

us to work on their properties. Accommodation in Presqu'île Provincial Park was provided by the University of Waterloo. This research was supported by NSERC grant to J. Picman and NSERC Postgraduate Scholarship and University of Ottawa Scholarship to J.-C. Belles-Isles.

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Wilson Bull., 100(4), 1988, pp. 665-666

A possible case of intraspecific killing in the Lesser Snow Goose.—Most species of birds aggressively defend their territories, nests or mates against intraspecific intruders, but it is rare for either the resident or the intruder to be injured seriously or killed during such confrontations (Maynard Smith and Price 1973). There is evidence, direct and circumstantial, indicating that intraspecific killing, associated with defense of territory, nest or mate, or with forced copulation attempts, occurs (Cottrille 1950, Grubbs 1977, Loflin 1982, McKinney et al. 1983, Lombardo 1986, Belles-Isles and Picman 1987). Relatively little is known of the frequency of these events. The Lesser Snow Goose (*Chen caerulescens caerulescens*) is a monogamous, colonial, Arctic nesting bird with vigorous mate defense. Interactions are particularly aggressive during the incubation period, and are associated with a high frequency of extra-pairbond copulation attempts (Mineau and Cooke 1979). It is estimated that 2.4% of all goslings are fathered by extra-pair fertilization (Lank et al. 1988). In June 1985 at La Pérouse Bay, Manitoba, Canada (58°24'N, 94°24'W), we encountered an unusual situation in which a Lesser Snow Goose was apparently killed by a pair of Lesser Snow Geese, while intruding on a nesting territory.

On 27 May 1985 an incubated nest (P108) of a pair of blue phase Lesser Snow Geese was found. This nest was one of approximately 3100 nests found in 1985 as part of a long term study at La Pérouse Bay (see Cooke 1987). The nest was located on the periphery of the main nesting colony and was at least 100 m from another nest. When the nest was revisited on 17 June, a white phase goose which had recently died was found beside the nest cup. Its foot was wedged firmly between two branches of a small willow bush (*Salix brachycarpa*), and the feathers on the head and back of its neck were missing. On dissection

the bird proved to be a male with fully developed testes and average reserves of subcutaneous fat. Plumage characteristics indicated the bird was at least two years old. The nest had not been disturbed and all four eggs subsequently hatched successfully.

We believe that this bird entered the nest territory of the resident pair, and then, unable to escape, was subsequently killed. To our knowledge, this is the first case in which an adult Snow Goose has successfully killed another during the 19 years of our studies at La Pérouse Bay. We can only speculate as to why the goose which died visited the nest of the blue pair, but extra-pairbond copulation (EPC) seems to be the most likely explanation. This behavior is common in colonial birds (Gladstone 1979) and waterfowl (McKinney et al. 1983), and has been observed frequently during the incubation period in Snow Geese (Mineau and Cooke 1979), with males visiting and copulating with females on the nest. When an EPC is detected by the mate of an incubating female, the intruding male is attacked vigorously and chased off. A typical defense involves pecking and tugging at the head, neck and shoulder regions of the intruder (Mineau and Cooke 1979), resulting in wounds similar to those of the dead male we found. It appears that in this case the intruding male was unable to escape, and subsequently beaten to death by the defending male. Although the demise of this particular goose was probably the result of a rare accident, it demonstrates the potential for intraspecific killing associated with EPC's and mate or territory defense.

Acknowledgments.—Research of the breeding biology of the Lesser Snow Goose is supported in part by the Natural Sciences and Engineering Research Council of Canada, the Canadian Wildlife Service, and the Mississippi and Central Flyway Councils. We thank S. Jackson, F. McKinney, J. Reynolds, R. Rockwell, and three reviewers for comments on the manuscript.

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