MY LIFE AS A NATURALIST[1]

I AM asked to give an account of my interest in natural history, and my experience as an amateur naturalist. The former has always been very real; and the latter, unfortunately, very limited.

I don't suppose that most men can tell why their minds are attracted to certain studies any more than why their tastes are attracted by certain fruits. Certainly, I can no more explain why I like "natural history" than why I like California canned peaches; nor why I do not care for that enormous brand of natural history which deals with invertebrates any more than why I do not care for brandied peaches. All I can say is that almost as soon as I began to read at all I began to like to read about the natural history of beasts and birds and the more formidable or interesting reptiles and fishes.

The fact that I speak of "natural history" instead of "biology," and use the former expression in a restricted sense, will show that I am a belated member of the generation that regarded Audubon° with veneration, that accepted Waterton°—Audubon's violent critic—as the ideal of the wandering naturalist, and that looked upon Brehm° as a delightful but rather awesomely erudite example of advanced scientific thought. In the broader field, thank Heaven, I sat at the feet of Darwin° and Huxley,° and studied the large volumes in which Marsh's° and Leidy's° palæontological studies were embalmed, with a devotion that was usually attended by a dreary lack

of reward—what would I not have given fifty years ago for a writer like Henry Fairfield Osborn,° for some scientist who realized that intelligent laymen need a guide capable of building before their eyes the life that was, instead of merely cataloguing the fragments of the death that is.

I was a very nearsighted small boy, and did not even know that my eyes were not normal until I was fourteen; and so my field studies up to that period were even more worthless than those of the average boy who "collects" natural history specimens much as he collects stamps. I studied books industriously but nature only so far as could be compassed by a molelike vision; my triumphs consisted in such things as bringing home and raising—by the aid of milk and a syringe—a family of very young gray squirrels, in fruitlessly endeavoring to tame an excessively unamiable woodchuck, and in making friends with a gentle, pretty, trustful white-footed mouse which reared her family in an empty flower pot. In order to attract my attention birds had to be as conspicuous as bobolinks or else had to perform feats such as I remember the barn swallows of my neighborhood once performed, when they assembled for the migration alongside our house and because of some freak of bewilderment swarmed in through the windows and clung helplessly to the curtains, the furniture, and even to our clothes.

Just before my fourteenth birthday my father—then a trustee of the American Museum of Natural History—started me on my rather mothlike career as a naturalist by giving me a pair of spectacles, a French pin-fire double-barreled shotgun—and lessons in stuffing birds. The spectacles literally opened a new world to me. The

mechanism of the pin-fire gun was without springs and therefore could not get out of order—an important point, as my mechanical ability was nil. The lessons in stuffing and mounting birds were given me by Mr. John G. Bell, a professional taxidermist and collector who had accompanied Audubon on his trip to the "Far West." Mr. Bell was a very interesting man, an American of the before-the-war type. He was tall, straight as an Indian, with white hair and smooth-shaven clear-cut face; a dignified figure, always in a black frock coat. He had no scientific knowledge of birds or mammals; his interest lay merely in collecting and preparing them. He taught me as much as my limitations would allow of the art of preparing specimens for scientific use and of mounting them. Some examples of my wooden methods of mounting birds are now in the American Museum: three different species of Egyptian plover, a snowy owl, and a couple of spruce grouse mounted on a shield with a passenger pigeon—the three latter killed in Maine during my college vacations.

With my spectacles, my pin-fire gun, and my clumsy industry in skinning "specimens," I passed the winter of '72–75 in Egypt and Palestine, being then fourteen years old. My collections showed nothing but enthusiasm on my part. I got no bird of any unusual scientific value. My observations were as valueless as my collections save on just one small point; and this point is of interest only as showing, not my own power of observation, but the ability of good men to fail to observe or record the seemingly self-evident.

On the Nile the only book dealing with Egyptian birds which I had with me was one by an English clergyman, a Mr. Smith, who at the end of his second volume gave

a short list of the species he had shot, with some comments on their habits but without descriptions. On my way home through Europe I secured a good book of Egyptian ornithology by a Captain Shelley. Both books enumerated and commented on several species of chats—the Old World chats, of course, which have nothing in common with our queer warbler of the same name. Two of these chats were common along the edges of the desert. One species was a boldly pied black and white bird, the other was colored above much like the desert sand, so that when it crouched it was hard to see. I found that the strikingly conspicuous chat never tried to hide, was very much on the alert, and was sure to attract attention when a long way off; whereas the chat whose upper color harmonized with its surroundings usually sought to escape observation by crouching motionless. These facts were obvious even to a dull-sighted, not particularly observant boy; they were essential features in the comparison between and in the study of the life histories of the two birds. Yet neither of the two books in my possession so much as hinted at them.

I think it was my observation of these, and a few similar facts, which prevented my yielding to the craze that fifteen or twenty years ago became an obsession with certain otherwise good men—the belief that all animals were protectively colored when in their natural surroundings. That this simply wasn't true was shown by a moment's thought of these two chats; no rational man could doubt that one was revealingly and the other concealingly colored; and each was an example of what was true in thousands of other cases. Moreover, the incident showed the only, and very mild, merit which I ever de-

veloped as a "faunal naturalist." I never grew to have keen powers of observation. But whatever I did see I saw truly, and I was fairly apt to understand what it meant. In other words, I saw what was sufficiently obvious, and in such case did not usually misinterpret what I had seen. Certainly this does not entitle me to any particular credit, but the outstanding thing is that it does entitle me to some, even although of a negative kind; for the great majority of observers seem quite unable to see, to record, or to understand facts so obvious that they leap to the eye. My two ornithologists offered a case in point as regards the chats; and I shall shortly speak of one or two other cases, as, for example, the cougar and the saddle-backed lechwi.

After returning to this country and until I was halfway through college, I continued to observe and collect in the fashion of the ordinary boy who is interested in natural history. I made copious and valueless notes. As I said above, I did not see and observe very keenly; later it interested and rather chagrined me to find out how much more C. Hart Merriam° and John Burroughs° saw when I went out with them near Washington or in the Yellowstone Park; or how much more George K. Cherrie° and Leo E. Miller° and Edmund Heller° and Edgar A. Mearns° and my own son Kermit saw in Africa and South America, on the trips I took to the Nyanza lakes and across the Brazilian hinterland.

During the years when as a boy I "collected specimens" at Oyster Bay or in the north woods, my contributions to original research were of minimum worth—they were limited to occasional records of such birds as the dominica warbler at Oyster Bay, or to seeing a duck hawk work havoc in a loose gang of night herons, or to noting the

bloodthirsty conduct of a captive mole shrew—I think I sent an account of the last incident to C. Hart Merriam. I occasionally sent to some small ornithological publication a local list of Adirondack birds or something of the sort; and then proudly kept reprinted copies of the list on my desk until they grew dog-eared and then disappeared. I lived in a region zoölogically so well known that the obvious facts had all been set forth already, and as I lacked the power to find out the things that were not obvious, my work merely paralleled the similar work of hundreds of other young collectors who had a very good time but who made no particular addition to the sum of human knowledge.

Among my boy friends who cared for ornithology was a fine and manly young fellow, Fred Osborn, the brother of Henry Fairfield Osborn. He was drowned, in his gallant youth, forty years ago; but he comes as vividly before my eyes now as if he were still alive. One cold and snowy winter I spent a day with him at his father's house at Garrison-on-the-Hudson. Numerous northern birds, which in our eyes were notable rarities, had come down with the hard weather, I spied a flock of crossbills in a pine, fired, and excitedly rushed forward. A twig caught my spectacles and snapped them I knew not where. But dim though my vision was, I could still make out the red birds lying on the snow; and to me they were treasures of such importance that I abandoned all thought of my glasses and began a nearsighted hunt for my quarry. By the time I had picked up the last crossbill I found that I had lost all trace of my glasses; my day's sport—or scientific endeavor, whatever you choose to call it—came to an abrupt end; and as a result of the lesson I never again in my life went out shooting, whether after sparrows or

elephants, without a spare pair of spectacles in my pocket. After some ranch experiences I had my spectacle cases made of steel; and it was one of these steel spectacle cases which saved my life in after years when a man shot into me in Milwaukee.°

While in Harvard I was among those who joined in forming the Nuttall Club, which I believe afterward became one of the parent sources of the American Ornithologists' Union.

The Harvard of that day was passing through a phase of biological study which was shaped by the belief that German university methods were the only ones worthy of copy, and also by the proper admiration for the younger Agassiz,° whose interest was mainly in the lower forms of marine life. Accordingly it was the accepted doctrine that a biologist—the word "naturalist" was eschewed as archaic—was to work toward the ideal of becoming a section cutter of tissue, who spent his time studying this tissue, and low marine organisms, under the microscope. Such work was excellent; but it covered a very small part of the biological field; and not only was there no encouragement for the work of the field naturalist, the faunal naturalist, but this work was positively discouraged, and was treated as of negligible value. The effect of this attitude, common at that time to all our colleges, was detrimental to one very important side of natural history research. The admirable work of the microscopist had no attraction for me, nor was I fitted for it; I grew even more interested in other forms of work than in the work of a faunal naturalist; and I abandoned all thought of making the study of my science my life interest.

But I never lost a real interest in natural history; and

I very keenly regret that at certain times I did not display this interest in more practical fashion. Thus, for the dozen years beginning with 1883, I spent much of my time on the Little Missouri, where big game was then plentiful. Most big game hunters never learn anything about the game except how to kill it; and most naturalists never observe it at all. Therefore a large amount of important and rather obvious facts remains unobserved or inaccurately observed until the species becomes extinct. What is most needed is not the ability to see what very few people can see, but to see what almost anybody can see, but nobody takes the trouble to look at. But I vaguely supposed that the obvious facts were known; and I let most of the opportunities pass by. Even so, many of my observations on the life histories of the bighorns, white goats, prongbucks, deer, and wapiti, and occasional observations on some of the other beasts, such as black-footed ferrets, were of value; indeed as regards some of the big game beasts, the accounts in "Hunting Trips of a Ranchman." "Ranch Life and the Hunting Trial," and "The Wilderness Hunter" gave a good deal of information which, as far as I know, is not to be found elsewhere.

To illustrate what I mean as "obvious" facts which nevertheless are of real value I shall instance the cougar. In the winter of 1910 I made a cougar hunt with hounds, spending about five weeks in the mountains of northwestern Colorado. At that time the cougar had been seemingly well known to hunters, settlers, naturalists, and novelists for more than a century; and yet it was actually impossible to get trustworthy testimony on such elementary points as, for instance, whether the male and female

mated permanently, or at least until the young were reared (like foxes and wolves), and whether the animal caught its prey by rambling and stalking or, as was frequently asserted, by lying in wait on the branches of a tree. The facts I saw and observed during our five weeks' hunt in the snow were obvious; they needed only the simplest powers of observation and of deduction from observation. But nobody had hitherto shown or exercised these simple powers! My narrative in the volume "Outdoor Pastimes of an American Hunter" gave the first reasonably full and trustworthy life history of the cougar as regards its most essential details—for Merriam's capital Adirondack study had dealt with the species when it was too near the vanishing point and therefore when the conditions were too abnormal for some of these essential details to be observed.

In South America I made observations of a certain value on some of the strange creatures we met, and these are to be found in the volume "Through the Brazilian Wilderness;" but the trip was primarily one of exploration. In Africa, however, we really did some good work in natural history. Many of my observations were set forth in my book "African Game Trails;" and I have always felt that the book which Edmund Heller and I jointly wrote, the "Life Histories of African Game Animals," was a serious and worth-while contribution to science. Here again, this contribution, so far as I was concerned, consisted chiefly in seeing, recording, and interpreting facts which were really obvious, but to which observers hitherto had been blind, or which they had misinterpreted partly because sportsmen seemed incapable of seeing anything except as a trophy, partly because stay-at-home system-

atists never saw anything at all except skins and skulls which enabled them to give Latin names to new "species" or "subspecies," partly because collectors had collected birds and beasts in precisely the spirit in which other collectors assembled postage stamps.

I shall give a few instances. In mid-Africa we came across a peculiar bat, with a greenish body and slate blue wings. Specimens of this bat had often been collected. But I could find no record of its really interesting habits. It was not nocturnal; it was hardly even crepuscular. It hung from the twigs of trees during the day and its activities began rather early in the afternoon. It did not fly continuously in swallow fashion, according to the usual bat custom. It behaved like a phœbe or other flycatcher. It hung from a twig until it saw an insect, then swooped down, caught the insect, and at once returned to the same or another twig—just as a phœbe or peewee or kingbird returns to its perch after a similar flight.

On the White Nile I hunted a kind of handsome river antelope, the white-withered or saddle-backed lechwi. It had been known for fifty years to trophy-seeking sportsmen, and to closet naturalists, some of whom had called it a kob and others a water buck. Its nearest kinsman was in reality the ordinary lechwi, which dwelt far off to the south, along the Zambezi. But during that half century no hunter or closet naturalist had grasped this obvious fact. I had never seen the Zambezi lechwi, but I had carefully read the account of its habits by Selous°—a real hunter-naturalist, faunal naturalist. As soon as I came across the White Nile river bucks, and observed their habits, I said to my companions that they were undoubtedly lechwis: I wrote this to Selous,° and

to another English hunter-naturalist, Migand; and even a slight examination of the heads and skins when compared with those of the other lechwi and of the kobs and water bucks proved that I was right.

A larger, but equally obvious group of facts was that connected with concealing and revealing coloration. As eminent a naturalist as Wallace,° and innumerable men of less note, had indulged in every conceivable vagary of speculative theory on the subject, largely based on supposed correlation between the habits and the shape or color patterns of big animals which, as a matter of fact, they had never seen in a state of nature. While in Africa I studied the question in the field, observing countless individuals of big beasts and birds, and comparing the results with what I had observed of the big game and the birds of North America (the result being borne out by what I later observed in South America). In a special chapter of the "Life Histories of African Game Animals," as well as in a special number of the "American Museum Bulletin," I set forth the facts thus observed and the conclusions inevitably to be deduced from them. All that I thus set forth, and all the conclusions I deduced, belonged to the obvious; but that there was need of thus setting forth the obvious was sufficiently shown by the simple fact that large numbers of persons refused to accept it even when set forth.

I do not think there is much else for me to say about my anything but important work as a naturalist. But perhaps I may say further that while my interest in natural history had added very little to my sum of achievement, it has added immeasurably to my sum of enjoyment in life.

ROOSEVELT'S WRITINGS

SELECTIONS FROM THE WRITINGS OF THEODORE ROOSEVELT

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