Novel food use by Grey Kingbirds and Red-necked Pigeons in Barbados

by Louis Lefebvre, Simon M. Reader & Sandra J. Webster

Received 28 July 2000

The frequency with which birds adopt feeding innovations may be a good operational measure of behavioural flexibility (Lefebvre *et al.* 1997), but its usefulness depends upon accurate recording of novel behaviour patterns and new food sources. We describe here two instances of feeding innovations in birds of Barbados: consumption of maize spillage at a harbour warehouse by Red-necked Pigeons *Columba squamosa* and "bread-hunting" by Grey Kingbirds *Tyrannus dominicensis*.

The Red-necked Pigeon is a frugivorous West-Indian Columbid that, according to Goodwin (1983), is largely, if not entirely, an arboreal feeder. In over 15 years of field work in Barbados, we have never seen it join the ground-feeding Columbids that forage on seed and food scraps in urban and coastal areas (the Zenaida Dove *Zenaida aurita* and the Common Ground Dove *Columbina passerina*) or on grain spillage at the harbour (*Z. aurita* and the Feral Pigeon *Columba livia*)(Dolman *et al.* 1996). On 25 January 2000, a single adult *C. squamosa* was observed perching in late afternoon on a warehouse ledge in the Barbados Mills compound, Deep Water Harbour, close to Zenaida Doves that roost there overnight. The Red-necked Pigeon was later seen perching on a barbed wire fence in front of the warehouse, then feeding on the ground on whole kernels of maize that had been spilled from a truck. Raffaele *et al.* (1998) stated that, aside from its dietary specialisation on arboreal frugivory, *C. squamosa* sometimes feeds opportunistically on the ground at dairy farms. This is the first report that such opportunistic ground feeding may include spillage at a harbour warehouse, a site that offers an abundant food source often exploited by Columbids (Murton *et al.* 1972; Lévesque & McNeil 1986), at the risk of frequent disturbance by humans and machinery, which the "very wary" (Devas 1970) Red-necked Pigeon normally avoids.

Our second observation, "bread-hunting" by Grey Kingbirds, occurred at food patches set out to attract five other avian species in the field: Carib Grackles *Quiscalus lugubris*, Lesser-Antillean Bullfinches *Loxigilla noctis*, Shiny Cowbirds *Molothrus bonariensis*), Zenaida Doves and Common Ground Doves (Webster & Lefebvre in press). In urbanised coastal areas of Barbados, these five species feed together routinely on bread and other food scraps (Dolman *et al.* 1996). Island birds sometimes have broader niches than their continental counterparts, with birds on many islands being relatively tame, allowing them to respond rapidly to new food sources.

From 16 to 26 January 2000, we conducted field experiments that presented bread, rice and seed to these species at six sites in three adjacent areas of the parish of St-James, Barbados. Grey Kingbirds often feed in the vicinity of the five species but have never been seen to join them in over 15 years of similar field experiments. In the

January 2000 experiments, however, kingbirds were observed on 25 occasions to take bread from the patches, using their normal insect hunting technique. The kingbirds (usually one, but up to three individuals) typically perched on a low branch of the tree nearest to the patch, swooped down very rapidly to take a piece of bread without landing, and then flew back to the branch to eat the bread. Only larger (1 cm^2) pieces were taken. On many trials, more than a dozen birds from the five usual species fed at the 30 cm diameter patch; kingbirds sometimes failed to feed on these trials, hovering over the food and swooping down without picking up bread, or simply perching on a nearby branch, looking down at the patch. On three occasions, a kingbird picked up bread that had been moved away from the patch by a grackle and on one occasion, in June 1999 (field experiments with similar patches; Webster & Lefebvre in press), the bread was clearly kleptoparasitised from a grackle's beak. No attacks were seen at the patch itself, despite the interspecific aggression known to be frequently used by *T. dominicensis* (Raffaele *et al.* 1998), but other species often appeared defensive during a kingbird swoop. Zenaida Doves, for example, directed raised wing threats at the swooping kingbird. Kingbirds were also seen (in March 2000) chasing a flying bullfinch and grackle that were carrying bread, swooping down on birds emerging from a baited trap and then retrieving the dropped bread, and (in April 2000) kleptoparasitising bread from a bullfinch. In April and May 2000, perching kingbirds were thrown bread and observed catching it in mid-air on several occasions.

Kingbirds normally specialise on catching insects in flight, as well as taking other invertebrates, lizards, berries and, more rarely, small fish (ffrench 1991; Lefebvre & Spahn 1987; Raffaele *et al.* 1998). They are not reported to eat bread or other food scraps (Evans 1990; Raffaele *et al.* 1998; Voous 1983). In fact, the only interaction we could find in the literature between a Tyrannid flycatcher, an Eastern Wood Peewee *Contopus virens*, and bread specifically describes rejection of this food (Wyat & Stoneburner 1978). Our observation adds one more case to the large anecdotal literature on bread as a novel food type in birds (Baugniet *et al.* 1978; Bernard 1976, 1985, 1986, 1988; Hammer 1978; Hastwell 1975; Jacobs 1972; Kington 1975; Osborne 1981; Owen 1973; Reynolds 1974).

Acknowledgements

This work was funded by an NSERC grant to LL and a Commander C. Bellairs postdoctoral fellowship to SMR. We are grateful to Simran Kurir for her help with the German language literature.

References:

Baugniet, S., Lhoest, S. & van Esbroek, J. 1978. Curieux comportement d'une Fauvette à tête noire (*Sylvia atricapilla*). *Aves* 15: 33

Bernard, K. 1976. Rooks taking food from dust bins. *Brit. Birds* 69: 507

Bernard, K. 1985. Pied-billed grebe feeding on bread. *Fla. Field Nat.* 13: 19

Bernard, K. 1986. A Great egret feeding on bread. *Fla. Field Nat.* 14: 20

Bernard, K. 1988. Sanderlings flocking with Turnstone to take bread. *Brit. Birds* 81: 180

Devas, R. P. 1970. *Birds of Grenada, St-Vincent and the Grenadines*. Careenage Press, St-George's.

Dolman, C. S., Templeton, J. C. & Lefebvre. L. 1996. Mode of foraging competition is related to tutor preference in *Zenaida aurita*. *J. Comp. Psychol.* 110: 45-54.
Evans, P. 1990. *Birds of the Eastern Caribbean*. Macmillan, London.
ffrench, R. 1991. A Guide to the Birds of Trinidad and Tobago. Cornell Univ. Press, Ithaca.
Goodwin, D.G. 1983. *Pigeons and doves of the world*, 3rd edition. Cornell Univ. Press, Ithaca.
Hammer, U. 1978. Brotfütterung für Alpenstrandlaüfer. *Ornithol. Mitteil.* 30: 73.
Hastwell, K. 1975. Food of White-throated treecreeper. *Aust. Birdwat.* 6: 132.
Jacobs, H. 1972. Aufnahme von Brotkrumen durch steinwalzer (*Arenaria interpres*). *Ornithol. Mitteil.* 24: 199.
Kington, B. C. 1975. Kittiwake taking bread from hand. *Brit. Birds* 68: 245.
Lefebvre, L., Whittle, P., Lascaris, E. & Finkelstein, A. 1997. Feeding innovations and forebrain size in birds. *Anim. Behav.* 53:549-560.
Lefebvre, L., & Spahn, D. 1987. Grey Kingbird predation on small fish (*Poecilia* spp) crossing a sandbar. *Wilson Bull.* 99: 291-292.
Lévesque, H., & McNeil, R. 1986. Déplacements du pigeon biset (*Columba livia*) dans le Vieux-Port de Montréal. *Nat. Can.* 113: 47-54.
Murton, R. K., Coombs, C. F. B., & Thearle, M. J. B. 1972. Ecological studies of the feral pigeon *Columba livia* var. II: Flock behaviour and social organisation. *J. Appl. Ecol.* 9: 875-899.
Osborne, K. 1981. Adult Skylark feeding juvenile with bread. *Brit. Birds* 74: 98.
Owen, C. 1973. Little Grebe eating bread. *Brit. Birds* 66: 227.
Raffaele, H., Wiley, J., Garrido, O., Keith, A., & Raffaele, J. 1998. *A guide to the birds of the West Indies*. Princeton Univ. Press, Princeton.
Reynolds, J. F. 1974. White-fronted bee-eater apparently taking bread. *E. Afr. Nat. Hist. Soc. Bull.*, September 1974: 115.
Voous, K. H. 1983. *Birds of the Netherlands Antilles*. De Warlburg Pers, Utrecht.
Webster, S. & Lefebvre, L. In press. Problem solving and neophobia in a Columbiforme-Passeriforme assemblage in Barbados. *Anim. Behav.*
Wyat, R. & Stoneburner, A. H. 1978. Feeding and nesting behaviour of the Eastern Wood Pewee. *The Chat* 42: 59.

Address: Louis Lefebvre, Simon M. Reader & Sandra J. Webster, Department of Biology, McGill University, 1205, avenue Docteur Penfield, Montréal, Québec, H3A 1B1 Canada.

© British Ornithologists' Club 2001

Comments on George F. Gaumer and the provenance of a Giant Kingbird *Tyrannus cubensis* specimen from Mexico

by P. William Smith

Received 22 August 2000

The Giant Kingbird *Tyrannus cubensis* is currently considered a rare and endangered species endemic to Cuba (Collar *et al.* 1994, AOU 1998). In the 19th century it may have been commoner and more widespread. Prior to 1890 several specimens were collected in the southern Bahama islands (summarized by Buden 1987), and one was claimed for Isla Mujeres, off the eastern coast of the Yucatán Peninsula, Mexico, by

Lefebvre, Louis, Reader, Simon M, and Webster, Sandra J. 2001. "Novel food use by Grey Kingbirds and Red-necked Pigeons in Barbados." *Bulletin of the British Ornithologists' Club* 121, 247–249.

View This Item Online: https://www.biodiversitylibrary.org/item/123890
Permalink: https://www.biodiversitylibrary.org/partpdf/76632

Holding Institution
Smithsonian Libraries and Archives

Sponsored by
Biodiversity Heritage Library

Copyright & Reuse
Copyright Status: In Copyright. Digitized with the permission of the rights holder.
Rights Holder: British Ornithologists' Club
License: http://creativecommons.org/licenses/by-nc-sa/3.0/
Rights: https://www.biodiversitylibrary.org/permissions/

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at https://www.biodiversitylibrary.org.

This file was generated 21 September 2023 at 23:34 UTC