# LIFE HISTORY OF THE LITTLE TINAMOU

By Alexander F. Skutch

The Little or Pileated Tinamou (*Crypturellus soui*) is a dull-colored, stout, short-winged, almost tailless, terrestrial bird about nine inches in length. In both sexes the pileum is slaty black and the sides of the head are sooty gray. The upper parts are rich seal-brown, becoming umber on the tail coverts. The chin and upper throat are whitish; the lower throat, sides of the neck, and upper chest are deep grayish brown. The more posterior ventral plumage is grayish tawny. The bill is blackish, the eyes are brownish yellow, and the legs and feet are greenish yellow. This description applies to the form with which this account chiefly deals, *C. s. modestus* of Costa Rica and neighboring parts of Panamá. Other races differ slightly in coloration.

The Little Tinamou ranges through the more humid lowlands of continental America from southern México to Perú, Bolivia, the Guianas, and Trinidad. In the valley of El General on the Pacific side of Costa Rica, where this bird is called "yerre," it is still quite common at 3000 feet above sea level, whence I infer that it extends higher, although I have no record of its presence at higher altitudes. Here, as elsewhere, it lives in dense, low vegetation rather than in heavy forest. It is found amid the bushy growth at the edge of the woodland, in the impenetrable thickets that promptly take possession of resting fields, in neglected pastures, and in weedy plantations, including those of coffee, bananas, and cassava. Fields of sugarcane that have long been left uncleaned offer it particularly favorable conditions. In this dense, concealing growth the Little Tinamou walks over the ground in such secrecy that it is rarely seen except by one who hides in its habitat. At the approach of an intruder, these tinamous prefer to walk rather than fly; but if pressed closely or surprised, they rise with a startlingly loud burst of wing beats and shoot out of sight. Their food appears to consist chiefly of seeds and insects gleaned from the ground.

Schäfer and Phelps (1954:18) state, without details, that in Venezuela the Little Tinamou flies into bushes and small trees to pass the night. But in British Guiana, Beebe (Beebe, Hartley, and Howes, 1917:253–258) learned from an Indian hunter that the Great Tinamou (*Tinamus major*) roosts in trees, whereas the Little Tinamou and the Variegated Tinamou (*Crypturellus variegatus*) sleep on the ground. These differences in sleeping habits are correlated with the rough posterior surface of the tarsus in *Tinamus* and the very smooth leg of *Crypturellus*. The small amount of evidence which I have gathered on this point supports Beebe's statement. Once, as I made my way in the dim light at dawn toward the nest of a Gray-headed Tanager (*Eucometis penicillata*), I almost stepped on a Little Tinamou that was resting on the ground amid dense, tall grass, where evidently it had passed the night. It arose from my feet with an alarmingly loud whirr of wings. I have observed the Great Tinamou roosting in a tree well above the ground in Costa Rica (Skutch, 1959).

## VOICE

The Little Tinamou, although a member of a "songless" order of birds, emits such full and pure notes that as music they seem to rank higher than the more complex performances of all but a few of the most gifted of the true songbirds. The exquisite notes of this tinamou are heard occasionally throughout the year, at all hours of the day and even in the night, but they are repeated most frequently as darkness settles over the thickets where the birds move unseen.

The whistled songs of the Little Tinamou vary considerably in volume and structure, but whether these differences are associated with differences of sex or of motivation,

I cannot tell. As the light waned, a tinamou which I watched incubating, presumably a male, broke his daylong silence with short, subdued whistles that gradually, with numerous repetitions, grew in volume. Presently a second tinamou, perhaps the mate of the incubating bird, heard these notes and answered from the neighboring thicket with a long series of full, clear, slightly trilled whistles, beginning very low in the scale and increasing somewhat in pitch with each repetition. As though encouraged by this response to his first tentative notes, the bird on the nest replied with a whistle that was louder and longer, yet not so full as those which issued from the thicket. For the next 20 minutes he sang intermittently and did not become silent until I could no longer distinguish him from the dusky foliage where he sat, slightly more than a yard in front of my blind.

On another evening, a tinamou uttered a mellifluous crescendo, followed by a beautiful, long-drawn whistle, full yet tenuous, which neither rose nor fell in pitch. Another song was a single, long-continued, exquisitely modulated, tremulous whistle. Once, as I sat in a blind in second-growth vegetation near the high forest, the twilight chorus consisted of the voices of both Great and Little tinamous. The songs of the latter were more varied, and some of them resembled those of the Great Tinamou, although the notes of the larger bird were more powerful. Doubtless the notes of the Little Tinamou will continue to embellish plantations and scrubby growth long after the Great Tinamou has vanished along with its habitat of mature rain forest.

## NEST AND EGGS

In El General, the Little Tinamou breeds through much, if not all, of the year, but there appear to be two peaks of nesting, in February, the height of the dry season, and in September, one of the rainiest months. The eggs are laid on the ground on a few leaves or other fragments of vegetation which appear to have been already present in the chosen spot, rather than placed there by the tinamous. These eggs nearly always lie amid such dense vegetation that they and the parent bird which covers them are invisible a few feet away. Of the 16 nests that I have seen, only two were found by me; the remainder were shown to me by other people, chiefly laborers who had discovered them while cleaning plantations or pastures. Seven, or nearly half of these nests, were situated in small patches of sugarcane which were being cleaned by hand. Others were in plantings of coffee, cassava, bananas, and maize, or in weedy pastures. One was in a bushy opening in tall second-growth woods, and one in primary forest not far from its edge. Even when the laborer cleaning a plantation or pasture spares the nest which he has found, and leaves a sheltering patch of weeds, the nest has usually been more or less exposed on one side before being noticed, so that if the parent does not desert the eggs they are vulnerable to prowling animals.

Of the 16 nests of which I have records, 13 contained two eggs. In two instances, the parent continued for some days to incubate a single egg, which may have been the full set. The glossy shell is a beautiful shade of purplish drab. The eggs are oval, without the usual differentiation into a blunter and a sharper end. The measurements of 16 eggs average 43.1 × 32.4 millimeters. Those showing the four extremes measured 45.6 × 33.3 and 40.5 × 31.8 millimeters.

In the valley of El General, 2000 to 3000 feet above sea level, 16 sets of eggs were found as follows: February, 5; April, 3; May, 1; August, 1; September, 3; October, 1; November, 1; December, 1.

In Trinidad, most eggs are laid in May, but there are two records of nests in October. Here, as in Costa Rica, the set usually consists of two eggs, less often of one (Belcher and Smooker, 1934:576). In the Bartica district of British Guiana, where

"the nesting period seemed interminable," the Little Tinamou lays a single egg (Beebe, Hartley, and Howes, 1917:267). One wonders on how many observations these conclusions are based. From Kartabo, a neighboring district on the Mazaruni River, Beebe (1925:153) reported two records of breeding, both in May.

## INCUBATION

The obscurely colored parent tinamou sits very closely on its eggs in the shade of the lush vegetation that clusters densely around it. Often the bird remains steadfast while a human visitor approaches and bends over it. Frequently the intruder finds the tinamou crouching with its foreparts depressed, its head near the ground, and its posterior end elevated until the rudimentary tail and under tail coverts stand almost erect, revealing the dark pencillings on the light gray feathers of the latter. It is questionable whether the tinamou gains anything by assuming this unexpected posture, for, to the human eye, it is certainly not less conspicuous than when incubating in the usual position. Moreover, the elevation of the hindparts often exposes the eggs, and these glossy, richly colored objects are more eye-catching than the bird itself.

Although incubating tinamous permit a close approach, I have never succeeded in touching one. While my slowly advancing hand was still a foot or two away, rarely closer, the birds have taken flight with explosive suddenness and skimmed low over the ground, to vanish into the nearby herbage. One that faced me when I tried to touch it shot toward me and passed in front of me on its abrupt flight.

Often, however, the incubating tinamou will permit itself to be touched with the end of a stick a yard or so in length. Taking advantage of this propensity, I have placed identifying marks on several tinamous by attaching a tuft of cotton soaked in white paint to the end of a stick and applying it gently to the feathers of the back. One tinamou allowed me to touch it repeatedly in the same spot until I had made a conspicuous mark on its brown plumage. In each instance, subsequent visits revealed only the marked parent covering the eggs. I did not learn the sex of this parent. Other observers, however, have found only the male tinamou of a number of species taking charge of the eggs and young, hence in the following account I shall assume that the bird I marked on the nest was a male.

At noon on November 25, 1936, I entered a blind I had set on the preceding day at six feet from a nest in a small canefield. The two eggs were then uncovered and cold, and they remained so until, at 12:44 p.m., the parent bird which I had marked approached the nest from the side opposite the blind, walking calmly through the weeds that grew between the sugarcanes. When he reached the eggs he adjusted them with his bill while standing over them, then settled down to incubate. All through the dim, cloudy afternoon the same bird remained quietly on the eggs, only at long intervals shifting his position or rising up to turn them. In the early part of the afternoon he was much annoyed by the mosquitoes and small flies that buzzed around his head, and he frequently shook his head to drive the insects away. As night approached he grew restless, and in the course of a few minutes he shifted his position on the eggs more than he had done in the preceding five hours. After the crepuscular Pauraques (*Nyctidromus albicollis*) had begun to fly and call in the dusk, I heard the voices of tinamous for the first time since I started to watch. One among the sugarcanes sang beautifully, while from the thickets beyond the canefields came the lovely whistles of others. But the patient bird so close in front of me remained silent.

I watched for the incubating tinamou to tuck his head back among his feathers and fall asleep, but he faded out of sight in the gathering darkness with his head still exposed. After I could no longer see the bird by the light from the sky, I flashed the beam

of my flashlight on him from time to time, but each time he was awake, sitting with his head depressed near the ground. At six o'clock, I carefully left the blind.

When I returned to the blind at daybreak, the marked tinamou was still covering the eggs. In the dim early light, while the Orange-billed Nightingale-Thrushes (*Catharus aurantiirostris*) sang, the tinamous in the canefield and off in the thickets whistled clearly and sweetly, then lapsed into silence which they did not break after the light grew strong. Through the early morning, the bird in front of me sat quietly and patiently, until, at 7:05 a.m., he arose and walked deliberately away through the weeds. Then the hours slipped by without the arrival of a parent bird to take charge of the now thoroughly chilled eggs. When I went for lunch at 11:30, the eggs were still unattended; but on my return at 1:00 p.m., I found the marked tinamou again incubating. He sat motionless and apparently unperturbed while I took down the cloth blind close in front of him. In my 12 hours of watching at this nest, no other tinamou ever came within my restricted field of vision.

On the following day, November 27, I found the marked tinamou on the nest at 7:25 a.m. and at 3:56 p.m., and on November 29 he was present at 9:15 a.m. Two days later, I found the eggs broken, evidently by some animal.

In 1954, I made frequent visits, over a period of 15 days, to a nest situated in second-growth woods near our house at Quizarrá. On all but one of 28 visits at various times between 7:15 a.m. and noon or a little later, I found the eggs unattended. The single occasion when the parent was present in the forenoon was at 8:10 on the fourteenth day after I discovered the nest. On each of nine visits in the afternoon, which at this season was often rainy, the parent was covering the eggs; on no visit after 12:30 p.m. did I find him absent. These observations indicated that the tinamou habitually left the eggs in the early morning and, after an absence of four or five hours, returned around noon, to remain through the afternoon. Thus the pattern of incubation of this individual was much the same as that of the tinamou that I had watched from the blind. Occasional visits to several other nests showed that the eggs were unattended in the forenoon.

Although incubating Little Tinamous seem usually to take a single long recess each day, covering most of the forenoon, this schedule is not invariably followed. We have already noted that one bird was on duty at 9:15 a.m. and another at 8:10 a.m. on one occasion. At the end of February, 1937, I made half-hourly visits to a nest in a canefield, where I had marked the attendant tinamou in the manner already described. At 7:25 a.m., and on eight subsequent visits including one at 11:30, the marked bird was sitting on the single egg. At noon and on four subsequent visits, including one at 2:30 p.m., the egg was unattended. At 3:00, the egg was missing; possibly it had been swallowed by a "zopilota," a large black snake, that I had seen among the surrounding canes. Thus this tinamou, on at least one occasion, took his long daily outing in the afternoon rather than in the forenoon. I do not know how long this bird had been incubating. I first saw the nest on the day before I made these observations, but the boy who showed it to me said he had found it several days earlier, when it contained one egg.

In the Highland Tinamou (*Nothocercus bonapartei*), a polygynous species found in montane forests at moderate altitudes, the incubating male takes a single recess daily, in the middle of the forenoon, which lasts from 50 to 80 minutes (Schäfer, 1954:230). But the male Ornate Tinamou (*Nothoprocta ornata*) of the high Andes leaves the eggs three times or, less frequently, twice each day. Before walking off, he covers the four to nine eggs with feathers, and after an outing that lasts from 40 to 105 minutes he uncovers them and resumes incubation (Pearson and Pearson, 1955). It seems significant that a tinamou of the warm Tropical Zone leaves the eggs unattended for periods considerably longer than do species that breed at cooler heights.

In the Little Tinamou, incubation continues for at least 16 days, but I have been unable to learn how much longer than this the incubation period is.

## THE CHICKS

At the beginning of September, 1936, a little boy led me to see a nest which his grandfather had discovered while cleaning a small and very weedy coffee plantation. The old man had allowed the sheltering herbage to stand uncut within a radius of about two feet on all sides of the nest. When I returned to this nest two weeks later, the tinamou sat until I tried to touch him; then he flew off with the usual explosive burst of wing beats. But within four or five feet he alighted, turned through about 90 degrees, and slowly, deliberately walked past me with relaxed and quivering wings. His gait was steady and regular; he did not limp or drag his body or attempt to play the role of a wounded bird, beyond the helpless attitude of his wings. In this manner he walked into the neighboring thicket, his wings continuing to droop until the dense vegetation screened him from my view. This is the nearest approach to a distraction display that I have ever seen given by a tinamou of any kind.

When I examined the two eggs which this bird had just left, I found that one was on the point of hatching. The chick had already pierced the thick shell with one small hole, and it peeped softly from within. I went for my blind, and when I returned the parent was again covering the eggs. The only spot where I could advantageously set the blind without clearing away any of the vegetation that screened the nest was very close to the sitting bird, which remained watching me while I arranged my brown wigwam with its forward edge only four feet from him. It seemed absurd to conceal myself from a bird so confiding, in a blind that he had watched me set up; but for observing his unconstrained behavior, I thought it better to screen myself from his view.

I finished arranging the blind and took my seat within it at a few minutes past two o'clock. Soon the threatening rain began to fall and continued through most of the remainder of the afternoon. The drops which fell upon the dark, compact plumage of the tinamou gathered into crystal spheres and rolled off, or, if they remained on the flat surface of his back, stayed there as shining beads, unable to spread out and wet his well-oiled feathers.

For over two hours, the tinamou sat motionless; only the occasional blinking of his eyes revealed that he was alive. Finally, at five o'clock, he shook the glistening drops from his back and rotated about 45 degrees to his right. It became dark early beneath the heavily overcast sky. In the waning light, the tinamou started to whistle on the nest, at first in very subdued tones, then with increasing volume, while another tinamou answered with fuller notes from the neighboring thicket (see p. 225). The tinamou in the thicket did not approach the nest. After the whistles of the bird in front of me had continued intermittently for about 20 minutes, I could no longer see him.

At dawn I resumed my watch. Although I had not marked the tinamou at this nest, the bird now covering the eggs seemed to be the one that I had left there at nightfall. He sat almost as motionless as on the preceding afternoon, but he turned his head more often and at times moved his body slightly. Soon I began to hear the soft peeps of a chick. After a while, the newly hatched tinamou became restless and ruffled up the flank feathers of the parent. Occasionally I had a glimpse of its bill or the top of its head, pushed up through the outfluffed plumage that sheltered it.

At about nine o'clock, the parent shifted his position on the nest and began vigorously to preen his feathers, while the chick called more loudly. The parent's movements pushed out half of the empty shell from which the chick had emerged. After a few minutes devoted to arranging his plumage, the parent stood up and revealed the chick,

a cottony ball of down. With careful, deliberate steps, the parent advanced through the plantation toward the neighboring thicket, uttering at short intervals a low, soft whistle. When he had covered about half the distance between the nest and the thicket, he stopped to look around and see whether the chick was following. The latter, still hardly able to stand, was tumbling about in the tall weeds surrounding the nest and had made scarcely any progress. Accordingly, the parent turned and went back to the nest, where he settled down to brood.

After covering the chick for a few minutes, the parent rose again and proceeded slowly toward the thicket, repeating the same low whistle at intervals of a few seconds. The downy chick tried bravely to follow, but it was impeded by every slightest obstruction, so that, when the parent reached the thicket, the chick was hardly clear of the tangled herbage that enclosed the nest. The parent walked a short distance into the thicket, then came back to see how the little one was progressing. He did this twice more, constantly repeating his low whistles, while the chick answered with soft, rapidly delivered *peep*'s. After every tumble the chick picked itself up and struggled toward its parent, but when it was about four feet from the nest it fell on its side and became trapped in a slight depression between some decaying weed stems.

Finding that his notes had lost their power to draw the chick onward, the parent again returned from the thicket and settled on the nest, while the downy one continued to lie on its side and call. After sitting for about two minutes, the parent arose and walked back to the thicket. He did not again leave the shelter of the entangled vegetation, but walked about beneath the bushes, frequently coming to the edge to look out, and ceaselessly uttering his magnetic whistle. At times he was answered by the full song of the other tinamou which frequented the thicket and was perhaps his mate and the mother of the chick. This response caused the parent in charge of the chick to increase the volume of his own whistles until they approached the loudness of the answering notes, yet his utterances remained lower and simpler than the full song. If the tinamou in the thicket had indeed laid the egg from which the chick hatched, she took no maternal interest in her offspring at this critical stage of its life, as far as I saw.

When the chick was approaching the thicket, after struggling out of the little hollow into which it had fallen, the parent in charge came to a clear space at the edge and picked a small insect from the ground. He moved it between the ends of his mandibles while he uttered low, coaxing notes, then, as well as I could see, he laid it on the ground again. His actions resembled those of a domestic hen calling her chicks to food. But the downy tinamou was still too far away, and too absorbed in the task of reaching the thicket, to respond to the solicitation of the parent. Whenever it came to a little clear space, it would run ahead with mincing steps for a few inches, until it tripped over some slight obstruction, or bumped into a higher one which blocked its progress and caused it to stagger about until it found an opening and could push onward. A medium-sized banana leaf proved to be a major barrier and long delayed the progress of the chick which had been out of the shell for considerably less than 24 hours. But, pushing forward, the chick at last gained the edge of the thicket where the parent awaited it, having taken more than half an hour to traverse eight feet of uneven ground. It had not yet eaten any food.

For another half-hour, I stayed in the blind and continued to hear the low whistle of the parent with the answering *peep* of the chick, without again seeing either of them. Then I emerged from my tent and went to the thicket to investigate. I found the parent sitting, as though brooding, in a clear space a few feet within the edge of the dense vegetation. But when he arose at my approach, the expected chick was not beneath him, and I was a long time in finding it. Finally, I discovered it between two small,

rotting logs that formed a trap into which it had fallen. It might have stayed there until it died if I had not picked it up and placed it in the clear space where its parent had been sitting. Then I went away, and when I returned a few hours later both parent and chick had vanished.

I was interested in the fate of the egg which was left in the nest when the parent arose and called the newly hatched chick from it. On several visits during that same afternoon and the following morning, I always found the egg lying, cold and damp, beside the empty shell. After I was convinced that it would not hatch, I opened it and found a well-formed embryo that had evidently died before the other egg hatched, rather than as a result of its desertion by the parent.

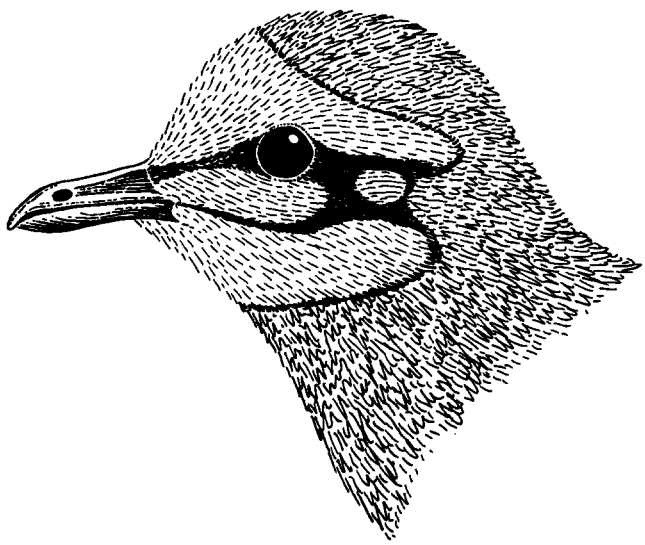

Fig. 1. Head of downy chick of Little Tinamou. Motagua Valley, Guatemala, March 14, 1932.

While I held the downy chick in my hands after rescuing it from the trap between the logs, I was tempted to make a drawing of its rather intricate markings. Then I remembered that some years earlier I had sketched a tinamou chick in Guatemala, so there was no need to detain this one longer from its parent. The Guatemalan chick was found a little before sunset on an evening in mid-March, as I walked between a banana plantation and a second-growth thicket in the Motagua Valley near Quiriguá. As I approached, the parent flew up and alighted in a clear space about 50 feet ahead of me. When I reached the spot whence he had arisen, I found the chick trying to hide among some dead banana leaves. When I picked it up it did not resist.

No larger than a newly hatched domestic chick, the young tinamou is softly clad in long, dense, silky down. It has bright black eyes, a black bill, and black feet with a very short hind toe. The down on its back is very dark, almost fuscous, with tawny spots, and its lower surface is chestnut. Its head is marked with certain conspicuous tawny areas, outlined in black (fig. 1). These markings are wholly lacking in the adult.

While I was making the original sketch for figure 1, holding my notebook on my knee with my right hand and the chick in my left hand, the young tinamou grew impatient and struggled mildly to escape, uttering a few weak *peep*'s. When I had finished the sketch and set the chick on the ground, it proceeded to walk off alone. I

retired a short distance and watched. After a few moments, the parent emerged from the bushes and led the chick off through the banana plantation, where they soon passed from view. This occurred 30 years ago. Although in most of the intervening years I have dwelt in regions where Little Tinamous are abundant, I have not again seen a parent with young, except the one whose hatching I watched. They move in the greatest secrecy amid the densest vegetation.

## SUMMARY

In Central America, the Little Tinamou (*Crypturellus soui*) forages on the ground in second-growth woods and thickets, weedy plantations, neglected pastures, and similar habitats, from sea level up to at least 3000 feet. It flies only when surprised or closely pressed.

This tinamou has a variety of songs, consisting of whistled notes that often rise in pitch and may be long-continued. It sings through much of the year, at all hours of the day and even by night, but it is most vocal in the evening.

In the valley of El General in southern Costa Rica, breeding continues through most, if not all, of the year. There seem to be two peaks in nesting activity, centering in February and September.

The glossy, purplish drab eggs are laid on the ground, on a few scraps of vegetation, in dense, low herbage. Sets of two eggs are the rule, but occasionally a single egg is incubated.

The incubating parent sits so closely that it may be touched with the end of a stick, but it avoids an approaching hand. At nests where a sitting bird was marked with paint, only one parent, evidently the male, was seen incubating. Each day he takes a recess which lasts four or five hours or even more and usually occupies most of the forenoon, but occasionally the long outing may be taken later in the day. One incubating tinamou sang in the evening twilight and was answered by another in the neighboring thicket.

A downy chick was led from the nest less than 19 hours after it hatched. While the parent lured it onward with low whistles, it proceeded over the rough ground with the greatest difficulty. Convincing injury simulation has not been seen in this tinamou, but a parent with an egg on the point of hatching walked deliberately past the observer with relaxed, quivering wings.

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