———, & T. R. BIRKHEAD. 1983. Avian ecology. Glasgow, Blackie.

PETTIFOR, R. A., C. M. PERRINS, & R. H. MCCLEERY. 1988. Individual optimization of clutch size in Great Tits. Nature 336: 160–162.

RICKLEFS, R. E. 1973. Patterns of growth in birds. II. Growth rate and mode of development. Ibis 115: 177–201.

———. 1980. Geographical variation in clutch-size among passerine birds: Ashmole's hypothesis. Auk 97: 38–49.

SUHONEN, J., & M. KUITUNEN. 1990. Food choice and feeding by male and female Common Treecreeper (*Certhia familiaris*) during the nestling period. Ornis Fennica. In press.

YOM-TOV, Y., & R. HILBORN. 1981. Energetic constraints on clutch size and time of breeding in temperate zone birds. Oecologia (Berlin) 48: 234–243.

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Diet of Murres Caught Incidentally during Winter in Northern Japan

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In northern Japan, the mortality of murres (*Uria* spp.) in coastal fisheries is rarely studied. For those cases reported, no biological or environmental aspects of the kills are included. Carcasses are promptly dumped as troublesome garbage, even though as a scientific sample, those birds would provide valuable information on the distribution and ecology of seabirds during winter in this region. Consequently, the life histories of wintering neritic and pelagic seabirds remain poorly known.

On 10–15 January 1989, a large catch of murres was reported in the Sea of Japan near Yobetsu, Shiribeshi District, Hokkaido (43°19.6'N, 140°23.0'E). In that period 10 boats deployed gill nets to catch Japan Sea greenling (*Pleurogrammus azonus*) at the bottom in 50–60 m of water. Other boats fished for flounder (bastard halibut, *Pralichthys olivaceus*; brown sole, *Limanda herzensteini*) at a depth of 40 m. The incidental catch of the murres occurred only in the greenling fishery. Nets are set in the evening and hauled the next morning. Net sizes vary. For greenling, a net 60 m long, 5.4–6.4 m wide with 75–90 mm mesh is used. For flounders, nets are 150 m long, 4.8–5.2 m wide with a 120-mm mesh. Most fishing vessels are less than 20 tons, and catches are carried back to port in the nets. The fish are processed on the wharf to sort them for market. The seabirds are thrown back into the sea. The mortality of murres at Yobetsu reported here was for a 5-day period in early January 1989. The event was disclosed when the public complained of the high number of floating dead birds inside the port.

We received 431 seabird carcasses through arrangements with the Division of Wildlife Preservation, Hokkaido Regional Government. There were 42 Common Murres (*Uria aalge*; 9.7%), 386 Thick-billed Murres (*U. lomvia*; 89.6%), 1 Pelagic Cormorant (*Phalacrocorax pelagicus*; 0.5%), and 1 unidentified bird (0.2%). Large gulls and crows heavily scavenged an additional 221 carcasses, which made these unsuitable as scientific samples. Of the intact specimens, we studied stomach contents in 5 Common Murres and 50 Thick-billed Murres. Prey items found in proventriculus and stomach were identified to nearest taxon, weighed, and measured for body length.

Maximum food load was 174 g (12.2% of body weight) for the Thick-billed Murre, and 45 g (3.7% of body weight) for the Common Murre. Identified prey were Japanese sandlance (*Ammodytes personatus*) and Japanese anchovies (*Engraulis japonicus*). Sandlance were present in 30 stomachs (60%) of the Thick-billed Murre and 2 (40%) of the Common Murre. Anchovies were found in stomachs of only 3 Thick-billed Murres. Stomachs were empty (contents <1 g) in 3 Common Murres and 16 Thick-billed Murres. These individuals were excluded from calculations of diet composition by weight. In 2 Common Murres, sandlance made up 100% of total prey weight. In the 36 Thick-billed Murres, sandlance made up 97.6% of total weight, anchovies 1.8%, bivalves 0.007%, and unidentifiable matter 0.5%. Marine debris such as plastic pellets was not observed. The bivalve found in a Thick-billed Murre suggests that the bird dove 50–60 m to the sea bottom.

The fishing grounds of greenling near Yobetsu occur in coastal waters at depths of 40–60 m from early January to late February. Greenling feed exclusively on the eggs of sandlance at the bottom. The spawning ground of sandlance coincides with the fishing ground of greenling (Miyaguchi 1977). The spawning run of sandlance comprises 2–3-yr-old fish (170–220 mm long) that enter coastal waters, where they form large concentrations to spawn just above the sandy or pebbly sea bottom. Sperm of the fish rise to the surface and form a transient, white narrow strip along the coastline. This may attract murres to the site. Juvenile sandlance (<150 mm long) follow and intermingle

TABLE 1. Total length ($\bar{x} \pm$ SD) of the fresh prey in murre stomachs.

Prey species	Thick-billed Murre			Common Murre	
	n	$\bar{x} \pm$ SD	Range	n	$\bar{x} \pm$ SD
Japanese sandlance	20	157 ± 43.4	70–240	1	205
Japanese anchovy	2	104 ± 16.3	92–115	—	—

with the spawning adults (K. Miyaguchi pers. comm.). The age mix explains the large variation in total length (70–240 mm) of sandlance found in murre stomachs (Table 1).

According to fishermen, most murres are restricted to shelf waters during winter, a pattern also described by Shuntov (1972). This means that diving seabirds in the Sea of Japan have a high probability of encountering coastal bottom gill nets, set nets, purse seines, and long lines. Of these, bottom gill nets would likely have the greatest impact on seabirds during winter (Olden et al. 1985) as well as during summer (Piatt and Nettleship 1985, 1987).

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LITERATURE CITED

MIYAGUCHI, K. 1977. On the spawning habits of sandlance (*Ammodytes personatus* Girard) in the adjacent waters of the Shakotan peninsula. Hokusuishi Geppo (Monthly Rep. Hokkaido Regional Fish. Exp. Stn.) 34(9): 1–8. (In Japanese).

OLDEN, B., M. PETERZ, & B. KOLLBERG. 1985. Seabird mortality in the gill-net fishing, Southeast Kattegat, South Sweden. Anser 24: 159–180.

PIATT, J. F., & D. N. NETTLESHIP. 1985. Diving depth of four alcids. Auk 102: 293–297.

———, & ———. 1987. Incidental catch of marine birds and mammals in fishing nets off Newfoundland, Canada. Marine Poll. Bull. 18: 344–349.

SHUNTOV, V. P. 1972. [Sea birds and the biological structure of the ocean.] Natl. Tech. Inf. Serv. U.S. Dep. Commer. Springfield, Virginia. (Translated from Russian.)

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The Type Locality of *Fringilla savanna* Wilson

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The name *Fringilla savanna* Wilson was used as a subspecific name for the Savannah Sparrows (*Passerculus sandwichensis*) of most of eastern North America until Aldrich (1940) indicated his belief that the breeding populations of Nova Scotia and the Magdalen Islands were separable from those of "the Gaspé Peninsula south (excluding Nova Scotia) to New England and New Jersey west to Minnesota and Iowa." It was necessary for Aldrich to decide which of these two presumptive subspecies should bear the name *savanna*. He compared the figure in Wilson's plate (1811, vol. 3, pl. 22, fig. 3) with specimens of both and decided that it was "in all ways definitely more like the Nova Scotia bird than any other the writer has examined." He therefore applied the name *savanna* to the Nova Scotia population and described *Passerculus sandwichensis mediogriseus* with a holotype from Andover, Ashtabula County, Ohio.

Comparison of the plate with specimens was necessary because, according to Aldrich (1940: 3), Wilson described *savanna* "from a migrant female specimen, apparently now not extant, taken at Savannah, Georgia," and "any one of several subspecies might be expected to occur at Savannah, Georgia, during migration." As his authority for his statement about Wilson's type specimen, Aldrich cited Hellmayr (1938: 486). Hellmayr's full text on the type locality reads "Atlantic coast from Savannah, Georgia, to Great Egg Harbor, New Jersey (the first place accepted as type locality; type in Peale's Museum, evidently lost)." Both the American Ornithologists' Union (1957: 586) and Paynter (1970: 70) accepted the type locality as Savannah, although only Paynter specifically credited Hellmayr with this restriction.

Wilson's use of the scientific name *savanna* and the English names Savannah Sparrow and Savannah Finch