

On one of the drifts that contained thirty-one dead cattle besides the bodies of two hundred and fifteen birds of various kinds, there stood a solitary Scarlet Ibis. Like a garnet in the sands, or a rosy promise of the morning sun, it stood, gracefully poised above the terrible ruin—an encouragement, an inspiration, an unfailling hope—not as the rainbow suggesting the possibility of another destructive force, but as an animated symbol that life is immortal.

*Houston, Texas, December 28, 1916.*

## BIRDS OF THE HUMID COAST

By FLORENCE MERRIAM BAILEY

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### III. THE CENTER OF A COMPRESSED NESTING AREA

There was so little cleared land that in a radius of fifty rods, including a few cleared acres and half lumbered woods, there was a compressed nesting area including a large variety of species. So well tenanted were the carpenter's acres that we could study ornithology indoors. Through the open windows the cheerful song of the California Purple Finch was sometimes heard at breakfast, a loud rapid round that added brightness and vivacity to the general medley of Sparrows, Vireos, Warblers, Wrens, and Robins, but was too bright and vivacious to accord with the sublimated songs of the Olive-sided Flycatchers, Nuttall Sparrows, and Varied Thrushes. While the round of the Purple Finch was occasionally heard, the song that came in through the windows from daybreak until dark was that of the Russet-backed Thrush, a song that, while it lacks the rare spirituality and deep serenity of that of the Hermit Thrushes, is so gentle, sweet, and musical that it seems fitted to harmonize all discords, avian or human. In the dusky margins of the days about the middle of June the voices of a family of Screech Owls were added to those of the song birds heard through the open windows.

From the sitting-room window we looked out on a charred spruce stub full of big holes dug out by the Pileated Woodpecker, and one day when I was away, one pounded there for twenty minutes, as the carpenter's wife reported. Not long after, I was called excitedly from my room with the good news, "He's there now!" And there he was, great Cock-of-the-Woods, second only to the still rarer Ivory-billed, with large black body, glowing red crest, and white neck stripe; lordly bird, the unusual sight of whom thrills the bird lover in heavily wooded regions from Maine to Oregon, making himself at home just outside our sitting room window! As he worked, someone coming up the trail startled him and, alas, away he flew out of sight. Several times later I heard the stirring *chuck, chuck*, in the woods, and one morning the sound of muffled blows in dead wood was followed by the *chuck-ah, chuck-chuck-chuck*, and as I crept silently down a trail in the dense protecting shadow of the timber the dull pounding stopped me and through an opening in the trees I discovered one of the splendid birds on a finger of broken branch in a niche, sunning and pluming itself. As if for an audience it spread one wing wide in the sun, tipping it

up till the handsome sulphury white undercoverts showed, pecked at the bark, gave a low rapid *chuck, chuck-ah, chuck*, and then climbed up to peck at another section of the gray trunk spotted with round holes till, though I made no sound, craning its neck far out sideways as if I had been discovered, it flew off. Another day the loud rapping came from an adjoining stub and I found a Pileated working in earnest. Braicing with its tail and hooking its strong left foot into the bark in front or to one side of it, the Cock-of-the-Woods would crack off a slab masterfully with a single blow, but it would also probe carefully and turn its head and place its chisel with delicacy and skill. Once, after drilling a sliver of bark loose, it put its head under it to explore and then, having located its quarry tore off the bark and went to excavating. When tired of work it climbed to the top of the stub where it stood silhouetted against the gray sky, then again stretching its wing and preening its feathers. When the dogs barked it only turned its head, but when a Flicker passed over, raised its wings and flew away.

The Pileated did not call at the house again, and our next visitor—no big black Woodpecker but a tiny fluff of greenish feathers this time—a young Golden-crowned Kinglet, actually flew in at the open door. Back and forth the poor frightened little creature flew above the level of the open doors and windows lighting now on the boarded ceiling, now on the clothes-line stretched across the room, where it showed its green body, wing bars and short but deeply notched tail. At last it flew against a window with such a shock that on rebounding it lit on a sock on the line, clinging to it half stunned, with bill open. By going up softly and talking to it gently, I slowly closed my hand over it. Yes, there were not only the characteristic Kinglet wing bars and yellow-pencilled wing edgings, but the wide white superciliary and the suggested crown markings of the young golden. As it squirmed in my hand I caught the dark brown of its iris. While I was studying it, poor little Goldilocks, used to tragedies, and also to practical cash valuations, had been excitedly running about the room exclaiming—"I wouldn't kill it, I wouldn't kill it, for, for five dollars!—it's so sweet," and when I took it to the open door and she saw it dart away across the garden and vanish in a little spruce, her sensitive face broke into smiles and she danced about joyfully, ready once more to go singing about the house like a happy bird.

Many of the birds whose voices came in through the open windows could be seen without going farther afield than the front porch. Western Robins were as much at home as are their eastern brothers about lawns and gardens. One would sit in the top of a tall hemlock or Sitka spruce and sing the song heard from the dooryard lilac in the east; but wandering thoughts of home were suddenly dissipated by sight of a Rufous Hummingbird flashing its gorget in an adjoining tree. The Robins' songs began to decrease the second week in June, when the birds were often seen flying swiftly across the garden with salmonberries in their bills, and the last week in June they were found feeding spotted young on the board walk, a very convenient place for parents to see the brood they were trying to feed.

While the Robins picked the wild salmonberries growing along the edges of the woods, the Rufous Hummingbirds buzzed around the logan-berry blossoms in the garden and a green-backed female or young was also seen whirling its wings before a fuchsia. While the Hummingbirds went and came, darting into the garden, buzzing about the flowers for a few moments and darting off

again, the lovely Russet-backed Thrushes were almost always within sight or hearing, hunting for worms in the garden or along the edge of the bracken bordering it, sitting on the fence or the logs that lay half hidden by the ferns. They even perched on the tip of a large pevee used to warp over the great logs that seemed to promise an inexhaustible supply of fire wood, much needed in that north country mornings and evenings even in June. One sat on the pevee fluffed out, looking around for a long time one day, its saffron throat and the lightly spotted upper part of its breast suggesting the Veery Thrush, whose calls and song seem nearest to its own.

As the Thrushes were almost as tame as Robins, I had ample opportunity to study their calls and songs. The call notes, varied and striking, were at times soft, rich, and liquid—as *hoipe*, *whoipe*, or *whoite*, the *whoite* occasionally having the inflection of a query. At other times the notes were startlingly loud and whistled, as a peremptory *hoy'-it*, sounding as was suggested "as if some one was calling a dog." A common alarm note was a single call, but an alarm note sometimes given for a cat was a low whistled double note, *whee-ee*. The bleat, the counterpart of that of the Veery, I never heard used in alarm, but it was occasionally interlarded with the song, as *whee-hiter'r'r*, *whee-hiter'r'r*. It was also given by itself, with emotion, apparently being answered by another bleat. The split Thrush round that suggested the Veery song was generally precluded by the call notes and may be brought to mind by the syllables, *hoipe*, *whoipe*, *tra-la-la-la-ree*, the second and last syllables given with rising inflection. Sometimes the split round was given softly without prelude. As the birds sang all day long, their songs often lacked inspiration, and in such cases the preliminary call notes were doubled, giving an amusingly perfunctory effect, as if the bird were working himself up to his song—*hoipe*, *hoipe*, *whoipe*, *whoipe*, *tra-la-la-la-ree*. Another phrasing of the song with quite different rhythm was *what*, *what*, *ha-whee'-ah*, *ha-whee'-ah*.

When a Thrush was sitting on a stub in front of the house it would sometimes raise its tail and flip its wings like a Robin, as if with the arrested intention of moving on, and on rare occasions one would raise and lower its tail like a Hermit Thrush, though with a quick rather than a deliberate motion. But in the main, the Russets seemed peculiarly quiet Thrushes, with little motion of wings or tail.

The last week in June a pair were seen going about the garden collecting green worms and carrying them in their bills to a thick clump of young spruce and hemlock, only two or three rods from the front porch. The trees were so dense that it was only after long search that a chink was finally discovered by the carpenter's wife through which the nest could be dimly seen about twelve feet from the ground, a bulky mass with moss on the outside, supported by a branch. The nest tree was in plain view from the porch and as we sat there with Goldilocks playing near, and the good woman told me about crossing the plains, and about a Burrowing Owl that had lived in their prairie dugout, and a pet Sandhill Crane that had run races with her when she was a girl, we watched the old Thrushes go back and forth to the nest. Used to seeing us about the yard, they had little fear, and when I went and stood close under their evergreen, came in at the back of it. As they made their way up to the nest I saw pink salmonberries in their bills and heard the bee-like buzz of greeting from the young. Between the visits of the parents the young could be heard moving around and one sturdy little fellow fluttered up and stood on the

edge of the nest almost ready to fly—no wonder the father sang with a deep note of home happiness! But the next day the nest was empty, the restless youngsters had flown, and remembering a bunch of brown feathers found on the walk one morning, I feared that anxious days were in store for the fond parents.

While the Thrushes were familiar companions, other feathered neighbors were seen only in passing. An Audubon Warbler stopped to sing near the house the latter part of June, as if its family cares were over, while a pair of Barn Swallows that were discovered sitting around were perhaps prospecting for another year. A Bald Eagle seen by the fisherman flying over the house the last of June was probably on its way to or from its fishing grounds. In the forest thicket a stone's throw from the house, fleeting glimpses of the bob tail of a Western Winter Wren and outbursts of wrennish song from dark impenetrable interiors had put me into a very exasperated state of mind; but one morning when the jolly little jumble was heard, from the doorstep I looked up to discover a mite of a bird on the tip of a hundred foot stub across the clearing—a fly on a mast! Through the glass I could make out his plump little form and bob tail and see him raise his head and move his throat as he sang his rapid round. There he was at last, no wraith, but a flesh and blood wrenkin.

From the front porch the familiar song of the Wren-Tit was occasionally heard coming from the burned over, chaparral covered, mountain slope above, a slope that from our distance below looked an open easy climb, but was so densely covered with high salal, brake, and salmonberry bushes that one could just about see a man's head above the thicket—quite the kind of place a Wren-Tit likes. The hunter of the family was watching the slope carefully now as he was planning a bear hunt in the mountains and a she bear and two cubs had been seen there not many months before. It would do no good to watch the slope for my bird, much as I longed to see it again, but its familiar strain, *keep, keep, keep-it, keep-it, keep-it*, reiterated with variations, was always listened to with keen delight, recalling as it did charmed days in beautiful California. The last of June, only a few days before I left for the Cascades, on going to the front door after breakfast I was surprised and delighted to hear the familiar *keep-keep-keep'r'r'r'r'r'r* of *Chamaea* close at hand, and a moment later its purring note came from some brush only two or three rods away, followed quickly by the appearance of the delectable brown Wren-like form twitching its long tail from side to side so vehemently that it almost tipped over. Here it was at last at my very door!

That same week a Junco that I had been looking for ever since my arrival, probably also wandering after the breeding season, came to my door, staying on a log long enough for me to see its black head, dull brown back and pinkish sides. Suggestive trills and aggravating flashes of white tail feathers were finally followed by the sight of a pair of the birds busied among the brush and logs of an old burn. One more bird which I had vainly tried to place in the heavy timber came to the dooryard just before I left—the lovely little Siskin from the mountains—lighting on top of a low hemlock and letting me walk around close under him so that I could see his brown streaked body as he sang his song, suggesting that of the Goldfinch with an added tang that makes it sweet wild music to the ear of the mountain lover.

From the front piazza the morning and evening concerts could be enjoyed to the full. And in the medley by listening closely the indescribable split note

of the Varied Thrush, rarest of singers, could be distinguished coming from the top of the ridge above.

The back piazza that afforded a beautiful view of the blue Bay framed between conifers, also gave glimpses of some of the forest birds attracted to the dense young spruces back of the house. The Chestnut-backed Chickadee was one of the most interesting in its protective coloration, the dark flat brown of its back looking like applied cloth in the dark forest where, while it did not match anything, the patch seemed to detach itself from the form of the bird, toning into the somber forest background as effectively as did the dark browns of the northwest coast Wrens and Song Sparrows. When a family of Chickadee young were seen trailing after their parents on the edge of the clearing I noted that the white patch on the side of the head was clear and keen enough to help the brood keep together. But in spite of that light touch the Chestnut-backs seemed peculiarly characteristic birds of the dark Humid Coast forests, and in the rainy season, nothing daunted, they flitted about the dripping branches of the Sitka spruces singing their cheerful Chickadee ditty—*Swee-ah-zee'-zee-zee*, *Swee'-ah-swee-see'*.

Around the house and in the low greenery on the edge of the clearings in early June I was continually hearing or meeting with the Golden Pileolated Warbler—charming little creature with its jet black cap, vivid golden dress, and pretty ways—peering out at me from between the green leaves and then with a flat *chip* dashing out across the opening like a flash of bright sunshine. Often when the bird was invisible I recognized its loud rapid accelerated and possibly rather harsh *chat-ah-chat-ah-chat-ah-chat-ah-cha*, at times preluded by a fine liquid run that was delightfully musical.

In the young Sitka spruces around the house and on the edge of the clearing, a family of Golden-crowned Kinglets were often seen fluttering up under the long drooping terminal sprays of a spruce or flitting about among the dark branches, busy little mortals, appearing only to disappear, before I could focus my glass on them. Once as one of them fell through the air I caught a glimpse of the golden crown of the adult and again caught the white line over the eye of a young one, perhaps the very one that entered our open door that afternoon.

Another day when one I took to be a Kinglet parent had crossed the trail to a low tree and wished its family to follow, it gave a small double note that I had not heard before and the whole band went obediently trooping across the open to join it. On a warm afternoon the little family was found in the shelter of a sunny grove of low trees on the edge of the garden, the grove where the Screech Owl family afterwards slept in the day time, and where blue sky could be seen through the chinks, high ferns making an attractive enclosure. They were a happy busy little family going about full of small talk in high-pitched notes such as *ziz-iz-iz-iz-iz* and *zeegle-zeek*, tiny dainty creatures, the young ones still with fuzzy heads. The characteristic thin *ti-ti*, *tititi*, was often heard in the tall conifers, and late one afternoon when coming up the board walk I found a family apparently going to roost for the night in the top of a big Sitka spruce so high overhead that it made my neck ache to watch them as they flitted about with a flip of the wing and finally disappeared in the deep shadows of the thick branches.

On the edge of the vegetable garden the second week in June when we were still getting drizzling foggy days, a family of the musical Seattle Wrens, with long barred tail and white line over the eye were going about together,

the young full grown but dingy breasted. When I spoke to the carpenter's wife about their being out so early she rejoined, "They're an early layin' bird," which would apply equally to the Kinglets and Chickadees, all of whom were seen with families early in June.

#### IV. UP THE OLD WOOD ROAD

An old wood road circled around from our clearing up along the foot of the mountains through half cut timber to the next clearing where a New England family were making a home, and from this road through the half open woods many birds were to be seen. In the brushy edge of the timber where ferns stood above my head, early in June I happened along at the rare moment when a Golden Pileolated, who generally sings hidden away in the greenery was impelled to proclaim his joy in the open, and oblivious of all passers-by, oblivious of all but the song in his heart, beginning softly on top of a high stub above me, flew singing more and more rapturously, more ecstatically from one lofty perch to another.

As the old overgrown road swung around a corner before entering the woods, long arms of low Sitka spruces reaching to the light held out detaining fingers. Beyond, a luxuriant growth of salmonberry bushes leaned out over the road, their long vine-like arms tossed so high that only winged birds or children riding by could pick their luscious berries, berries curiously enough both salmon yellow and raspberry pink, with a delicious flavor all their own. On the other side of the road stood tall beautiful spikes of bright pink Canterbury bells, or fox gloves as the people of the country call them, at that time the dominant flowers of the clearings.

Inside the woods little disturbed by man, as its overgrown road testified, the latter part of June I heard a second happy songster, this time a brown Winter Wren with his inch of a tail tipped up at his back, singing on the mossy top of an upturned root. A companion Wren was clambering around over mossy branches close by, and her mate's song was of every day home happiness, but even so he sang so hard that his bill looked as if set wide open. Little Goldilocks and her two white dogs were running about and one of the Wrens looking at the dogs gave a bob and disappeared. Whenever I passed that way afterwards, I looked for them and sometimes caught glimpses of them or heard snatches of song up the woods; but in any case it was pleasant to remember that they had been there, brown sprites of the dark shadowed forest. This dense Humid Coast country is the chosen home of these cheery spirited little birds whom no shadows have power to depress, and during the month of my stay I located what I took to be five different pairs within the radius of fifty rods which included most of my working beat.

Along the woods road the dominant bird was the handsome crested Jay with its smoky head and neck, turquoise underparts and dark blue wings and tail. Its loud imperious *check-ek-ek-ek-ek* varied by a hoarse *cha-cha-cha-cha* often greeted me on entering the woods, and one would sometimes sail down on outspread wings from tree to tree with a quick *whecker-whecker-whecker*, or perhaps give the crow-like 'cork-pulling' *ker'r'r'r'r'r'r*. When one wanted to get to the top of a tree, instead of flying straight up as many birds do, he would climb the winding stairs, a branch at a time; and one that I watched started near the top of a tall conifer and ran rapidly down his stair, at its foot apparently giving a bite of food to his mate.

Like other Jays the Coast Jays are unpopular with their neighbors and one morning I saw a pair of Black-headed Grosbeaks chase one up and down the winding stair of a dead tree, the irate female getting so close to him that it looked as if she pecked him on the back. In the neighborhood in which the Grosbeaks seemed so much at home, one was seen on a mossy log by the brook that ran through the woods, shaking its wings dry, and one on a delicate huckleberry bush leaning over to pick off the red berries. They were seen a great deal in the spruces on the edges of the clearings and also well up in the high trees in the woods, and as they flew from tree to tree the white patch at the base of the wing quills and also the white tail coverts showed to advantage.

The Grosbeaks were so often seen in the same trees with the Western Tanagers, who bathed from the same brook, that the songs of the two had to be distinguished. The Tanager's rough-edged song is totally different from the Grosbeak's best, most roundly modulated one, and when the Tanager's call—*pitic* or *piterick*—is incorporated in his song as is often the case, it can be placed on the instant. When this is left out, however, the disjointed song with its pendulum rhythm closely resembling that of the Scarlet Tanager, may be confused with the poorest, roughest song of the Grosbeak.

The red of the Tanager's head in the timber makes a good recognition mark, as I realized when catching a glint of red rods away through the woods; and on the outer edge of a spruce the yellow of his body gives a keen note of color, surprisingly pleasing against its background of somber green. The yellow shows as he flies up from one branch to another—one that I saw flew up and fluttered under a branch like a Kinglet—but when he sits still with wings dropped the uncovered yellow of the back, as I was surprised to discover, loses its color, becoming just a light oblong patch quite detached from the form of the bird. The back of the female, an exquisitely harmonized bird with her greens and yellows, fades out of sight against a sunlit hemlock.

Besides these Jays, Grosbeaks, and Tanagers, birds of striking voice and plumage, the woods held the thin-voiced Gairdner Woodpecker, noticeably blacker than the Downy, and the demure dull-colored Western Wood Pewee and Western Flycatcher, the grayish Pewee perching on a dead hemlock giving its gentle *tu-weer* and the Flycatcher with its dull yellow breast moving about in the greenery giving its soft *se-wick*. The small, characteristic beady note of the California Brown Creeper was detected, though the bird itself was not discovered.

When watching the birds in the woods going and coming about their various matters, I often discovered a Rufous Hummingbird on a high watch tower, the very tip of a sliver projecting above a high stub, the animated brown marble pointed with a needle swaying from side to side, the brown tail sometimes jetting in unison while the keen pin head eyes kept a vigilant outlook. Let an insect pass and out would dart the Hummer. Sometimes when watching he sat silent, sometimes he sang a squeaky little *kick-ick-ick-ick-ah*. As he sat on his watch tower a puff of wind once blew up one of the elongated ends of his burnished fiery gorget, showing its pattern. When the midget faced me for a moment the center of his flaming gorget looked almost black. The causes of some of his actions had to be guessed at. When hovering over a moist gummy spot on a spruce branch I imagined that he was looking for insects in the gum; and when, after acting as if about to alight on the bristly terminal spray of a Sitka spruce, he flew off instead, I suspected that the prickly needles had

seemed too sharp a perch for even his tiny feet. When the fireweed bloomed the Hummingbirds were seen around that as they were around the handsome pink spikes of Canterbury bells. One that I watched feeding from a bell first put his bill into the lip of the flower, standing in air with feet held close to his body, wings whirring, and tail at an angle; then, failing to reach the insect-fraught honey, probed deeper and deeper till he had climbed bodily up into the pink tube. But this Troglodytean method was apparently distasteful to the little Ariel, and quickly withdrawing he fell to probing the bases of the bells from the outside.

A stub watch tower vacated by a Hummer was taken possession of by a magenta headed California Purple Finch, so popular are bare outlooks among the dense evergreens of the Humid Coast. A dull streaked female, presumably his mate, was also discovered near by. At another time looking across the partly shaded brook a gleam of magenta was detected and enjoyed as every gleam of color is in that land of dark shadows.

#### V. BY THE SIGN OF THE SPRUCE STUB

As the wood road came out into the clearing, a white tent on a high frame foundation on investigation proved an improvised chicken house. What had been a field of bracken two years before when the New England family settled there, was now hen yards, flower and vegetable gardens, a substantial conquest indeed, for in clearing the land the long roots of the bracken have to be laboriously dug up, and as the man of the house was a nightwatchman across the bay, the main part of the work had devolved upon his resolute wife, who had followed her children's children across the continent to make this new home. With quiet pride she showed her New England garden in which, under the shadow of a giant spruce stub, bloomed pansies, sweet peas, sweet Williams, and many a familiar home flower. A well stocked vegetable garden added proof of what an enthusiastic woman can do with nature in her Oregon stronghold.

Though the acres surrounding the house had been wrested from nature the stub of the old giant spruce on the edge of the garden still dominated the landscape. It was apparently the largest in the neighborhood, measuring thirty-nine feet eight inches in girth, four feet above the ground. Dwarfing everything in sight it bore silent testimony to the nobility of the forest that formerly possessed the land. But at the sawmill that the nightwatchman guarded an occasional spruce would yet come in, twelve feet through, so large that it had to be dynamited and quartered before it could be gotten into the mill. In the mountains trees six feet in diameter eight or twelve feet above the ground were said to be common, supplying at the mills six lengths twenty-four feet long, or a hundred and forty-four feet below the branches.

In one of the small stubs near the house, the New Englanders pointed out with friendly interest a nest hole about twenty-five feet from the ground that a family of Western Bluebirds occupied early in the summer, like eastern Bluebirds coming to sit on the fence posts and get worms from the garden. Many other birds came to sing on the edge of the clearing, the gardener told me, but added regretfully that she did not know what they were.

At the foot of the garden were a number of old snags, gray charred stubs in which Tree Swallows nested. The gardener's sister, who from her window in the peak enjoyed looking down on the snags and across to the mountains be-



yond, told me of the birds. "When they first get here, if there isn't a royal battle over those snags!" she exclaimed. "Fight? Yes, scream and holler and fight around those trees. I used to set and watch them birds." The chipmunks, she said, climbed the stubs and the Swallows drove them off. "I used to like to see them fight a squirrel down," she said. "Half a dozen would dive right at him and they'd put him down in a hurry."

Only one family of Tree Swallows were in possession at the time of my visit and their nest was about twenty feet from the ground on the east side of the stub. Once when I was watching it the gardener warned me not to sit near the stubs when the wind was high for, as she said, "they go over sometimes"; but her husband in a tone of superiority remarked that they wouldn't fall in my direction as the wind was from the ocean. When after several visits the birds had become somewhat used to me I put my camp stool down at the foot of the stub where the bracken stood above my head, and the Swallows went about their business unmindful even of the white dogs that had accompanied me. The bark had fallen off the stub from the nest hole down, but still held above and made a shading portico for the door.

The Swallows in coming to the nest would sail down on set wings. If I did not see them I knew they were approaching by seeing their shadows wavering over the shiny gray trunk and the ferns below, and also by the actions of the young which would crane out of the doorway till the sun lit up their three big chirring yellow throats. When the three nestlings' heads crowded the doorway it looked as if the builder, the 'carpintero', had not measured for such a cup full. Occasionally one of the old birds would go down into the nest out of sight, but generally they clung to the doorway feeding the young from outside.

When the female was hanging there the dull sheen of green that showed on her back was in striking contrast to the handsome steel green of the back of the male. When one of the nestlings stood in the doorway the sun rested on its sooty head and lit up its bright eyes as it pecked vaguely at the wood. It was looking out into the world. Perhaps it felt the call of the open sky. In any case the next time I came that way the old stub stood silent and deserted. From being a center of life and interest, a home, it had become a charred dead tree trunk. I turned away as from the empty house of a friend.

*(To be continued)*

## A LIST OF THE BIRDS BREEDING IN SAN FRANCISCO COUNTY, CALIFORNIA

By HAROLD E. HANSEN and WALTER A. SQUIRES

WITH FOUR PHOTOS BY THE AUTHORS

**S**AN FRANCISCO County has an area of forty-one square miles. In elevation it varies from sea-level up to a little less than one thousand feet above the sea. The eastern part of the county lies in the Upper Sonoran life-zone and the western portion in the Transition life-zone. Alcatraz Island and Yerba Buena Island lying in San Francisco Bay, and the Farallon Islands some thirty miles out to sea beyond the Golden Gate, are included in the coun-