

THE AUK:

A QUARTERLY JOURNAL OF
ORNITHOLOGY.

VOL. XXIX.

APRIL, 1912.

No. 2.

BIRDS OF THE PARAMO OF CENTRAL ECUADOR.

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PARAMO is the name for the treeless zone of the Andean Mountains which reaches from the lower border of perpetual snows to the upper border of the tree line. This zone corresponds in western Ecuador to the areas found between the elevations of 12,000 and 14,000 feet. It is wide or narrow according to the relative steepness of the mountain sides between these elevations. While the transition area between the lower Paramo and the upper tree and bush line is more or less an interlocking of the two, and some stunted trees are found in sheltered gorges far up into the typical Paramo, there is no mistaking the region as soon as you near its lower edge, after a strenuous climb through the diminishing forest. You are then in the tussock-grass country. This tussock-grass, and the numerous minor plants and shrubs which crop out among it, feed numberless herds and droves of cattle, horses and sheep, a chief source of revenue to the owners whose vast haciendas often reach up, from the lofty *tierra templada*, five thousand feet higher into the abodes of everlasting snow.

Until the Andean traveler reaches the Paramo he can have no right conception of the immense grandeur of the Andean chain of the Cordilleras. Before that event he is so hemmed in by narrowing gorges, by chain upon chain of foothills, or by suspended oceans of vapor and clouds, that he begins to say in his heart, "There are no Andes; Chimborazo is a dream and Cotopaxi pure

fiction." It was with some such feeling as this that my companion, Mr. R. S. Lemmon and myself saw our camp outfit lashed to the back of an Indian pony in the barnyard of Hacienda Rosario on one of the few really decent Ecuadorian days of last May. We had come up from Quito, six miles distant, about two weeks before and had here made the southern foothills of Mount Pichincha our happy hunting grounds. Thanks to the kind offices of that veteran naturalist and Consul of Quito, Ludovic Söderström, and to the liberality of Mrs. Espinosa, the wife of its owner, we had been enjoying glorious days at Rosario and were rewarded by many a choice skin of the Hummingbirds, Wood Wrens, Flycatchers, richly colored Cotingas, Tanagers and what-nots which flourished there. But as yet we had only caught mere glimpses of the historic old crater, 4000 feet above us, which has stood muffled guard so many centuries, over the ancient citadel of the Incas. It was completely cut off from our "Casa" view by the broad shoulder of forest-covered rocks and the gorges above the farm-house. Our rambles rarely took us far enough to see around that shoulder and then only to be confronted by the mocking vapors which ever half reveal and half conceal the upper world of Ecuador in the rainy season.

It was the first day of May when we struck out into the wooded mountain trail above Rosario's hamlet, followed by our Indian and his sure-footed pony, and, selecting the cattle paths of the nearest quebrada, we made short-cuts for the Paramo. In about two hours we began to see more daylight and some fine scenery, and at 12,000 feet, the tussock-grass began as it were to reach down its finger-tips into the forbidden grounds of the rapidly dwarfing tree growths. Bushes briefly held sway among these and even up here the brilliant hued red and black Tanagers and Violet-ear and Puff-leg Hummers had ventured to fly upon the heels of the sub-arctic Finches and such Formicarian and Dendrocolaptean species (pardon the technicality) as had been more specially fitted for what we might call a grazing, as contrasted with an arboreal, life. As soon as we reach the long grass and low bushes, a sturdy Finch, *Phrygilus unicolor* (D'Orb.) of bluish slate color, almost as large as our Fox Sparrow, flushes, flies ahead and drops into the grass. Another, of the same size, brownish and streaked, alights

upon a nearby bush. Both are shot, and as the brown one was apparently singing, they are thought to be quite distinct, but later experience shows them to be male and female. Now there crawls up the stems of a taller tussock, in much the manner of a Seaside Finch, a sharp-billed, spiny-tailed and streaked little bird, *Siptornis flammulata* Jard., which looks a very hybrid in color and habits between an *Ammodramus*, a Wren, and a Bush-Tit. It belongs to the great Wood-Hewer family, *Dendrocolaptidae*. These streaked Sedge Creepers here took the place of their longer tailed cousins *Synallaxis* of the bushes of the *tierra templada*, which had so long wearied us with their tiresome "te-cheek, te-cheek," ever since we had landed. They carried the range of this type almost up to snow line from the upper edge of the hot country or "*tierra caliente*."

A few hundred yards, and we are fairly into the Paramo, surveying complacently the tree tops, pastures and cultivated fields below us without obstruction, save as the fickle vapors hide them momentarily from view. Raising our eyes, the dim outline of the snowy cone of Cotopaxi slowly focuses itself far, far away to the south, high above the backbone of the Western Range. A thousand rounded, intervening summits form its setting. Close by, a familiar note suddenly reminds us of home; a Wren cry surely. Beating about, we are rewarded by securing a specimen of the Andean Marsh Wren, *Cistothorus brunneiceps* Salvin, which we had found breeding in the *Juncus* bunches below Rosario at 10,000 feet, the lower limit of its range. But we must turn our backs on trifles, and, trudging now among the maze of cattle trails that intersect the sedge, we become painfully aware of our great elevation and the difficulty of following the steady pace of our native guide. Suddenly, along the edge of a dry ditch, a large Snipe-like bird, *Gallinago nobilis* (Sclater), flushes at our feet and disappears over the nearest knoll. These are called "Woodcocks" by the English inhabitants of Quito, who esteem them fine game. They do not frequent marshy tracts and live almost entirely in the open, dry Paramo plains among the tussock-grass. In the same places, where the sedge grows dense and high, the peculiar, Grouse-like Tinamous hide. When one of these strange, short tailed birds takes wing, giving voice to its piercing, half whistling, half shrieking succession of notes, one is reminded, amid the novel confusion, of a bobtailed

Buff Cochin Pullet suddenly transformed into a winged cannonball. Of course one's first shot at such a spectacle is a clear miss and the bird seems to fly, and fly clear out of the country, as you watch its exit.

Much to our surprise the everlasting stumptailed Ant-thrushes, *Grallaria monticola* (Lafr.), of the *templada* bush-regions, common as far down the line as Huigra (4000 feet), have even followed us up here, into the wide open middle Paramo, to an elevation of 12,500 feet. The next day several of them were noted on a scantily wooded cliff, near camp, as high as 13,500 feet. This is a wide range for a bird of such limited powers of flight. In fact it is almost impossible to force this humpty-dumpty, thrush-like bird to open its wings, its long, robust legs enabling it to leap and jump and run with almost as much address as the famous long-tailed *Paisano* or Road-runner of Mexico. Strange, is it not, that such diversely feathered birds should have such similar habits? Nothing can be more tiresome than the three-cornered "Wu, weeo, weou" or whistled song of this constantly invisible bird. Especially does this apply to the feelings of the collector, who has tried vainly from day to day to locate and secure the singer, which sits motionless in a low bush, or on the ground beneath, in such a way as to be completely obscured. The notes are ventriloquial, and you may actually walk away from it in endeavoring to get closer. Another bird of wide range, which comes up this far, is the tiny and fantastic little streaked Flycatcher with its Padrewski hair, the *Anairetes parulus* (Kittl.). It follows the occasional bunches of stunted trees on the quebrada sides to 13,000 feet, where also a high ranging Warbler was seen. Two other species of Sparrows were noted in the grass, and a dainty, buff colored Titlark, *Anthus bogotensis* Sc., of about the size of ours, but noticeably different in being able to fly without the inevitable snickers of *A. rubescens*. Perhaps the grandeur and solemnity of their habitat has subdued the frivolity of this genus in the Andean bird.

Our Paramo camp was located near the highest point where fuel could be secured, and in a pass which presented on the east a precipitous bluff of rocks leading on up directly to one of the lower peaks of Pichincha's summit. We had been warned against cold, and had endeavored to provide for it, but our first night was a

"terror," or, at best, an eight hour "shiver," without even the consolation of being frozen, for the mercury has the faculty of hovering at about 32° to 34° by night during the centuries at this charmed spot, nine miles below the Equator and two and a half miles above the sea. Dry wood was "excessively rare" (as they say in auction catalogs), and any kind of wood or grass or fuel, native to such a region, or even imported into it, is so loath to burn in that rarefied air, that we were lucky to even warm our beans and rice and chocolate in time to "turn in" at 6.30. By dark the eternal snows or rather sleet, began to fall and we were forced to "bunk up" to keep warm. Did I say, "keep warm?" Well, we *did not* keep warm, though we had enough on and about us to have withstood a zero temperature at sea level in the same outfit. I began to realize about ten o'clock that sleep was out of the question, so, between the ague fits that periodically stole over my frame, I listened. There was something doing that night. The moon behind the mists and sleet was eerie, and Pichincha's black crater-wall almost overshadowed us. The thin and ghostly sides of our tiny tent pulsated with the breeze, and I was vaguely reminded of that weird scene of the Witches' Kitchen, in Macbeth. The futile attempts of my companion a few hours before, to make the evening bean-pot boil, lent color to this fancy. Suddenly I was conscious of a Pentecostal sound, a rushing, mighty, but far distant, blast. It seemed to come from the crater. Could it be an eruption? No, the crater was extinct! And then, just as this thought consoled me, a deep answering growl, like a defiant echo from the cliff above our camp, sent thrills along my spinal marrow. Lemmon seemed to sleep, so I had no companion to this new misery. An interval, a drowse, and then another rehearsal of this unearthly carouse of the cliffs awoke me. Then did I become conscious of notes high-pitched and plaintive, a sort of tiny climax or tintinabulation, coming from the tussock-dotted arena around the camp. In the long hours which marked this dismal chorus I thought a thousand solutions for it. The crater and its possibilities figured in all; the answering growls and roars were those of ranging Mountain Lions on the high slopes and the final treble came, mayhap, from a watchful brown-breasted Flycatcher, *Myiotheretes erythropygus* (Scl.), whose mate I had shot the day before, above the nearby spring. When

we got back to Quito I asked Mr. Söderström to explain it all. The rushing wind he thought might be an Owl or some flying night-bird, possibly a "Woodcock" gyrating, or possibly "one of those Grouse." The Puma-like roars were surely from an Owl, and the minor refrain the chirping, peeping notes of the innocent and timorous Tinamous! What an anti-climax to my tragedy!

Our first morning on the mountain-top dawned gloomily enough, and it was tough work kindling a fire and warming up a bit. While Lemmon fanned the smudge I visited my frozen mouse traps and was cheered not a little by a very good catch of small rodents, an order very poorly represented in the lower altitudes of Ecuador. Near the spring I came across a brown bird whose make up and actions reminded me of a hybrid between a Wheat-ear and a Shore-lark,¹ as it ran about the banks and spray dashed rocks of the pool. It proved to be another member of that strange South American family of Dendrocolaptids. Not long after, as we rose over the ridge that separated us from the final slope to the crater, a few more were seen in company with a larger species, *Upucerthia excelsior* (Scl.), whose color was very similar but whose physique and movements among the sparse grass and heather reminded us of a cross between a Palmer's Thrasher and a Cactus Wren. Both these birds were almost wholly silent, only a sort of low, troubled, warning note escaping them when more sorely pressed by our pursuit.

The general absence of song, or even of voice, among the really abundant bird-life of this sublime region gives one a sort of awesome feeling as he goes popping about the slopes with a puny cane-gun. What are all these birds doing here? They don't seem to be breeding or mating or migrating;— just living, shiftless, without any object in life. Not so, however, the Hummingbirds. The lower half or two thirds of the Paramo is largely destitute of Hummers at this time of year, except as one may be seen to dart swiftly across in its journey to a distant peak. As one nears the snow line, however, and the top of Pichincha peers out at intervals from among the clouds, only 1000 feet above him, the Hill-Stars, *Oreotrochilus pichincha* Bourc., as they are called by Gould, suddenly become abundant. Flowers are far from common in the

¹ Its Dipper-like habits are alluded to in the generic name. It is *Cincludes fuscus albidiventris* Scl.

Paramo, but, as we near the frost line and the tussock grass dwarfs and disappears, a curious, straggling, prickly, evergreen shrub, the *Chuquiraga insignis* of Humboldt, is found growing in belts and patches and attaining a stature of six or eight feet. It has erect, thistle-shaped flowers of a brownish yellow hue and on these the Pichincha Hill-Stars seemed almost solely to feed. Away from these stony wastes, on the very verge of desolation, they never wander far, though their strength and rapidity of flight is truly wonderful and they seem to be the most restless of a restless family. We secured several specimens and were disappointed to find nearly every one in shabby, moulting plumage. The female Hill-Stars are one of the plainest of their sex in the family, a sort of frosty gray with only a faint tinge of the dorsal green which characterizes nearly all of the Hummingbirds. The males are truly beautiful, their pure white underparts and white, median tail feathers contrasting strongly with the dark wings and purple head and outer tail. The tail is large and used with fine effect in their curvets and airy gambols over the boulder-strewn arenal, down into the quebradas and up into the black, basaltic cliffs that overtop the crater. Gould asserts this species is distinct from the Hill-Star, *Oreotrochilus chimborazo*, which inhabits a like region on Mt. Chimborazo, though that mountain is only 40 miles distant and could be reached by these wonderful aeronauts in as many minutes! What invisible barriers can they be which have set the bounds of such a bird's wanderings? The close resemblance of the two species to each other and to some ancestral type is unmistakable. We are led to think that ancestor must have lived when the lower country, now separating these two mountains, was at an average elevation of 13,500 feet, or rather so elevated that the floral conditions then and there obtaining favored the life of this Hummer. As that region became depressed, the Hummers of the two localities naturally advanced upward along the mountain slopes with the changing flora, and eventually became separated by a lower floral region, unsuited to their needs. After that, local differentiation became not only possible but probable, but it must have covered a period of many thousands of years. In short, just as many an island of the Pacific, due to depression, has been cut off from land affinities it once shared with neighboring islands, resulting in the strangest

isolation and provincialism of certain species of birds, so have the neighboring peaks of the Andes, rising above the semi-tropical ocean of the "Templada," become the refuge of slowly vanishing groups of birds whose very existence depends on an equatorial environment that is elevated about 13,000 feet above the sea.

There are other species of Hummingbirds which venture into the Paramo and even range over the top of Pichincha, but the Hill-Stars outnumber and outgeneral them ten to one. One of these is a dark Thorn-bill, *Ramphomicron stanleyi* Bourc., which feeds in a dainty, topsy-turvy fashion on the alpine crocuses and dwarfed heaths, which, near the snow line, have absolutely no stems but just bloom at the surface of the sand and ash. It is "heels-over-head" with these Hummers and they can take the turn with wonderful grace, seeming to be walking from flower to flower on their bills. Once in the hand, this species displays amazing colors, a beard of ruby fire on the lower throat; the chin metallic green; the long, broad and emarginate tail of a peacock blue! Gould says it is only found *within* the crater of Pichincha. We found it only *outside*, along a narrow gorge, 500 feet below the crater's top. Just as the snow is reached, the sandy crater-slopes are strewn with boulders, and seated on these we here find for the first time a beautiful grayish Flycatcher, *Muscisaricola alpina* Jard., dark above, nearly white beneath, the size of our Phœbe, darting languidly about after the insects which have dared this thin and frigid atmosphere. Not a sound save a weak and plaintive call escapes them and their presence seems to heighten the mystery of a haunted land. Here, too, is the very exclusive haunt of the whistling, loud-calling "Partridge"¹ of the arenal,—the Crater Partridge it may well be termed, a brownish, sand-colored bird of swift, nervous flight and about the size of a Pigeon.

Hawks are not rare; a black fellow with red legs, the size of our Sharp-shin, often darting around the quebradas after an unwary bird or mouse. The handsome Vulturine Hawk, *Ibycter carunculatus* (Des Murs.), looking and behaving much as our Texan Caracara, was seen about camp in pairs and one was shot by Mr. Lemmon out of the driving mists on the very crater brink of Pi-

¹ Not a Partridge at all, but a seed-eating Plover-snipe, belonging to the *Charadriiformes*; *Attagis chimborazensis* Sci.

chinchu. The ubiquitous Sparrow Hawk also climbs these slopes, and, for all one can see, it is exactly the same as ours of the States.

High over all careened the white ruffed Condors. As many as five could be seen at one time, circling the summit or setting their course directly toward and over us when our shooting became most noisy. Their appearance in flight resembled closely that of the California Vulture, there being more of the Eagle in it than is seen in the gyrations of our Turkey Vulture. No flapping was noted, except a few strokes when shot at, as one flew directly over, about 250 feet above our heads. The flight is very swift, not often in circles but from peak to peak or down over the Paramo, to which region they seem to mostly confine themselves. We never saw them at Rosario, though they are said by Mr. Söderström to breed as low in the cañons as 8,500 feet. Despite their white secondaries and collar, Condors rarely look whitish in flight, the back generally being above the line of vision. I was greatly disappointed in the apparently small size of these birds from an open-air viewpoint. They actually looked no larger, in such magnificent surroundings, than our own poor Buzzards. However, even mountains look small from the Paramo and when one of the great birds bore down upon me, at the report of my gun, and came rushing along about 150 feet overhead, with the tempest in his teeth and his widely distended primaries cutting the air with a sound like a hundred sabres, I was quite impressed. The glancing eye and rapidly turning head, as he made a few circles above me, showed that he also was looking for game, but evidently my anatomy was not to his fancy and he passed grandly on.

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Feb. 9th, 1912.