Part one of this essay discussed the benefits and costs of social life for cliffs swallows and their far- ranging and nesting behavior. The essay continues with discussion of the cliff swallow’s opportunistic breeding behavior and colony size.

BY CHARLES R. BROWN

Do unto others before they do unto you

The cliff swallow’s highly social nature also illustrates a fundamental consequence of foraging together for most animals. There are plenty of opportunities to exploit others around you. By color-marking cliff swallows and intensively observing at their nests, we discovered that these birds are constantly trying to use their neighbors to their own selfish advantage. A bird will intrude into the nest next door, steal its neighbor’s nesting material (grass stems) or the nest mud on its nest, climb down to copulate with its neighbor’s mate, throw out one of its neighbor’s eggs or in some cases even lay an egg in its neighbor’s nest. These are not cases of mistaken identity, as cliff swallows closely know whose nest is whose. Sometimes these trophic attempts are almost always successful, as birds repeatedly try to enter several of their neighbors’ nests in rapid succession. Typically, cliff swallows guard their nests almost constantly, and predators can only rarely prevent their neighbors from doing these things to them, but there are enough long

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Monarch butterflies

The last migration

By Benjamin Visser

On May 23 my wife yelled to me from the back of our house, “There’s a monarch on the allium!” The last two springs, this being our third here, we had not seen a monarch butterfly until around my birthday in mid-July. And frankly, I didn’t expect to see one at all this year. A year ago I staked out a garden with my camera in hand, there it was, fighting 40 mph wind gusts, rising and slicing through the air to land on an allium, so bumblebees copped it around like it knew. I knew the moment wouldn’t last.

In 2007 my wife and I moved into our first home together, now constructed on the edges of the beautiful Holdout American prairie in the corner of the quarter-acre lot had bare soil while still wrapped around its trunk, a property marker for some farmer’s previous field. As a child, I tended my garden with my mother in Minnesota, and as I grew older, confined to hospitals, I knew I’d want a big garden someday. With a can of orange spray paint, a day or two before the seed came in, I marked off 1,200 feet of beds and for borders an ornamental garden designed specifically for native wildlife and plants. Milkweed was first on the list. I actually knew little about gardening but meticulously researched Hans and Midwood plants online, purchasing the right plant for the right spot—the dry hill and the muddy clay valley of my small yard. I dug $10 holes for $1 plants from morning glory to 90-degree heat for two summers. Some of the first plants were two Asclepias incarnata (swamp milkweed) and A. tuberosa (butterfly weed), larval host plants for the monarch butterfly and named after the Greek god of healing, Asklepios. Milkweed is said to treat wounds and poison ivy, remove mucus from the lungs, cool fevers and work as a contraceptive. You never know how much you need your plants.

At night that first summer of gardening, I’d dream of black- laden orange butterflies and dozens of other insects and birds flocking in my mind. But I didn’t know what to expect. I was a book-reading graduate student, no botanist or entomologist. In 2008, when I noticed a yellow, white and black striped caterpillar, I really had no idea it was a monarch until I did a Google search. I didn’t know the 30 pen-tip-sized white pepe on the underside of leaves were eggs that would hatch a few days after being laid. The monarchs had come like magic.

Folklore states that if a butterfly flies into your face, cold weather is imminent. For some, it means that within 10 days suf- ficient frost will turn the leaves the same color as the butterfly. In central Mexico come fall, the monarchs arrive at the end of a 3,000-mile migration from as far as southern Canada on the Day of the Dead, which marks the return of a deceased loved one’s soul. No one knows how these monarchs, several generations removed from their northward-bound ancestors, find their way back to their winter home.

The Mariposa Monarch Biosphere Reserve (188,000 acres) lies in the central Mexican states of Michoacan and Mexico. While Angangos is considered the unofficial monarch headquarters, the most prominent overwintering site is in Ezo Rosas, where as many as 10 million monarchs roost per acre in the fine and pine trees of the spreaded on only 12 mountaintops. The trees provide shelter from cold rains, which can freeze the monarchs, while they also help in warming rising from the forest floor. The conditions are precariously per- fect, delicate microclimates, and only since 1975— as a result of habitat destruction and habitat destruction— have scientists known the home location of the world’s only migrating butterfly.

The summer breeding range of monarchs east of the Rockies is 12 million square miles, but here the insects in only a few colonies that range in size from one to 10 acres. Like mas- sive dreadlocks, they hang from trunks and branches in suspend-