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A PARABLE FOR PEACEMAKERS

By ALEXANDER F. SKUTCH

HERE in this tropical valley live untold thousands of birds of several hundred distinct kinds. They dwell together in a degree of peace and harmony that is surprising when one considers their number and diversity of habits. Since a large proportion remain paired throughout the year and occupy continuously the little plot of ground in which they nest, disputes for the possession of mates and nesting-ground are far less frequent and violent than among northern birds, which in general are migratory and each spring must find mates and claim their nesting territory anew. Here predatory members of the avian world are rare; and an almost Utopian good-fellowship prevails among the local birds.

But there is one outstanding exception, one perpetual disturber of the harmony that prevails among two hundred kinds of birds. It is a small flycatcher, with dull brownish upper-plumage and a dingy yellow breast streaked with narrow dusky lines—altogether a bird neither beautiful nor distinguished in aspect, and one that would attract the eye of none but the enthusiastic bird-watcher armed with his field glasses. Early in the sunny month of February, this plainly clad little flycatcher arrives in our valley, and at once proclaims his presence by a variety of thin-toned, breezy whistles that seem to be the spontaneous outpouring of a careless, easy-going, vagabond nature. In these airy, carefree utterances, one searches in vain for some trace of the earnestness of his neighbor and relative, the yellow-breasted chipsacheery flycatcher, the depth of feeling of the brown thrush, or the retiring modesty of the blue grosbeak. They seem to be the self-revealing expression of a nature at once light-hearted and shallow, bound by no ties. Only the persistency of his repetition of the long-drawn *pee-e-e-e,* and the high-pitched, rapid *pee-de-de-de,* might lead the perspicacious student of avian nature to suspect that there lurked behind that voice a vein of stubborn pertinacity unexpected in a character so gay and breezy. Yet, if poetry flourished here amid the vast forests of southern Costa Rica, the local bards might seize upon and celebrate the voice of the striped flycatcher as the true harbinger of spring, as European poets have taken the voice of the cuckoo, and North Americans the songs of the bluebird and the robin.

Yet, to a certain section of the local bird population, I fear that the airy whistles of the striped flycatcher are anything but a message of gladness and good cheer. At this season, I fancy that I hear the yellow-breasted gray-capped flycatchers exclaiming to their mates in their thick, earnest voices, and the chipsacheeries repeating in their soft, high tones: "Confound it! So that pest is back again!"

For in March, the month of gathering clouds and the first light evening showers, the gray-caps and the chipsacheeries, together with a host of other birds of the most diverse kinds and colors, begin to fashion their nests, that they may bring forth their young in the verdant, flowery period of April and May, when flourishes an abundance of insect life that lightens the task of filling hungry nestling mouths. But not so the striped flycatchers; instead of setting about to prepare their nests, they continue to perch idly in the treetops, now and again darting forth to snatch up passing insects, and continue their thin whistles, as breezy and care-

free as ever. Not for this pair the joyous occupation of choosing, male and female together, the site of the future nest, amid the dark foliage of orange or lemon tree, or at the leafy end of some long bough overhanging the sparkling current of the river, close beside a hive of stinging wasps that will fiercely punish any heavier, less aerial creature that shakes the swinging branch. Not for the female striped flycatcher the pleasant task of building the nest, while her mate perches close by, dropping a cheery note of encouragement each time she passes him with a straw in her bill. The striped flycatchers have other ends in view; they watch and whistle while other birds build their nests.

At length, after a week or two of unhurried labor, the gray-cap, or her cousin the chipsacheery, has completed her nest, a commodious structure of dry straws and weed stems, with a high domed roof to shield the occupants from sun and rain, and a wide round doorway in the outer side. A few mornings later she lays the first of the white eggs wreathed with brownish spots, then two or three more on the following days. Now is the time for the striped flycatchers to put in their master stroke of strategy. It is not without a purpose that they have waited all these weeks in the tops of neighboring trees, appearing so blithe and innocent, yet watching every move of their intended victims, and quite aware of the precise stage of the nesting operations of the particular gray-cap or chipsacheery they have chosen as their dupe.

One fine morning, after the eggs have been laid in the domed nest, one of the striped pair ventures closer than the owners will permit. Then one of the yellow-breasted owners, as likely as not the male, darts at the intruder, who at once prudently retires. Perhaps the female yellow-breast joins in the aerial chase. The longer and hotter the pursuit, the better for the purposes of the striped flycatchers. While one of the pair decoys the owners away, the other enters the unguarded nest, takes a spotted egg in its bill, flies out and drops it to the ground. They have scored their first point in the unequal contest. Then they go off a while, insect catching and calling, and at their convenience return for the second round. The yellow-breasted owners of the nest, excited and angry now, dart fiercely at them, determined to drive away these impertinent thieves. The chase is hot, pursuer and pursued twist and double until it is difficult to follow their movements with the eye. But the defense of the yellow-breasts reveals more zeal than strategy; in their spirited sally to drive the trespassers away from their citadel, they have neglected to maintain a garrison. Again the striped birds' opportunity arrives and soon a second egg lies broken on the ground. When the last of the three or four eggs has shared the same fate, the contest ends, as it always does, in favor of the striped flycatchers. Although the battle was spectacular and noisy, with both sides voicing their characteristic cries, none of the contestants suffered personal injury greater than the loss of a few feathers.

Few birds will lay a second time in a nest that has been pillaged. So the gray-cap or chipsacheery who has lost her nest soon begins, hopeful and industrious as ever, to construct a second domed nest close by, leaving the plundered structure in possession of the invaders. These carry in a loose handful of small dry leaves—which the builders of these domed nests never themselves take in—as though they felt constrained to make at least a pretense of useful effort. Among this loose litter the female striped flycatcher lays her three grayish-brown, mottled eggs, and incubates them while her mate whistles in impudent exultation from the nearest tree-top. And these thieving birds, once established in their ill-gotten home, guard it with as much zeal, and attend with as much care and affection the eggs and young it shelters, as though they had built it with their own bills. Frequently the female may be overheard singing to herself a sweet little song of love and contentment as she sits over her eggs.

The season is now well advanced, and the dispossessed yellow-breast labors with more concentrated energy to finish her second nest. Soon it is completed, a new set of eggs deposited in it, and the patient task of incubation begun once again. Occasionally, during an interval when the second nest of its victims remains unguarded, a striped flycatcher will remove an egg from that nest; more from

habit than from malice. But in general, all goes well with the replacement nest of the yellow-breasts—provided snake and weasel and hawk and destructive boys fail to pass its way—so long as the striped flycatchers prosper in their stolen nest near by. But the eggs and young of the home-robbers are preyed upon by the same enemies that take toll of the offspring of the home-builders. If they are lost, as may happen in from a quarter to a half of all the nests occupied by the striped flycatchers, they will not again entrust their eggs to the structure that has been once pillaged. Instead, they demand another commodious domed nest of their dupes, the yellow-breasts, and will most likely throw out the new set of eggs that the female yellow-breast is incubating in her second structure near by, causing the unfortunate bird to build yet a third. One might suppose that the unhappy pair would withdraw to some more distant locality to construct their later nests, instead of placing them within such easy reach of their persecutors and despoilers. But as a rule, this is not feasible; were they to go in search of another area suitable for their breeding operations, in all likelihood they would find it already in possession of another pair of their kind, who would resent their intrusion, and who most probably had also to contend with a pair of the pestiferous stripe-breasts. So the long-suffering gray-caps and chipsacheeries linger upon their own home ground chosen many months before, and hopefully build nest after nest there, until at length, unless they have more than usual bad luck, one is successful, and their bright-eyed fledglings, safely past the most critical period of their lives, fly from its shelter, and clamor incessantly for food in the neighboring trees.

Thus, when a pair of the yellow-breasted flycatchers is selected by a pair of striped flycatchers as their victims, they not only lose their first nest but may lose their subsequent nests. Consequently, *their success depends to a large extent upon the success of their persecutors.* The safety of the second nest occupied by their eggs and nestlings is not bound up in this nest alone, but also in the earlier structure stolen from them by the striped flycatchers, and the risk of loss is doubled. Fortunately, the chipsacheery and gray-capped flycatchers are hardy, prolific species, widespread in tropical America. The striped flycatcher, like the chipsacheery (the wider-ranging of its victims), spreads over a vast territory stretching from Mexico to the northern districts of the Argentine Republic, but in most parts of its range is far less abundant than the two yellow-breasted species whose nests it occupies. And these, despite the loss of so many nests to the striped thief, are in extensive regions of the American tropics among the most abundant and familiar of birds about the dooryards of men, in pastures with scattered trees, and along the shores of rivers and lakes. They avoid the heavy, unbroken forests where conditions are not favorable for their flycatching.

II

Here Nature herself has created a situation that points as profound a moral as any parable sprung from the fecund imagination of Aesop, La Fontaine, or Iriarte. Of the main events in the struggle between the striped flycatcher and its victims I am perfectly sure, having witnessed it not fifty yards from my dwelling. And each year, over a vast territory in the warmer countries of America, this little drama of bird life is acted many thousands of times over; as it has been, no doubt, during untold centuries stretching beyond the dawn of human history. Here is a relationship between two antagonistic species so old, so firmly established, and so widespread, that it may well be worthy of our serious examination. The reader, if he is acquainted with none of the chief protagonists—if he has never heard the long-continued dawn-song from which the chipsacheery flycatcher takes its name, and has seen nothing of the devoted industry of the gray-cap as she fashions her domed nest—will have formed no prejudices in favor of one side or the other, and can the more dispassionately and unerringly draw conclusions from their strange history.

For I, after long acquaintance with these attractive birds, have become the partisan of the aggrieved party. Once, while witnessing the conflict between a pair of gray-caps and a pair of striped flycatchers for the possession of the former's nest, I longed to be able

to drop a word of advice into the ear of the defenders. "Instead of dashing foolishly in pursuit of your slippery assailants," I wanted to tell them, "keep your citadel constantly garrisoned. Take turns at warming your eggs, keep them constantly covered and the pesky little stripe-breasts will never be able to harm them."

But I fear that this would have been advice proffered in vain. In all the great family of the American flycatchers, I have not, in years of study, discovered a single species of which the male takes a turn on the eggs. For a male flycatcher to sit in the nest would be as preposterous and unconventional as for a male woodpecker or a male antbird to fail to take his full share in warming the eggs and brooding the young. Being conservative by nature, doubtless the gray-caps would rather continue to risk the loss of their nests, than to change the age-old customs of their kind; just as those who have been born and raised upon the slopes of a volcano will linger there, under the constant menace of a disastrous eruption, rather than seek a safer home in strange parts.

What, then, could the gray-capped flycatchers and the chipsacheeries do to put an end to this annually recurrent and oft-repeated outrage? Here is a problem that has sometimes amused me upon my solitary walks. They might unite against their tormentors and attempt to make an end of them in an active war of extermination. But in this it is not likely that they would be successful; for the striped flycatchers, although smaller and weaker, are sufficiently swift and agile to elude their pursuers. Or they might become disciples of the Mahatma Gandhi, wage a passive rather than an active warfare, and refuse to build nests at all, seeing that so large a proportion of them are made for the use of others. But this Gandhian policy, also, could not be wholly successful; for the two species of yellow-breasted flycatchers, although the chief victims of the striped-breasts, are by no means the only ones. The nest-thieves occupy a considerable variety of covered or closed nests, including the long, woven pouches of the oropéndolas and other members of the oriole family, the snug globular structures of fibrous and downy materials built in the tree-tops by becards, and have even been known to take possession of the nest-chamber carved by gartered trogons into the heart of a big, papery wasps' nest. It is probably in such situations that their litter of dead leaves is of service, for trogons do not line their nests with soft materials. But there is no record of the striped flycatchers' ever having made use of an open nest, such as those of thrushes, tanagers, sparrows, and the great majority of songbirds. Hence, were the yellow-breasted flycatchers to go on strike and refuse to build, the striped flycatchers would be deprived of the most important, but by no means the only, source of their nests. By such a course, the yellow-breasts would be more likely to accomplish race-suicide than the extermination of their enemies.

Or, taking the philanthropic—or should it be philornithic?—view, the chipsacheeries and gray-caps might establish schools to teach the less gifted striped flycatchers how to build their nests. But in such a high-minded endeavor, the auguries of success are not encouraging. Students of evolution have crystallized certain of their conclusions in the so-called "Law of Loss." They have discovered that when once an organism, in the course of many generations of evolutionary change, loses an organ, that organ is never recovered. If, as a result of secular changes in environment, external conditions recreate the need for the lost part, it is not reconstituted in its primitive form, but at best a substitute is gradually developed. Thus plants of a number of kinds, at home in arid regions, have little by little quite lost their leaves. When one of these plants again finds itself growing under humid conditions where the possession of broadly expanded leaves would be an advantage, it cannot recover its lost foliage in the original form, but at best, during the course of many generations, develops substitutes of quite distinct origin, such as flatly expanded stems or leaf-stalks. What applies to organs probably holds equally true of instincts, such as that of nest-building. As well attempt to help a snake sprout forth again the legs enjoyed by its remote ancestors, as to teach a striped flycatcher to fashion a nest such as its forefathers once built.

All things considered, it is probable that the best course the victims of the striped flycatchers could take is that which they already follow. Indeed, it is not likely that the philosophic naturalist, in his comfortable armchair or on his musing evening walks, can improve upon the ways Nature has developed as the result of countless millions of trials covering many thousands of years. Yet I make bold to suggest an improvement, in one small point, on the course actually followed by the yellow-breasted flycatchers: that instead of making a nest in the vain hope of using it themselves and laying eggs only to have them thrown away, each pair of yellow-breasts, at the outset of the breeding season, build a nest especially for the pair of striped flycatchers that has attached itself to them, and when it is completed, lay no eggs there, but respectfully invite their persecutors to move in and have joy of it. Then, chirping praises of their own philornithy in providing their poor relations with the means to perpetuate their kind, they can go ahead and build another for themselves, with better prospects of remaining in possession. But let them fashion the nest intended for the striped flycatchers with all the care they bestow upon that destined for their own offspring; for if the first is flimsily built and collapses in a rainstorm, the tenants will, as I once saw, abandon it, and dispossess the yellow-breasts of their more sturdily built second nest. And let the gray-caps and chipsacheeries wish success to those for whom they have built; although they may not love those clamorous, improvident creatures, they have every reason to wish them good fortune, knowing full well that any mishap that befalls the striped-breasts' nests will be also their own misfortune. For the prosperity of the highly gifted yellow-breasted flycatchers is linked with the welfare of the deficient striped-breasts.

III

Our study of a certain peculiar situation existing among the birds of tropical America has led to the quite unexpected conclusion that the best course certain persecuted species can follow is, if not to love, at least to wish well to a second species as a result of whose deficiencies they are grievously annoyed. Nature herself, Nature "red in tooth and claw," has taught, in this instance at least, a rule of conduct closely approximating some of the doctrines of Christ often looked upon as fantastically idealistic and quite inapplicable to conditions as they actually exist in this world of conflict and brute force. To love their enemies, to turn the other cheek in the figurative sense, is the course of action which will bring the yellow-breasted flycatchers the maximum of success in their endeavor to reproduce their kind, with the least amount of annoyance. And this is, in effect, the course they actually follow, with cries of wrath and unchristian complaints, no doubt, yet with no great resistance. I have never known a yellow-breasted flycatcher to try to settle accounts with the despoiler of its nest by vengefully throwing out the intruder's eggs—an act which, as we have seen, would only redound to its own further loss.

One lesson more may be drawn from this strange situation. We commonly assume that the strongest, the most perfectly equipped species, will be most successful in the struggle for existence. But this is by no means universally true. Some organisms are eminently successful by virtue of their very weaknesses. The striped flycatchers, with their grave deficiencies of instinct, lord it over the obviously better equipped yellow-breasted flycatchers, which to our eyes are a "nobler" species. Seeds of a vine and a great tree germinate side by side in the dim light of the forest floor. The light-starved tree seedling grows with extreme slowness; it must form a self-supporting trunk as it increases in stature, and can never mature and fructify unless one of the giant trees above fall and make an opening in the high canopy where it can spread its ample limbs and enjoy the full sunlight. But there will be many competitors for this gap when at length it occurs; and the seedling's chances of ultimate success are exceedingly slender. But the vine, which will never be able to hold itself erect, twines slowly upward from limb to limb and from tree to tree, until at last it spreads a tangled maze over the loftiest of them all, and displays its brilliant blossoms over the roof of the forest. Its very lack of a self-supporting stem contributes to its suc-

cess; the necessity to form one, to complete itself, causes the failure of the seedling tree.

IV

The problem of the striped flycatcher is not confined to the bird world alone; it is of far broader significance. Striped flycatchers we have always with us. In human society they are the underprivileged, the disinherited, the inept. But the advantage of considering the problem as it occurs among birds is that we can do so dispassionately, and so reach truer conclusions. Human problems are so bound up with our fears, hopes, and prejudices that only with difficulty can we give them the detached, objective consideration essential for reaching solid conclusions about our social behavior.

In the tropical valley where I dwell, the welfare of two highly endowed species of birds is intimately dependent upon that of a third species with a conspicuous deficiency which—without justification, as we see it—makes a claim upon their superior endowments. The security of their homes and families hangs upon the safety of the homes wrested from them by their poor relations. The happiness of some of the noblest birds in the valley is linked with that of one which, from the point of view of the human moralist, is the most ignoble of them all.

Is it otherwise in human communities? I think not. In a hundred ways, some direct, some subtle and tortuous, the welfare and happiness of the ablest and most gifted members of a society are dependent upon that of the poorest, the meanest, the most defective—the striped flycatchers among us. The diseases that breed in the slums and the shacks of the indigent find their victims at length in the comfortable homes of the prosperous. The vices which lurk there creep into the well-ordered families of the substantial citizens. The thieves created by idleness and destitution take toll of the goods of the well-accommodated. If the underprivileged class is sufficiently numerous, then the political and economic systems of the country are disordered, the entire moral atmosphere polluted. Longer-suffering than their feathered prototypes, restrained by law, custom, and the whole ponderous superstructure of the social system, the human striped flycatchers do not assert their fundamental needs with such salutary regularity. But if their deficiencies become too acute, their sufferings too dire, they rise up with energy and wrath that shake the whole social order to its foundations and strike down the lords of the land.

But in ways still more subtle and immaterial, our happiness is influenced by even the least of the creatures around us. Sensitive persons are peculiarly affected by the proximity of suffering and distress. The sight of a crippled beggar, a mistreated child, a fly-tortured horse, a broken-winged bird, or even a mutilated butterfly, casts its shadow of melancholy, large or small, over the sunlit fields of the fairest morning. Those who know how to live well try to surround themselves with creatures in good health and fine spirits. The raw-boned horse and the woebegone dog are not found in the possession of sensitive people.

The psychology of happiness has never been fully analyzed. How is it that great catastrophes, such as wars, plagues, and earthquakes, throw a cloud of unhappiness, proportioned to their magnitude, over persons far removed from actual contact with them, hardly affected even by their indirect consequences? By what mystic bonds of sympathy, what obscure telepathy of suffering, does this action at a distance occur? Perhaps, in some fashion we fail to understand, all suffering, whether of man or other living creatures, no matter how remote, exerts its proportioned influence upon our spirits and prevents our happiness from attaining its fullest measure. Perhaps none will ever enjoy full, unruffled beatitude until—O, when?—misery and pain quite vanish from the earth.

In smaller spheres of action, the dependence of our well-being upon that of the creatures around us is becoming increasingly evident to thoughtful men. The farmer who applies the doctrine of "cure or kill" to his suffering domestic animals has taken the first step in the practical application of this philosophy. Only savage, insensitive natures can endure to be surrounded by maimed, suffering, or mistreated animals. The same applies with added force to our own kind. The degree of civilization of a community or a nation may be gauged by its effort to educate the underprivileged, that they may create for themselves the things they need

for the completion of their lives, for their happiness. In all enlightened countries, the congenitally defective and inept—those true striped flycatchers that can never be taught to build their own nests—are supported by public charity or kept in appropriate institutions. These benefactions in favor of the underprivileged are a huge drain upon the resources of the community; but wise administrators and thoughtful citizens do not doubt the wisdom of making the sacrifice, just as the yellow-breasted flycatchers have learned, under Nature's wise tutelage, to give up their nests to the striped-breasts without too much resistance and with no revengeful reprisals. Peace and harmony are bought only at the expense of giving the unendowed their vital needs or by exterminating them. A few modern states, unshackled by tradition or by compassion, have attempted the eradication of their striped-breast class. The wisdom and the practicability of this policy remain to be proved.

V

Logically, it requires but a short step to apply to the family of nations the parable that points so plain a lesson in situations where selfishness and prejudice do not blind us to its truth. Yet in practice it is a step so long that only a few of the most far-sighted of statesmen have been able to take it. From the example of Nature, as from civic experience, we have learned that where a striped-breast class exists, peace and security can be attained by either of two methods: by its extirpation or by yielding to its necessities with the best grace we are capable of assuming. The rule still holds when we turn from birds and men as individuals to those aggregations of men called nations.

An underprivileged nation is one poor in natural resources, or with insufficient territory for its population, or with position and empire inferior to that which the ability of its people entitle it to hold. Add to these that most dangerous class of all: nations intellectually or temperamentally unfitted for self-government. All such countries must sooner or later come into armed conflict with their better endowed neighbors. Perhaps, now that the days of dynastic wars are gone, and the world has ceased to be a chessboard over which rival princes play for fiefs and vassals, it would not be far from truth to state that only such countries fight with their neighbors. For like the striped flycatcher, like the underprivileged classes in the social structure, no nation will long rest quiet without the things it needs for continued existence. It will not succumb without a death-struggle.

When a population of birds, or a community of men, has learned that the welfare and stability of the group can best be maintained by submitting to sacrifices in behalf of the underprivileged and handicapped individuals, it appears to follow that the general health of the family of nations can best be secured by a like policy. Those countries on the west coast of South America whose territory extends across the Andes possess large areas with no natural outlet save by way of the Amazon River, flowing for two thousand miles through territory undisputedly Brazilian. Years ago, Brazil declared the great river open to international navigation, when she might have kept it closed with lucrative tariffs, and as a result the largest country in South America lives in unruffled amity with her neighbors to the west. The great nation of Poland was, in a sense, in much the same situation as the vast but thinly populated Oriente of Peru; it could obtain access to the sea and free international commerce only through foreign territory. The "Polish Corridor," so important to the nation it served, without doubt caused inconvenience to the Germans whose territorial continuity it severed. Less liberal than Brazil, Germany would not abide this inevitable annoyance; and Poland's outlet to the oceans became one of the causes leading to universal conflict.

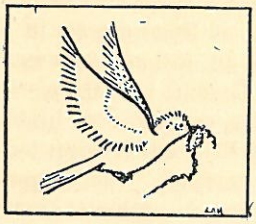
Peace will reign only when nations learn to make sacrifices to preserve it, to abide with good-humored patience inconveniences which arise from unavoidable international difficulties, and to feel an obligation toward neighboring countries less fortunate than themselves—in short, when they learn to act generously instead of selfishly. Alas! it seems that nations must ever be less noble than many of the men who compose them. Individuals have not infrequently been known to perform acts of spontaneous generosity; nations, almost never. Individuals have times without number made sacrifices—

even the highest sacrifice—for the public good. When has a nation spontaneously made a genuine sacrifice for the good of mankind? National honor is far inferior to the best individual honor, so-called "national honor" being a species of arrogant, swaggering pride, rather than a scrupulous care in the performance of obligations. No prudent man would care to do business with an individual or firm that could produce no better record of the fulfillment of contracts than the majority of nations have shown throughout history.

It is as imprudent for a country of great wealth, culture, and resources to allow itself to be surrounded by rude, impoverished neighbors, as for a rich man to live among starving paupers. The rich man, if wise and farsighted, will increase his security, and probably also his wealth, by helping his neighbors to earn an adequate living. But there may come times when he is called upon to give them bread to protect himself.

But with certain nations, diseased by greed or intoxicated with delusions of their own grandeur, no degree of generosity, no amount of graceful yielding, can bring peace and conciliation. Such countries no longer struggle for the means of existence; they are content only with domination. What nation could have yielded to the demands of the Persia of Darius, the Macedonia of Alexander, or the France of Napoleon, and continued to exist? Carthage and Rome, as two states whose pride and ambition had no bounds, were well equipped to understand each other. Their statesmen knew that conciliation was impossible and no peace between them could be lasting, because neither could brook any limit to its power. It is as though the striped flycatchers, not content with the single nest they must have or fail to reproduce their kind, believed that their noble qualities entitled them to every nest the yellow-breasted flycatchers could build; then for the yellow-breasts there would be no middle course between destroying the striped flycatchers and being destroyed by them.

ALEXANDER F. SKUTCH—NATURALIST



DR. SKUTCH was born in Baltimore, Maryland, in 1904. His formal education was obtained in Baltimore, first in private schools and then at Johns Hopkins where he received his doctorate in botany in 1928. His own story follows:

During my undergraduate years, I spent the summers on Mt. Desert Island, Maine, studying the northern plant-life, especially that of the seashore. During the summer of 1926, I enjoyed my first glimpse of the tropics, on a botanical expedition to the island of Jamaica. Here we stayed for six weeks in the Blue Mountains. After the return of the party, I settled down for six weeks more on a banana plantation to make a study of the anatomy of the banana leaf for the United Fruit Company—this became my doctor's dissertation.

In 1928 I went to Almirante in western Panama on a fellowship from Hopkins to continue my studies of the banana at the research station the United Fruit Company then maintained there. In 1930 I continued these studies at Tela, Honduras. Upon these visits to Central America, I became deeply interested in the bird-life. I found that the birds of this region had all been classified, but exceedingly little was known about how they lived. I resolved to dedicate myself to this study. In 1932 I spent half a year on a banana plantation on the border between Guatemala and Honduras, making an independent study of the birds. I spent all the following year studying the birds of the Guatemalan highlands at elevations ranging from 7,000 to 10,000 feet and here I also made a collection of the plants. This led to a commission from the Arnold Arboretum of Harvard University to collect for them during the following year in the Guatemalan highlands.

In 1935 I came to Costa Rica, with plans to combine my studies of the birds with botanical collecting as a means of support. Hearing much about the Valley of El General, I resolved to go there. I found a pioneer community, with unspoiled forests on the very outskirts of the principal village. The local *Jefe Político* was most helpful; through him I acquired a cabin with a thatched roof in Rivas, where I dwelt for a year and a half—thrice the length of my intended visit. Later I spent two more seasons in natural history work in other parts of the valley.

At the beginning of 1940, I accepted the post of curator of the herbarium in the Museo Nacional in San José, but resigned after six months to go to Peru, Ecuador, and Colombia on a rubber survey party for the U. S. Department of Agriculture.

Having come to look upon the Valley of El General as home, I returned in 1941 and bought a farm of fifty hectares (about 125 acres), so newly carved from the forest that the pastures are even now littered with logs and stumps. Here I have been living since then, doing subsistence farming—keeping sufficient horses and cattle for the work of the farm. All the time the farm work allows—a good deal in the wet season—I devote to studying the wild-life and to writing.