

EPILOGUE: THE BIRDS I LOVE

Visitors to our nature reserve ask which is my favorite bird. Occasionally I lightly reply: "Tanagers and woodpeckers." At other times I respond more thoughtfully: "I have many favorite birds, but I do not love all birds equally." Preferences for birds are as diverse as the temperaments of the people who pay attention to them. Some like birds merely because many are beautiful and sing sweetly. As household pets they are companionable. Some bird-watchers are most attracted by raptors, perhaps only because they are big and easy to see; others, of a more sanguinary temperament, admire their efficiency as predators. I am unimpressed by the bigness of animals; the largest are mites on the cosmic scale, even the most powerful pitifully weak compared with our big machines. Moreover, adulation of bigness and power seems thoughtless and vulgar, the cause of many of humanity's woes. Some of the most admirable creations, both natural and human, are small and finely organized.

Although I share the widespread admiration of birds' beautiful plumage and am happy in the wild places where I go to see them, this is not what chiefly attracts me to birds. Flowers are no less beautiful and are easier to approach closely and enjoy; many butterflies are lovely and less elusive than birds. What draws me strongly to birds is their behavior—their characters, I might say. The capacity to care, devotedly and consistently, is to me the most laudable aspect of animals.

To call our own species "the animal that cares" is the noblest epithet that we can apply to humanity, greater praise than the designations of "the rational animal" or "the tool-using animal." To be sure, caring is very sporadically developed among people, and many individuals hardly deserve this epithet; but the same might be said about reason, which is often misused, or about skill in making or handling tools. Creativity is closely allied to caring; to create anything well we must certainly care about it. Among animals, as among humans, caring and creativity are unequally distributed; in many, even of the warm-blooded vertebrates, these attributes are almost totally lacking. Birds excel all other nonhuman verte-

brates in caring and creating, and this is what attracts me so strongly to them.

More than any other animals that I know, birds care for their bodies, bathing frequently, spending a considerable proportion of their time arranging and oiling their wonderful vesture of feathers. Many care for their mates, preening them, often reciprocally, and/or feeding them. As builders of nests, only social insects, notably wasps, can compare with birds in the diversity and complexity of their creations. Many birds not only build nests but continue to maintain them. Most commonly, they keep them clean, removing wastes and, as well as they can, invading insects, especially ants. Builders of some of the most elaborate nests, such as the castlebuilders or spintails (members of the Neotropical ovenbird or hornero family) constantly patrol their big, enclosed structures, tucking falling twigs into place, bringing fresh materials, promptly closing a gap in the wall, such as ornithologists make as the only way to examine eggs and nestlings. In addition to building nests for reproduction, many birds, notably wrens, make special dormitory nests.

Birds care for their young in more diverse ways than do other vertebrates, except dutiful human parents. After patiently incubating their eggs for from ten days to several months, they brood the nestlings to keep them warm, with their bodies shield them from strong sunshine, and, especially the altricial species, work hard to nourish them. After the young leave the nest, the adults guide and continue to feed them for weeks or months, while, mainly from parental example, they learn behavior that promotes survival. As night approaches, their elders lead them to a safe roost or to the nest in which they were reared, if not to one built specially for their comfort. In most species of birds, the two parents cooperate closely in rearing the young, the father feeding and guarding them if not also incubating the eggs and brooding the young, as in many avian families. The young of many constantly resident birds remain with their parents on the family territory for one or more years, helping to rear their younger brothers and sisters, in a cooperative breeding association. Only in the most united human families do the generations work so closely together.

Among ourselves, caring has profound psychic consequences. It leads the mind and its affections outward from the self, giving fresh interests and new attachments. We wish to know more about whatever receives our care. The longer anything, living or lifeless, receives our devoted attention, the more we love it.

The psychic effects of caring and creating in birds remain to be explored. That caring generates strong attachments is evident when apprehensive parent birds risk their lives attacking humans or other animals that actually or apparently threaten their young. Given the frequency of predation on nests by animals too strong to be resisted, natural selection could hardly promote such rash behavior, which may result in the destruction of both parents and progeny. Not birds who boldly confront pillagers of their nests, but those who prudently restrain their zeal and live to nest again, are likely to contribute most to the perpetuation of their kind. The manifold activities of preparing a nest and rearing a brood should sharpen intelligence, even if in the main they follow innate patterns which, however inclusive they become, can hardly provide detailed guidance amid all the diversities of complex natural situations. Intelligent adjustments are frequently needed.

Certain birds that neither incubate eggs nor attend nestlings demonstrate great capacity for caring. Among them are the megapodes or mound builders of Australia, New Guinea, and neighboring islands. One of these unique birds, the Mallee Fowl of arid western Australia, rakes together a great mound of earth and fallen vegetation, in the midst of which the female of a single pair lays a succession of big eggs. They are maintained at an almost constant temperature favorable for incubation by the skillful management of the heat of fermentation and solar radiation. The strenuous construction and care of these large incubation mounds occupies the pair, mostly the male, through much of the year. When the superprecocial chicks hatch, they work their way upward to the surface of the mound without parental assistance and wander off alone, never receiving an adult's attention.

Male bowerbirds, also of New Guinea and Australia, build little tepees, huts, Maypoles, or avenues, all of interlaced twigs. Each belongs to a single adult, who adorns his bower with colorful flowers, fruits, and human artifacts where available. He keeps his display fresh by removing wilted flowers and shriveling berries and bringing others. Some of these arrangements, notably those of the severely plain Brown Gardener Bowerbird of western New Guinea, are truly charming, a source of wonderment and delight to the few naturalists who have been privileged to see them in their remote forests. Females visit the bowers for the fertilization of their eggs, then rear their broods unassisted.

The peaceful coexistence of many different species is another endearing

aspect of avian life. A mixed flock wandering through a tropical forest may contain a score or more species of diverse families and ways of foraging, each going harmoniously about its business; if conflicts were frequent and severe, the flock would disintegrate. In a garden with enough trees and shrubbery for nest sites, a diversity of birds can raise their broods in amity, with no greater misbehavior than pilfering materials from neighbors' unfinished nests. Occasionally a helpful bird feeds a neighbor's young, or two pairs jointly attend their broods.

Birds serve the plants that nourish them. Hummingbirds, honeycreepers, sunbirds, lorikeets, and many others pollinate the flowers that yield them nectar. Bees, butterflies, and other insects pollinate more flowers than do birds, but many bird-adapted flowers would set few seeds without the fecundating visits of birds.

A great variety of frugivores disseminate the seeds of plants that offer them fruits. After digesting off the pulp of berries or arillate seeds, they regurgitate or defecate viable seeds, thereby spreading widely the plants whose bounty they enjoy. (Parrots, which prefer embryos to fruit pulp, do not participate in this exchange of benefits, but they have other points in their favor.) Insectivorous birds, many of which are also fruit eaters, perform an indispensable service in reducing the numbers of insects which, without this check, would defoliate trees and shrubs that nourish frugivorous animals. Although the birds are probably unaware that they help to reproduce the plants whose fruits they eat, this service must be credited to them; just as we praise a lovely human face, although this is a gift of nature rather than a product of deliberate efforts.

Industrious woodpeckers carve many holes that eventually become nesting cavities or dormitories of birds and small mammals unable to make them for themselves. I believe it no exaggeration to say that the activities of birds benefit a greater diversity of organisms than do those of any other division of the animal kingdom.

These, then, are the birds I admire, love, and do what I can to protect: They are caring-creative animals, attentive to their mates, builders of nests that are often beautiful or elaborate, usually keeping them clean, faithful parents, good neighbors, serviceable to the plants that nourish them, all in addition to delighting our eyes with their beauty and cheering us with their songs. Most of the birds that I know well have several of these points in their favor. No other class of animals contributes so much to the beauty and interest of our planet, and to the stability of our terrestrial ecosystems,

while making such small demands upon their productivity. Of the approximately nine thousand species of birds, only a small minority make themselves objectionable by becoming nest pirates or parasites, agricultural pests, or preying heavily on other birds more worthy of our love and protection.

Caring makes the more lovable birds akin to the more lovable humans; both care and create in due proportion to their intelligence, breadth of interests, strength, and manipulative skill. It is distressing to see birds that care so devotedly for their nests and young harassed by animals that care for nothing, especially snakes, the chief pillagers of nests in tropical and temperate lands. Happily, many birds soon recover from their bereavement to try again and again to rear fledglings, by their admirable perseverance keeping ecosystems flourishing and cheering us by their continuing abundance.

In childhood I was strongly attracted to feathered creatures, as was Jean Henri Fabre (1924) to those with six or eight legs. As with him, this dominant love has persisted into life's tenth decade. As I review my seventy years of bird study, nearly all in the Neotropics, I am comforted by remembering that I have never intentionally harmed, for science or otherwise, an adult bird or its young, although I was responsible for the deaths of two or three raptors preying upon birds I was studying and/or trying to protect. In the evening of life, I am distressed by the thought that humankind, as a whole, lacks the generosity to freely share an exceptionally favored planet with even the more compatible of the free creatures that surround us. Earth did not become habitable for the benefit of a single species.

BIBLIOGRAPHY

- Amadon, D. 1959. "The Significance of Sexual Differences in Size among Birds." *Proceedings of the American Philosophical Society* 103:531-36.
- Andrle, R. F. 1967. "The Horned Guan in Mexico and Guatemala." *Condor* 69:93-109.
- Belcher, C., and G. D. Smooker. 1934-37. "Birds of the Colony of Trinidad and Tobago," parts 1-4. *Ibis*.
- Bent, A. C. 1932. *Life Histories of North American Gallinaceous Birds*. U.S. National Museum Bulletin no. 162.
- . 1937. *Life Histories of North American Birds of Prey*, part 1. U.S. National Museum Bulletin no. 167.
- . 1940. *Life Histories of North American Cuckoos, Goatsuckers, Hummingbirds and Their Allies*. U.S. National Museum Bulletin no. 176.
- . 1942. *Life Histories of North American Flycatchers, Larks, Swallows and Their Allies*. U.S. National Museum Bulletin no. 179.
- Blanchard, B. 1941. "The White-crowned Sparrows (*Zonotrichia leucophrys*) of the Pacific Seaboard: Environment and Annual Cycle." *University of California Publications in Zoology* 46:1-178.
- Carriker, M. A., Jr. 1910. "An Annotated List of the Birds of Costa Rica Including Cocoa Island." *Annals of the Carnegie Museum* 6:314-915.
- Cherrie, G. K. 1916. "A Contribution to the Ornithology of the Orinoco Region." Museum of the Brooklyn Institute of Arts and Sciences, *Science Bulletin* 2:133a-374.
- Crawford, R. L. 1981. "Bird Casualties at a Leon County, Florida, TV Tower: A 25-year Migration Study." Tall Timbers Research Station Bulletin no. 22.
- Davis, T. A. W. 1958. "The Displays and Nests of Three Forest Hummingbirds of British Guiana." *Ibis* 100:31-39.
- Dawson, W. L. 1923. *The Birds of California*, vol. 2. San Francisco, Calif.
- Delacour, J., and D. Amadon. 1973. *Curassows and Related Birds*. New York: American Museum of Natural History.
- Delannoy, C. A., and A. Cruz. 1988. "Breeding Biology of the Puerto Rican Sharp-shinned Hawk (*Accipiter striatus venator*)." *Auk* 105:649-62.
- De la Peña, M. R. 1979. *Aves de la Provincia de Santa Fe*. Provincia de Santa Fe: Ministerio de Agricultura y Ganadería.
- Emmons, L. H. 1990. *Neotropical Rain Forest Mammals: A Field Guide*. Chicago, Ill.: University of Chicago Press.