

BAIT-FISHING BY THE STRIATED HERON (*BUTORIDES STRIATUS*) IN TRINIDAD

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Abstract.— Bait-fishing, a form of tool use rarely reported in birds, has been observed most frequently in *Butorides* herons. We report two observations (and a probable third) of adult Striated Herons (*B. striatus*) using bread to attract fish at Pointe-a-Pierre, Trinidad, constituting the second reported incidence of bait-fishing by this species in South America.

Resumen.— PESCA CON CARNADA EN EL CHICUACO CUELLO GRIS (*BUTORIDES STRIATUS*) EN TRINIDAD. La pesca con carnada, una forma de uso de instrumentos raramente registrada en las aves, ha sido observada más frecuentemente en las garzas del género *Butorides*. Se relatan dos observaciones (y probablemente una tercera) de adultos del Chicuaco Cuello Gris (*B. striatus*) usando pan para atraer peces en Pointe-a-Pierre, Trinidad, constituyendo el segundo registro de pesca con carnada por esta especie en Sudamérica.

Key words: bait-fishing, behavior, *Butorides striatus*, Striated Heron, Trinidad

BAIT-FISHING or baiting (Kushlan 1978), in which natural or artificial lures are placed in water to attract fish, is a rarely observed form of tool use that has been reported in only nine species of birds (see review by Davis and Zickefoose 1998). It has been reported most frequently in the Green Heron (*Butorides virescens*) in Arkansas, Florida, South Carolina, and Cuba, and in the closely related Striated Heron (*B. striatus*) in Kenya, western Africa, southern Africa, Japan, and Peru (see references in Robinson 1994, Davis and Zickefoose 1998). In this note we report three instances of the Striated Heron bait-fishing in Trinidad.

OBSERVATIONS

All of our observations took place at the Pointe-a-Pierre Wildfowl Trust, Trinidad, where workers and visitors feed bread daily to captive and free-flying waterfowl of several species at a small reservoir. On 21 March 1998, Hayes observed an adult Striated Heron perched on a narrow branch about 1 m above the pond's surface. The heron had a small chunk of bread in its bill which it dropped into the water. The heron immediately crouched and peered downward for about 30 sec. As Hayes moved closer to obtain a better view, the bird walked farther out on the branch and flew away.

On 15 May 1999, Rooks observed an adult Striated Heron pick up a piece of bread with its bill and walk a short distance to the pond's edge. It waved the bread just above the water and then dropped it into the water. As the bread sank about 8 cm to the bottom, the heron crouched motionless while staring at the water. After 1-3 min the heron would pick up

the bread and walk to a nearby locality where it repeated the behavior four more times. At this point Rooks decided not to disturb the bird further. About 5 min later, however, Rooks noted what appeared to be the same bird, though in a different locality, consuming a large fish head first.

On 23 October 2000, Hayes observed an adult Striated Heron standing on the shore with a large chunk of bread in its bill. When a group of visitors approached noisily the bird flew about 50 m away and landed again on the shoreline. Hayes cautiously approached it, noting that it still possessed the chunk of bread, but when the group of visitors arrived a few minutes later the bird flew with the piece of bread across the pond and out of sight.

DISCUSSION

Although we did not observe any successful captures of lured fish, the herons did not eat the bread which instead was tossed into the water during our first two observations and likely would have been if not disturbed during the third observation. Our observations strongly imply that the bread was used as bait to attract fish. These observations constitute only the second reported instance of bait-fishing by the Striated Heron in South America. The only previous observation occurred in Amazonian Peru, where at least three individuals used seeds, flowers, a twig, and a live fly as bait (Robinson 1994).

Davis and Zickefoose (1998) outlined three reasons why bait-fishing appears to be learned. First, the behavior is rare and appears restricted to a few areas within the vast range of a species. Despite many visits to the Pointe-a-Pierre Wildfowl Trust, we rarely

observed bait-fishing and have never observed it elsewhere. Second, many observations involve bait provided by humans (e.g., bread), suggesting that humans provided a model for herons which observed that fish were attracted to bait. At the Pointe-a-Pierre Wildfowl Trust, Rooks has observed concentrations of fish under the bird feeding stations waiting for crumbs to fall and once noted humans compressing a piece of bread onto a fishing hook and line to bait fish. And third, several individuals are often involved where bait-fishing occurs, suggesting cultural transmission of information. We are uncertain, however, whether our observations include more than one bird.

In Japan, Higuchi (1986, 1988) reported that an adult Striated Heron was significantly more successful foraging by bait-fishing than when other foraging tactics were used, that adults were more successful bait-fishing than immatures, and that differences in the proportion of time spent bait-fishing may be related to foraging habitat quality. Further quantitative studies of bait-fishing in *Butorides* are needed to better understand its adaptive significance.

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