. *J. Wildl. Mgmt.* 37(1): 94-97, 1973). Ketamine HCl, however, has apparently not been used as an oral immobilizing agent for capturing birds. Effective oral doses of ketamine HCl are usually 2-3 times higher than Parenteral doses (Fowler, M., Zoo and wild animal medicine, 2nd. ed. W.B. Saunders Company, Philadelphia, PA, 1986), and oral immobilizing agents have previously been rejected as a poor means of restraining wild animals (Fowler 1986).

Ketamine HCl (Ketaset®-Bristol Veterinary Products) at a dosage of 100 mg/kg^a was injected into a 30 gm piece

^a Routine intramuscular dosage for large raptors is 20-30 mg/kg, when not given simultaneously with Xylozine or Diazepam (P. Redig, pers. comm.).

of Ring-necked Pheasant (*Phasianus colchicus*) breast, and offered to the hawk. After tasting the meat, the hawk shook its head repeatedly but eventually all was consumed. The hawk remained perched on the ground for a brief period, then commenced to soar. One hour following ingestion of the treated food, the hawk showed the first signs of ataxia, having some difficulty remaining steadily perched on a tree limb. The hawk again took flight and soared for several minutes before perching on the top of a tall tree. At this time the immobilizing effects of the ketamine HCl were more obvious, as the hawk spread its wings to balance on the limb and to brace itself amongst the adjoining branches.

Two hours following ingestion of the treated food, the hawk flew from a tree to a ground point 100 m away. The hawk was found in a weakened condition, bobbing its head from side to side. The hawk made no attempt to escape and was recaptured. Three hours following capture the hawk had recovered and showed no signs of having been chemically immobilized. At no point during the immobilization did the hawk lose consciousness.

The oral dose of immobilizing agents in birds has obvious advantages. The procedure described in this case report may be used to recover unresponsive birds used for

falconry or escaped birds involved in research projects. The procedure is an alternative in cases where trapping is ineffective or undesirable. However, chemical immobilization should never be attempted with a non-radiotagged bird. Tracking a treated bird without the advantage of radio telemetry would be nearly impossible. A treated bird that could not be followed would become susceptible to predation or could succumb to unfavorable environmental exposure.

The use of ketamine HCl as an oral immobilizing agent at a dosage of 100 mg/kg was suitable for capture of the Harris' Hawk in this case report. The method should never be used as a means of capturing wild birds due to delayed induction period and other hazards described. Because ketamine HCl cannot be dispensed to the general public, a veterinarian should always be available to supervise administration of the drug and provide supportive care during and after the immobilization period.

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A UNIQUE ENCOUNTER AMONG A GYRFALCON, PEREGRINE FALCON, PRAIRIE FALCON AND AMERICAN KESTREL

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As a consultant for the San Jose International Airport, my duties include trapping and relocating of raptors considered hazardous to air traffic. The airport is located northwest of urban San Jose, California (elevation 25 m).

On 20 November 1986 at 0915 H (PST) with clear skies and temp of 21°C a male American Kestrel (*Falco sparverius*) was caught in a noose carpet set on a low post. A Gyrfalcon (*F. rusticolus*) in juvenile plumage appeared and began a series of shallow dives (15+) at the entangled kestrel. At the same instance a juvenile Peregrine Falcon (*F. peregrinus*) was heard to make several vocalizations ("kaks") from overhead. As the Gyrfalcon departed flying south, the Peregrine feigned an attack on the Gyrfalcon from a safe distance near the south end of the main airport runway. At that time a male Prairie Falcon (*F. mexicanus*) was seen circling overhead and above the two falcons. The Peregrine was struck and killed by an Eastern Airlines DC-10 which was on a landing approach from the south. The pilot relayed the strike to tower personnel who retrieved the dead Peregrine and presented the carcass to

me. The Gyrfalcon was not seen again, but the Prairie Falcon remained overhead.

Morphometric data collected that day on the Peregrine were weight (975 g), wing chord (flattened; 365 mm), tail length (211 mm), total length (572 mm), total wingspan (1114 mm), length of digit III (48 mm; toe only, flattened), standard culmen (6.2 mm); no remex or rectrix feathers were missing. The Peregrine was banded as a 30 d old nestling with a U.S. Fish and Wildlife Service leg band on 16 July 1986 along the Yukon River near Anvik, Alaska (P. Bente, pers. comm.). The carcass was given to the Santa Cruz Predatory Bird Research Group, Santa Cruz, California. On 22, 23 and 24 November 1986 a Gyrfalcon in juvenile plumage was seen at Dixon Landing <5 mi north of San Jose Airport (B. Walton, pers. comm.).

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