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LOSS OF AN ABDOMINALLY IMPLANTED RADIO TRANSMITTER BY A WILD BLUE-WINGED TEAL

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Abstract.—Radio transmitters can be implanted surgically in the abdominal cavities of ducks. This paper documents the loss of an abdominally implanted radio by a wild, female Blue-winged Teal (*Anas discors*) during the breeding season. The radio was probably expelled through the oviduct. Researchers using implanted radio transmitters to mark breeding ducks should be aware of the possibility of transmitter loss.

PÉRDIDA DE UN RADIOTRANSMISOR IMPLANTADO EN EL ABDOMEN EN UN INDIVIDUO DE *ANAS DISCORS*

Sinopsis.—Los radiotransmisores pueden ser implantados mediante cirugía en la cavidad abdominal de patos. Se documenta la pérdida de una implantación abdominal, durante la época de reproducción por parte de una hembra de *Anas discors*. El radiotransmisor fue probablemente expelido a través del oviducto. Los investigadores que usan este método deben tomar en consideración la probabilidad de pérdida del radiotransmisor.

Implanted radio transmitters were first used in ducks when Korschgen et al. (1984) surgically implanted transmitters in the abdominal cavities of captive Mallards (*Anas platyrhynchos*). Implants subsequently have been used in wild Canvasbacks (*Aythya valisinaria*) (Olsen et al. 1992), Mallards (Rotella et al. 1993), and Blue-winged Teal (*Anas discors*, E. Dzus, pers. comm.). Implanted radios cause fewer alterations in behavior and condition than Dwyer (1972) backpack harnesses in Canvasbacks (Korschgen et al. 1984, Olsen et al. 1992) and wild Mallards (Rotella et al. 1993), and are commonly employed in the field. We discovered an unexpected problem with abdominally implanted radio transmitters, however, when we observed a Blue-winged Teal that lost its transmitter. Transmitter loss could be particularly problematic because investigators might misclassify lost transmitters as mortalities.

We implanted transmitters (Olsen et al. 1992) in 14 female Blue-winged Teal that were decoy trapped (Sharp and Lokemoen 1987) before the nesting season. Transmitters were cylindrical (3.3-cm length, 1.5-cm di-

ameter), and weighed 13 g each. Each bird was uniquely marked with nasal disks (Lokemoen and Sharp 1985) and released within 2 h of trapping.

Thirty days following implantation, one teal's transmitter was found in shallow water in a pond where the hen had been seen repeatedly and located by telemetry. One half of the transmitter was covered with eggshell. Four days before the transmitter was found (9 Jun. 1993), we saw the hen and located her radio signal from a different pond, indicating that the hen carried the transmitter for at least 26 d. The marked bird was seen 2, 4, and 7 d after we recovered her implant. The hen behaved normally and was healthy enough to evade attempts to collect her.

We hypothesize that the transmitter was expelled through the oviduct because its entrance (the infundibulum) is open to the body cavity (Sturkie 1976), and the transmitter used is about the size of a Blue-winged Teal egg yolk. In the implantation procedure, the transmitter was positioned about 2–3 cm from the oviduct opening, but may have moved about in the body cavity, although some transmitters eventually become covered by a thin layer of fibrous tissue (W. Hohman, pers. comm., Olsen et al. 1992). The presence of eggshell covering the expelled transmitter lends credence to our hypothesis. Because the hen carried the transmitter for at least 26 d, it is unlikely that the transmitter was expelled through the incision. Incisions for transmitter implantations on captive ducks are fully healed within one week (pers. obs.).

Sturkie (1976) reported that, in domestic chickens, the infundibulum would engulf foreign objects experimentally placed in the abdominal cavity, but that this phenomenon occurred only during ovulation and required that the ovum also be removed. This observation suggests that uptake of a transmitter into the oviduct is theoretically possible.

This appears to be the first report of loss of an implanted transmitter by a breeding duck. This event is important because investigators may misclassify expelled transmitters as mortality events. Transmitters typically are used on birds that are difficult to observe, so detection of a marked bird after a radio is expelled will be rare. In this case, we had several fortuitous resightings of the teal that lost her transmitter. When implanted transmitters are discovered in the absence of remains or other evidence of predation, researchers should be cautious about calling these events mortalities if the bird was a female in the laying season.

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