

Barn Swallows are unable to avoid the strips even when the strips are hung near the side walls of the barn. Once the swallows hit a strip, they struggle and become covered with the sticky compound. When I released two individuals from fly paper, their feathers were stuck together and they were unable to fly. Thus, fly paper strips should not be used in barns with Barn Swallows.

Another unnatural hazard for Barn Swallows is the accumulation of horsehairs (long mane and tail hairs) in and around barns. Horses often scratch the base of their tail against their wooden stall with the resultant loss of hair (L.E.B. personal observations). These are incorporated into the nests in the old dairy barn, and Bent (1942) noted that the birds sometimes become entangled in the hairs resulting in death. Although horsehairs are numerous in the old dairy barn, no Barn Swallow mortalities have been observed.

Other Nesting Avian Species

Several other avian species have successfully nested in the barn. The introduced Rock Dove (*Columba livia*), European Starling (*Sturnus vulgaris*), and House Sparrow (*Passer domesticus*) have built nests on top of beams high in the haymow. House Sparrows have also nested in the lower level of the old dairy barn on top of Barn Swallow nests (see Bent 1942, Brown and Brown 1999). The House Sparrows incorporate excessive amounts of straw, goose feathers and other debris into these nests, trashing them, and sometimes causing them to fall to the floor. This does not, however, deter the Barn Swallows as they readily build new nests at other locations in the barn.

The most unusual avian nesting in the barn was by the Carolina Wren (*Thryothorus ludovicianus*) in the summer of 1996. A single nest was built and a brood reared. In summer 2001 a male Carolina Wren frequently entered the barn and sang loudly at various locations, but I never found a nest. Natural nesting sites of this species are often associated with trees but nests are sometimes constructed near or in buildings (Bent 1948, Haggerty and Morton 1995).

Other Animals

Vertebrates – Other species of vertebrates (not previously mentioned) that occasionally occupy the barn include snapping turtle (*Chelydra serpentina*), plains garter snake (*Thamnophis radix*), eastern garter snake (*Thamnophis sirtalis*), American toad (*Bufo americanus*), and cricket frog (*Acris crepitans*) (declining in the northern Midwest including central and northern Illinois). Additionally, white-tailed deer (*Odocoileus virginianus*), which are rather tame on the homestead, have been observed to move quite close to, but not into the barn. Deer browse damage to woody vegetation and deer tracks have been observed, respectively, within 8 ft

5 in (2.57 m) of the barn wall and 14 in (0.36 m) of one of the large machinery doors.

Invertebrates – A multitude of insects and other invertebrates occupy the barn. Among the more prominent are numerous flies, crickets (live among the rabbit feces on the floor), booklice (live among debris on the floor of the hay mow), bumblebees (queens overwinter under boards on the concrete floor of the lower level), organ-pipe mud-daubers and thread-waisted mud-daubers (build many nests on walls and beams in both levels of the barn), woolly worms (overwinter under boards, etc. on the concrete floor), many species of butterflies and moths (e.g., red admirals, which are rather tolerant of humans [Mikula, 1997], sometimes even alighting on persons in the barn), darkling beetles (pests of stored grain products), lady beetles (introduced and native species; large numbers swarm on the windows in fall and spring, and overwinter in cracks in the concrete and under materials on the concrete floor), jumping spiders (on concrete walls, particularly around windows and doors), and wolf spiders (live under boards and other objects on the concrete floor). Additionally, giant Chinese praying mantids (introduced) gather outside the barn on the walk doors, around windows, and near the top of nearby high vegetation (e.g., Queen Anne's lace) poised to prey on other abundant insects. Paper wasps build nests underneath the eaves outside the barn.

A total of 24 vertebrate species including Barn Swallows have been found in the barn; twelve are native species, five are introduced species, and seven are domestic species. Thus, the number of non-native species (twelve) is the same as the number of native species (twelve). When comparing numbers of species in the lower level (where the Barn Swallows occur), the number of native species (eleven) is slightly greater than the number of non-native species (ten). Among invertebrates, flies are by far the most numerous in individuals. Thus, the human-made barn presents a very un-natural biotic and physical environment for Barn Swallows.

DISCUSSION

It is clear that the old dairy barn acts as a sanctuary for a great many vertebrate and invertebrate species of animals including Barn Swallows. There are at least five selective advantages for Barn Swallows to utilize this barn. First, there is ample availability of suitable nesting sites (in contrast to flat land prairie/agricultural land). Second, nests from former years are still available for use, with usually only minor repair necessary. If the nests (constructed largely of mud) were located outside the shelter of the barn (or other human-made structures), the nests would much more likely be damaged or destroyed by the weather and other animals. Third, there is an abundance of prey (e.g., flies resulting