simple continuation of predusk feeding activity such as that reported for House Sparrows and other " city birds" (King 1967, Felton 1969, Blackett 1970, Broun 1971, Brooke 1973, Marti 1973, King and King 1974). Moonrise occurred at 1108 and moonset at 2240, so there was no moonlight to extend twilight. The behavior occurred over 3 hours before sunrise (0622), so it is not similar to the "early start" seen by Blackett (1970), who reported Blue Tits emerging from their nest holes to feed one hour before daylight, perhaps in response to early morning traffic. Lighting on the UMBS campus is kept to a minimum, and is usually limited after 2300 to a few offices and laboratories in active use. Thus the occurrence of a lighted window at 0300 is not a predictable event to the degree seen in other reported instances of nocturnal feeding by artificial light.

Literature Cited

Blackett, A. 1970. Blue Tits and gulls feeding by artificial light. Brit. Birds 63: 136.

Brooke, R. K. 1973. House Sparrows feeding at night in New York. Auk 90: 206.

Broun, M. 1971. House Sparrows feeding young at night. Auk 88: 924–925.

Felton, C. 1969. House Sparrows feeding in factories throughout night. Brit. Birds 62: 80.

King, B. 1967. Spotted Flycatchers catching insects after dark by artificial lighting. Brit. Birds 60: 255–256.

King, B., and King, M. 1974. Nocturnal feeding by Pied Wagtails in winter. Brit. Birds 67: 303.

Leck, C. F. 1971. Nocturnal habits of Ring-billed Gulls (*Larus delawarensis*) at Thimble Shoal, Virginia. Chesapeake Sci. 12: 188.

Marti, C. D. 1973. House Sparrows feeding young at night. Wilson Bull. 85: 483.

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Premature parental behavior of a Red-shouldered Hawk.—On 15 July 1976 I watched a young female Red-shouldered Hawk (*Buteo lineatus*), only 65–70 days old, carry a green leafy twig to the crotch of a tree. It was a clear but unsuccessful attempt to build a nest. The tree was 4 ft from, and almost above, three Harrier (*Circus cyaneus*) chicks on the floor of a screened porch. The two youngest Harriers were downy chicks about 11 and 16 days old; the third, about 22 days old, had lost much of its down. It was dark feathered and nearly as large as the Red-shoulder. The Red-shoulder made frequent visits, watching the chicks. All three chicks peeped loudly begging for food and the oldest chick flapped its wings and pushed against the screen in an obvious attempt to get to the Red-shoulder whenever she appeared.

The following afternoon the Red-shoulder brought a young mouse and tried to feed the Harriers through the screen. All three chicks competed to reach the proffered prey. At this time the young Red-shoulder had been at hack for 37 days and hard penned about 9 days. She was not yet self-supporting. She still received most of her food from me and had been known to make only four previous kills.

I moved the Harriers to a welded wire pen outdoors so the Red-shoulder could feed the chicks through the large mesh. An hour later, she pulled a dead branch from the ground and carried it to the pen: she tried to push it through the wire but when she couldn't she put it on top of the pen.

As it was not possible to tell whether the Red-shoulder was stimulated by the two small downy young or by the large dark one, I put two identical 36″ × 24″ × 10″ wire pens 4 ft apart and placed the downy young in one and the older dark chick in the other on 17 July. That afternoon the Red-shoulder flew first to the oldest Harrier and then to the younger ones, perching on top of each pen and intently watching the chicks below. She then flew to a nearby bush and tried to break branches with both her beak and feet. When she couldn't break any she returned first to the downy chicks' pen and then hopped over to the older Harrier's pen.

To present more opportunities for feeding I put a 3-inch fish in a shallow tray near the pens. On 18 July the Red-shoulder killed the fish and immediately took it to the Harrier pens where the chicks were peeping loudly. She stood between the pens watching both the downy chicks and the older one before hopping onto the downy chicks' pen. She watched the older chick as it flapped its wings and pushed against the pen trying to get to her, and then flew to the older chick's pen where she promptly ate the fish herself.

The Red-shoulder did not react any more strongly to the downy chicks than she did to the older, dark feathered chick. It seems apparent that simply the presence of the Harrier chicks and their begging cries were enough to stimulate the Red-shoulder's attempted adoption.

The Red-shoulder had been reared by two penned Red-tailed Hawks (*Buteo jamaicensis*), one of which was removed when the Red-shoulder was put at hack. At the time of the attempted adoption the Red-shoulder was still returning to the pen to beg food from her Red-tail foster parent.

This immature female (later sexed internally) had never gone through courtship, never copulated, never laid eggs, and certainly never reared young. Scarcely able to hunt for herself, she tried (even if ineffectually) to feed and to build a nest for small young of a different species.— J. RANDOLPH ACKER, *College of Natural Resources, University of Wisconsin-Stevens Point, Stevens Point, Wisconsin 54481.* Accepted 7 Dec. 76. (This paper was subsidized by the author.)

Predation on gulls by Bald Eagles in Washington.—Studies on communication by the Glaucous-winged Gull (*Larus glaucescens*) were made between 15 June and 15 August 1971 to 1975 in a breeding colony on Colville Island, 11.7 km west of Rosario Beach, Skagit County, Washington. Colville Island is a part of the San Juan National Wildlife Refuge.

Frequently (up to six times in one day), we saw a Bald Eagle (*Haliaeetus leucocephalus*) fly close to the island in an apparent attempt to prey on the gulls. Each time this happened the responses by the gulls were spectacular. As soon as the gulls saw the eagle, the noise level of the colony dropped, the gulls oriented themselves toward the approaching predator, and the chicks ran for cover. Then the adult gulls nearest the eagle began to yelp, and this yelping spread in a wave to other parts of the island. If the eagle came no closer the gulls soon quieted down, but if it continued to approach large numbers of gulls flew up to mob the eagle, all the while emitting their yelp and alarm calls. The eagle responded by flying away from the island, sometimes trying to defend itself in midair with its talons. The mobbing gulls eventually drove the eagle back across the channel to Lopez Island where it probably nested.

The colony-wide response to the eagle was in striking contrast to responses made to a river otter (*Lutra canadensis*) that periodically preyed upon gull chicks during the summer of 1974 (Hayward et al. 1975, Murrelet 56: 9). Responses to the otter were quite local in nature. In fact, we could follow the otter's progress through the tall grass by watching where the gulls circled above it. Only gulls in territories within approximately 5 m of the otter flew up in response to its presence. These gulls circled low over the disturbed area emitting their alarm and yelp calls. Some gulls swept down and attacked the otter. The attacking gulls were usually those whose territories were being trespassed upon at the moment.

The difference between the responses of the gulls to the eagle and the otter may have been partially due to the fact that the eagle, flying above the colony, was visible to nearly all the island's inhabitants. Conversely the otter, slipping through the tall grass, was visible only to the few nearest gulls. This suggests that visibility may be an important factor in predator detection by gulls, and may explain why these birds prefer to nest in low vegetative cover (Hayward et al. MS). The more widespread response to the eagle may also have been due to a greater uncertainty on the part of the gulls as to where the eagle would strike. The course of the land-bound otter was perhaps more predictable to the gulls. Consequently only those gulls under direct threat of attack may have responded.

During July 1973 as we were landing our boat along the east coast of the island, an eagle was just making off with a gull chick in its talons, but while trying to ward off a barrage of air attacks by the swarming gulls, the eagle released the chick and it dropped to the water below. We retrieved the chick and found it had been decapitated. This was the only time we saw an eagle successfully take a chick. Usually the adult gulls were successful in chasing the eagle away before it could make a capture. We do not know if the eagle ever caught an adult gull.

Lien (1975, Auk 92: 584) watched several interactions (one at a breeding colony) between Great Black-backed Gulls (*Larus marinus*) and Bald Eagles over Placentia Bay, Newfoundland in 1973. He never saw an eagle catch a gull, and noted that the gulls were always able to chase the eagle away.

Fish make up the bulk of the annual diet of the Bald Eagle, but as Bent (1937, U. S. Natl. Mus. Bull. 167: 345) noted, other birds (including gulls) are commonly preyed upon when fish are not readily available. We presume that eagles frequently preyed upon gull chicks in the San Juan Islands, especially during the gull nesting season.

We express our appreciation to the staff of the Walla Walla College Biological Station who made their facilities available to us during our work with the gulls. We are also grateful to the U. S. Department of Interior, Fish and Wildlife Service for permission to work on Colville Island.—JAMES L. HAYWARD, JR., WM. HUMPHREY GILLETT, CHARLES J. AMLANER, JR., AND JOHN F. STOUT, *Biology Department, Andrews University, Berrien Springs, Michigan 49104.* Accepted 23 Dec. 75.