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A case of brood mixing by Common Loons.—Common Loons (*Gavia immer*) are strongly territorial when rearing chicks (McIntyre 1975), and there is only one previous report of brood mixing in this species. Eckstein (1980) reported the successful fostering of a Common Loon chick by a pair with their own chick after a second chick was introduced by humans. We report here the details of a natural case of brood mixing by Common Loons.

In 1984, we monitored 16 territorial pairs of Common Loons on three lakes in northern Maine during nesting and chick rearing. On 1 and 2 August, RS observed a 3-chick brood in the traditionally used nursery area of the Boody Cove (BC) pair on Grand Lake Seboeis. The nest had 2 eggs and on 25 July, 2 chicks were seen. The 2 adjacent pairs, Coomb's Cove (CC) and Wadleigh Cove (WC), also had 2-egg nests that hatched successfully. On 25 July, one chick was present in WC and 2 were in CC. On 1 August, there were 2 chicks in CC, 3 in BC, and none in WC. The brood in BC was reduced to 2 chicks by 4 August and to one by 6 August. The CC brood remained at 2 chicks and none were seen in WC after 25 July.

All 3 BC chicks followed the attending adult as it swam slowly in the nursery area. The other adult was absent during observations on both days. We estimated the chicks to be 1–2 weeks old based on hatching dates, size, and plumage characteristics. We observed no aggression among the chicks or between the chicks and the adult. One of the chicks was seen riding on the adult's back on 1 August.

The chronology of chick numbers in adjacent territories suggests that a chick from the WC territory moved into the BC nursery area. The nurseries of the 2 territories were separated by 3 km, an extreme movement for a young loon. The WC chick may have been blown across the lake by the wind (cf. Sjolander and Agren 1976) or may have followed the adults during a territorial encounter and wandered into BC. There were no human residents on the lake and we do not believe the chick was moved by humans.

Common Loons should experience strong selection against acceptance of chicks from other broods because there is little possibility of relatedness. The probability of brood mixing, however, is low due to distances between nurseries (McIntyre 1983), limited movements of chicks, and strong territorial defense; and there has probably been little opportunity for natural selection to operate on chick recognition. Other gaviids also accept strange chicks (Abraham 1978, Dymond 1982).

To our knowledge, this is the first published report of natural brood mixing by Common Loons. We believe brood mixing is an unusual occurrence for gaviids and that acceptance of chicks is facilitated by a lack of selection pressure on chick recognition.

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LITERATURE CITED

- ABRAHAM, K. F. 1978. Adoption of Spectacled Eider ducklings by Arctic Loons. *Condor* 80:339–340.

- DYMOND, N. 1982. Successful fostering by Red-throated Divers. *Br. Birds* 75:577.
- ECKSTEIN, R. G. 1980. Fostering a loon chick. *Passenger Pigeon* 42:131-132.
- MCINTYRE, J. W. 1975. Biology and behavior of the Common Loon (*Gavia immer*) with reference to its adaptability in a man-altered environment. Ph.D. diss., Univ. Minnesota, Minneapolis, Minnesota.
- . 1983. Nurseries: a consideration of habitat requirements during the early chick-rearing period in Common Loons. *J. Field. Ornithol.* 54:247-253.
- SJOLANDER, S. AND G. AGREN. 1976. Reproductive behavior of the Yellow-billed Loon, *Gavia adamsii*. *Condor* 78:454-463.

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Use of fencepost cavities by nesting Eastern Bluebirds in southwestern Virginia.—Fencepost cavities are often mentioned as providing suitable nest cavities for Eastern Bluebirds (*Sialia sialis*) (Hegner 1899, Howell 1932, Zeleny 1976). Relatively little information, however, exists on Eastern Bluebirds nesting in natural cavities, as distinct from nest boxes or other artificial nest cavities. Exceptions are data from tree cavities reported by Conner and Adkisson (1974) and Pinkowski (1974, 1976). We report on the use of fencepost cavities as nest sites in the rural farmlands surrounding Blacksburg, Virginia, and on the dimensions of those cavities.

Study area and methods.—The study area lies within the Ridge and Valley Province, with elevations from 550-760 m. The general pattern of land use consists of wooded, sparsely settled ridgetops, with cleared pastures and farmlands in the valleys, along the floodplains, and along the lower slopes.

During the breeding seasons of 1976 and 1977, Eastern Bluebird nests in fencepost cavities were found by driving roads in rural areas and searching for adult bluebirds on utility wires or fencerows. Once adults were spotted they were observed until we determined presence or location of the nest cavity. We also searched fencerows on foot for nest cavities. (However, when bluebirds were present in an area their vocalizations and their perching in open areas made them conspicuous.) All nests were within 32 km of Blacksburg.

Measurements of nest cavities were made after the breeding season in 1977. Nest material was removed from the cavity before interior dimensions were taken. Measurements included (1) height of the cavity entrance, the distance from the ground to the bottom of the cavity entrance; (2) entrance diameter, the average of the vertical and horizontal dimensions of the cavity entrance; (3) interior diameter, the average of four measurements, two taken at the cavity entrance and two taken at the cavity bottom; and (4) cavity depth, the distance from the bottom of the cavity entrance to the cavity bottom. Cavity volume was calculated from interior dimensions.

Means of cavity dimensions were tested for significance using the Mann-Whitney *U*-test (Blalock 1979).

Results and discussion.—Thirty-five nests of Eastern Bluebirds in fencepost cavities were found (Table 1). Other nests found in fencepost cavities included those of European Starlings