The *Un*-Natural History of Barn Swallows in an Old Dairy Barn

by Lauren E. Brown

Many native avian species have a close association with humans, but relatively few are known to regularly inhabit buildings constructed by humans. Examples of the latter are Barn *(Tyto alba)* and Great Horned Owls *(Bubo virginianus)*, Rock Dove *(Columbia livia)*, Eastern Phoebe *(Sayornis phoebe)*, Black and Turkey Vultures *(Coragyps atratus* and *Cathartes aura)*, House Sparrow *(Passer domesticus)*, American Kestrel *(Falco sparverius)*, European Starling *(Sturnus vulgaris)*, and Carolina *(Thryothorus ludovicianus)*, Bewick's *(Thryomanes bewickii)*, and House Wrens *(Troglodytes aedon)*, as well as several swallow species in the Family Hirundinidae, particularly the Barn Swallow *(Hirundo rustica)*, which regularly nests in barns and other buildings. Under such conditions, the behavior and life cycle of the Barn Swallows are often altered by the un-natural environment imposed by humans. This paper presents highlights of observations made over 30 years on Barn Swallows associated with an old dairy barn in central Illinois. Information is presented on nests and nesting (including a record, continuous, long-term use of a nest); foraging, food, and feeding; predators, potential predators, and hazards; other avian species nesting in the barn; and notes on other vertebrate and invertebrate species found in or near the barn. Finally, I discuss selective advantages for Barn Swallows to utilize the old dairy barn as opposed to nesting in more natural sites.

THE DAIRY BARN

Structure – The two-story, gambrel-roofed barn is on a 47-acre (19-hectare) farm 3.1 mi (5.0 km) NNE of Hudson in McLean County and was built in 1911-1913 (Fig. 1). Its dimensions are 40 ft (12.19 m) high X 34 ft 3 in (10.44 m) wide X 44 ft 5 in (13.54 m) long. The internal beams and rafters are un-planed wood (white oak and walnut), the siding on the upper story is also wood (spruce), the walls of the lower story are concrete block, the roof (replaced) is sheet metal, the lower floor is concrete, and the upper floor is wood (maple). In the upper story there are two windows and two doors, 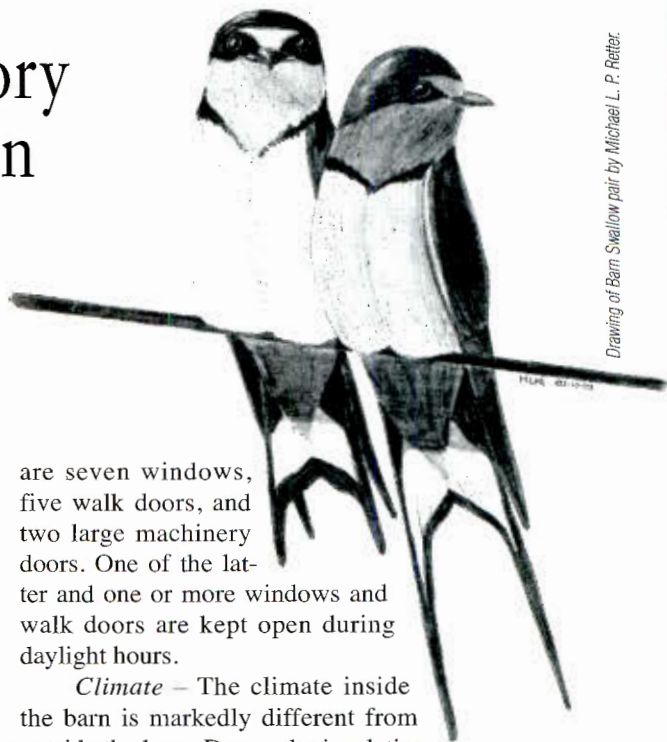which are usually kept closed. In the lower level there are seven windows, five walk doors, and two large machinery doors. One of the latter and one or more windows and walk doors are kept open during daylight hours.

Climate – The climate inside the barn is markedly different from outside the barn. Due to the insulating effects of the thick concrete walls, the temperature rarely rises above 86° F (30° C) in the lower level even when it is substantially higher outside the barn. Cold snaps in late spring likewise have little effect in lowering inner-barn temperature to any great extent. The thick walls also provide protection from the frequent high winds that blow across the flat land south of the barn. Rain does not enter the barn except to a limited extent through open windows and doors. Thus, the barn provides considerable protection from climatic extremes for its animal occupants.

Use and Notoriety – The large upper story is a haymow used for storage of hay and straw. In the lower level, the stanchions and calf pens were removed to provide room for agricultural implements and small livestock (chickens, ducks, geese, rabbits, pony). The barn is well-known in northern McLean County because of the large number of little brown bats *(Myotis lucifugus)* that roost in the haymow. Periodically during summers, rural residents and bat enthusiasts gather around the barn at sunset for a "Bat Watch" and count the bats as they rapidly emerge from cracks around the door of the haymow for their nightly foraging. Typically, about 150 are counted.

METHODS

The population of Barn Swallows was studied each year during 1971-2001 from mid-spring when they arrived until late summer when they left. Observations were made primarily at chore times (7:30-8:30 a.m., 4:30-5:30 p.m.) daily over the 31-year time span (except for a few brief periods when I was gone on pro-