eastern China (Vaurie 1959, The birds of the palearctic fauna, Passeriformes, London, H. F. & G. Witherby, Ltd., p. 631). The only previous records of *grebnitskii* east of mainland Siberia are of four specimens taken on Bering and Copper Islands, Commander Islands, in 1911, 1913, and 1914 during the first 2 weeks of June (Hartert 1920, Novitates Zool. 27: 157) and a few records from Japan (Ornithol. Soc. of Japan 1958, A hand-list of the Japanese birds, p. 18).—CHRISTIAN P. DAU, *Department of Wildlife and Fisheries, University of Alaska, Fairbanks, Alaska 99701*, and DANIEL D. GIBSON, *University Museum, University of Alaska, Fairbanks, Alaska 99701*. Accepted 8 May 1973.

Chlorinated hydrocarbon pesticides in North American cuckoos.—With recent emphases on population declines of terminal carnivorous birds reportedly associated with pesticide burdens, little attention has been given to pollutant concentrations in insectivorous birds of subterminal trophic levels. A study of pesticide burdens in such birds should be instructive because they are often preyed upon by terminal carnivores. Hundreds of small birds are killed each autumn and spring at television towers in Florida, and from these large samples we have selected for an initial report data from a series of chiefly insectivorous cuckoos, 16 Yellow-billed (*Coccyzus americanus*) and one Black-billed (*C. erythropthalmus*). Collection dates were from autumn 1970 through spring 1973.

From each specimen, previously frozen in individual plastic bags, samples of interfurcular adipose tissue were removed (mean of 2.3 g from autumn birds, 1.4 g from spring birds). Each sample was thoroughly homogenized in sodium sulfate, extracted in a soxhlet apparatus for 8 hours in petroleum ether, partitioned with acetonitrile and hexane, and cleaned up with florisil. Identification and quantification of chlorinated hydrocarbon pesticides were performed on a Varian 600-D gas chromatograph and a column of 1:1 6.4% OV-210 and 1.6% OV-17 on chromosorb W. Other instrumental parameters were injection port and oven temperature 206–208°C, detector temperature 206–211°C, and a N_2 flow rate of 45 ml/min.

Of the 17 specimens analyzed, only one lacked p,p′-DDT or one of its metabolites (Table 1), with the quantity of p,p′-DDE usually exceeding that of p,p′-DDD and/or p,p′-DDT. Dieldrin occurred in one-half of the birds in low concentrations (mean = 0.07 ppm). Total DDT burdens in the adipose tissue were low, ranging from 0 to 3.34 ppm lipid weight (mean = 0.88). No mirex or PCBs were detected in any of the samples. Adults had higher total DDT levels than first-year birds in autumn. This is not an unexpected result inasmuch as an adult would have longer to accumulate pesticides than a bird-of-the-year. Too few data are available to demonstrate any consistent sexual differences. It is significant that the average total DDT concentrations in the 10 autumnal Yellow-billed Cuckoos (1.12 ppm) were greater than those of the 6 spring birds (0.42 ppm), and these obese autumnal individuals would have had a much greater total body burden of pesticides than the leaner spring birds. An explanation for these seasonal differences is incomplete but could involve excretion of pesticides during migration or over winter (Harvey 1967, Canadian J. Zool. 45: 629), translocation to the brain (Sodergren and Ulfstrand 1972, Ambio 1: 36), or to muscle cells (Findlay and DeFreitas 1961, Nature 229: 63) during lipid utilization.

A comparison of these data on cuckoos with scattered, published accounts for other North American insectivorous birds is often impossible because of different

TABLE 1

CHLORINATED HYDROCARBON PESTICIDES IN ADIPOSE TISSUE OF MIGRATING CUCKOOS

Specimen	Body weight (g)	Percent lipid in adipose tissue	ppm (lipid weight) p, p′–DDE	p, p′–DDD	p, p′–DDT	Total DDTs	Dieldrin
			Coccyzus americanus				
AUTUMN							
3 ad. (1♂, 1♀, 1?)	72.0[1] (66.2–77.3)	74.5 (71.2–78.6)	0.71 (0.23–1.55)	0.17 (0.05–0.36)	0.67 (0.19–1.43)	1.55 (0.47–3.34)	0.09 (0.01–0.27)
7 im. (5♂, 2♀)	81.8 (70.3–96.1)	66.0 (50.4–80.4)	0.46 (0.08–0.96)	0	0.49 (0.08–1.03)	0.95 (0.16–1.53)	0.01 (0 –0.04)
Means for all autumn birds	78.8	68.6	0.54	0.05	0.53	1.12	0.04
SPRING							
2♂	61.2 (52.3–70.2)	66.9 (63.9–69.9)	0.14 (0.05–0.22)	0	0	0.14	0.01 (0 –0.03)
1♀	64.8	45.4	0	0	0	0	0
3 pooled (1♂, 2♀)	44.8 (41.7–46.8)	52.1	1.17	0.10	0.16	1.43	0
Means for all spring birds	53.6	57.8	0.36	0.03	0.03	0.42	0.01
			Coccyzus erythropthalmus				
AUTUMN							
1 im. ♂	67.8	85.3	0.12	0.04	0.12	0.28	0.04

[1] Mean and range in parentheses.

quantification bases (ppm fresh carcass weight or dry weight or lipid weight). Inasmuch as lipid quantities vary widely from organ to organ and the chlorinated hydrocarbons are especially soluble in lipids, we feel that a lipid weight basis is the best quantification standard. The scattered literature contains total DDT values for various insectivorous birds ranging from 5–25 ppm fresh weight, and on a lipid weight basis these quantities would be much higher. Thus pesticide burdens in the migrating cuckoos appear to be quite low, a feature perhaps related to the cuckoos' specific insect foods or to their relatively high arboreal feeding positions.

We are indebted to Walter K. Taylor and Wilson W. Baker for procuring specimens from their respective television towers, WDBO near Orlando and WCTV near Tallahassee, Florida. A grant (GB 25872) from the National Science Foundation to the junior author helped to support this investigation.—DARLENE R. J. GROCKI and DAVID W. JOHNSTON, *Department of Zoology, University of Florida, Gainesville, Florida 32611.* Accepted 7 Sep. 73. (This paper was subsidized by the junior author.)

Oldsquaw homing in winter.—On 25 November 1972 J. Pawlowski shot at Presqu'ile Provincial Park, Ontario, an adult female Oldsquaw (*Clangula hyemalis*) I had banded as an adult 8 March 1972 less than 200 m from the recovery site. This is the first published North American recovery for an Oldsquaw banded on the wintering grounds. As no Oldsquaws remained at Presqu'ile during the summer of 1972, the bird apparently migrated to the breeding grounds after banding and then returned to the same wintering area occupied the previous year.

Homing to a particular breeding area is well-documented in many waterfowl species, but fidelity to a specific wintering area is less well-known. Probably fewer than 150 Oldsquaws have ever been banded in North America on the wintering grounds. Furthermore the species is not particularly sought out by hunters. Banding data are difficult to obtain and distribution theories must be based on small sample sizes. This particular recovery suggests a winter homing ability previously unknown in this species.—R. M. ALISON, *Ministry of Natural Resources, Toronto, Ontario, Canada.* Accepted 14 May 73.

Aerial feeding by a shearwater.—Most species of shearwaters obtain the bulk of their food from the upper few centimeters of the sea, feeding either by "pattering" or by "surface seizing" in Ashmole's classification (*in* Farner and King 1971, Avian biology vol. 1, New York, Academic Press). Some species, particularly those in the genus *Puffinus*, can also obtain food a meter or so below the surface by "pursuit diving" or "pursuit plunging." Gould (*in* Ashmole and Ashmole 1967, Peabody Mus. Bull. 24: 74) reported a Wedge-tailed Shearwater (*Puffinus pacificus*) catching flyingfish in midair, and it appears that at least one other species is able to exploit the aerial niche at least occasionally.

On 7 April 1973, 21 miles off the coast of Mexico and approximately 95 miles southeast of Acapulco, I noticed what appeared to be erratic behavior by a single Audubon's Shearwater (*Puffinus lherminieri*). The bird leaped a meter or so into the air, made a few vigorous flaps, then crash-landed on the surface 5 to 10 m from its starting point; it repeated this activity several times. Similar behavior is sometimes exhibited by this and other species of shearwaters when diving for food, but in this case the bird made no attempt to submerge, and it remained on the surface for only a second or so before repeating the performance.