NOTES ON THE LIFE HISTORY OF COLUMBIGALLINA TALPACOTI IN SURINAM

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The Talpacoti Ground Dove (*Columbigallina talpacoti*) has an extensive range, occurring from tropical Mexico south to eastern Peru and northern Argentina. Peters (1937:108) recognizes four races of which the nominate, *C. t. talpacoti,* is found in Surinam.

The general color of the male is deep vinaceous-chestnut, somewhat paler on the under surface; the crown of the head and the nape are bluish ash-gray. On the scapulars and the upper wing coverts there are several dark spots. The female differs from the adult male in being earth brown above and below, while the head is grayish brown. It is a typical ground dove in general appearance, somewhat larger than *passerina* and *minuta,* the two other members of the genus *Columbigallina* which are found in Surinam. The weights of specimens collected by me in this country were: two males—41 and 48 grams; four females—44, 45, 50, and 51 grams.

In Surinam this little dove is well known under the name "stondoivie" (stone dove). In the coastal area it is particularly numerous wherever there are open sandy places on the thickly overgrown sand reefs, which run parallel to each other and more or less parallel to the present coast line amid swampy country; it occurs also in sandy savannas of more interior regions. This dove has adapted itself, furthermore, to cultivated lands and to waste places near human settlements. It is in fact the only member of the genus *Columbigallina* in Surinam which is quite a common garden bird, nesting even in the middle of the town of Paramaribo. In this respect it differs from *C. passerina,* which seems wholly confined to sand reefs and savannas and is certainly not a familiar and confiding backyard bird as it is reported to be in the southeastern United States (Bent, 1932:435).

C. talpacoti, like *minuta,* is much less a ground dove, ecologically, than is *passerina,* for it seems wholly dependent on the ground only for feeding and collecting nest material. A large part of its life is spent in shrubs and trees. The birds are usually seen singly or in pairs, but in favorable localities a number of birds, up to 20 or 25 individuals, are often seen feeding together.

Voice and display.—The cooing of the male begins with "hŏ-ŏ" and is repeated with quickening tempo so that near the end of a series of notes, each one sounds more like "hoo." When the bird is cooing the neck is thickened and the tail goes up and down with the sound. The male often terminates cooing by taking flight, whereupon he rises a short distance in the air, claps his wings a few times loudly and vigorously, then soars downward with outstretched wings for a short distance before resuming flight with rather slow wing movement. I presume this to be a kind of courtship flight. While the male performed in this way, however, I did not see a female nearby.

Copulation and related behavior.—All instances of copulation seen by me have taken place on branches of trees. The two birds sit close to each other, each rapidly flicking its wing tips, lifting them only a few millimeters from the body. Then they start billing. Each may alternate this by turning its head and preening behind one of its own wings. The male then mounts the female. After copulation, wing flicking continues while billing and wing preening may start once again. Wing flicking is always an indication that the birds are excited or peculiarly stimulated. It is seen in many circumstances; for example, it precedes and accompanies both fighting and feeding of the young. Once formed, the pair is almost inseparable. I well remember two doves which, in a very

heavy rainshower on June 15, 1947, were sitting so close against each other in order better to shed the rain drops that they looked like one solid mass.

Belligerency.—Males are rather quarrelsome with other males and often fight. This is the usual type of dove fight in which each bird tries to strike the other with one or both of its wings and each flies upwards in order to try falling down upon its opponent. Nervous wing flicking is evident throughout the struggle. A threatening attitude against other birds venturing to approach too closely, or against me when I inspected the nest, consisted of the lifting of the nearer wing toward, or against, the intruder, while the body leaned away.

Breeding season.—During practically all months of the year nests with eggs can be found, but my own data are too few to demonstrate nesting peaks or other characteristics of the breeding season. Hellebrekers' account (1942) of the Penard egg collection from Surinam gives no details in this regard. Several broods are reared in a year by one pair. In my garden the same nest was used by a pair of these doves for three broods in relatively quick succession, as follows:

Brood 1. First egg laid on October 25, 1951; hatched on November 7; young left nest on November 18.

Brood 2. First egg laid on December 2, 1951; eggs hatched on December 15; young left nest on December 27.

Brood 3. First egg laid on January 31, 1952; eggs hatched on February 13; young left nest on February 24.

The interval between fledging of the first brood and starting of the second was 13 days and between fledging of the second and starting of the third brood, 34 days.

Nest site and nest.—The nest is always built in trees or shrubs. In trees it is sometimes placed on a *Bromelia* at a great height. In this respect *C. talpacoti* again resembles *minuta* but differs from *passerina,* at least in Surinam, where *passerina* invariably nests on the ground, as it likewise does in British Guiana (Young, 1928:758). Many nests are built in shrubbery at a height of only a meter.

The nest itself is sometimes a loose structure consisting of only a few sticks or grass stems resting on a solid base of big leaves of a living plant. In Beebe (1917) there is a photograph of such a nest. This type of nest I found on October 8, 1951, in my garden on some big leaves of a *Lagerstroemia* about three meters above the ground. Nests of this type are in danger of falling down with the leaves; this happened to the last-mentioned nest, which came down on October 19 when the young were two days old. More often the nest is a compact clump of small dry sticks, roots, and grass stems, with a fine cup in the middle. That it is sturdy is proven by the fact that, as mentioned already, a nest in my garden was used for three broods in succession. It was built on a horizontal branch of a *Lagerstroemia* at a height of about 1.5 meters and was well hidden by the big leaves. When the young of the last brood were at the point of leaving, the nest fell down, but at that stage the young were able to support themselves on nearby branches.

Sometimes old nests of other birds are used. On September 25, 1952, a dove was sitting on an old nest of *Ramphocelus carbo* in a *Lagerstroemia* in my garden; the young had left this nest in the first days of September. The doves used the same nest for their second brood. On October 21 the dove was again incubating on this nest, and *Ramphocelus* was sitting on a new nest in the same tree at a distance of about 60 centimeters from the dove.

Nest building.—Both sexes share the task of building. The nest material is always collected on the ground, and only one stick or piece of dry grass at a time is taken to the nest. The male may or may not be an assiduous builder. I have often seen males collecting nest material and starting nests without completing them. In one instance nest build-

ing lasted only two days, for on July 20, 1952, a nest was started which contained the first egg on July 22.

Egg laying.—The clutch almost invariably consists of two eggs, but in the first nesting of the closely observed pair in my garden only a single egg was laid. The first egg of the third brood was laid on January 31 before 6:30 a.m.; the second, on February 1 between 7 a.m. and 4:30 p.m. In another brood the first egg was laid on July 22 before 3 p.m. and the second on July 23 between 7 a.m. and 5:30 p.m. Laying of eggs on consecutive days thus seems the rule in this species.

Weights of four fresh eggs were: 3.22, 3.25, 3.5, and 3.72 grams. Measurements of eggs are given by Hellebrekers (1942), these overlapping for the species *talpacoti, passerina,* and *minuta.*

Incubation and hatching.—In all the three broods that I watched, the female began sitting on the empty nest one day before the first egg was laid and spent that night on it. For instance, in the second brood the female was sitting at 11:45 a.m. on December 1, whereas the egg was laid on December 2; in the third brood the bird was sitting at 7:45 a.m. on January 30, whereas the first egg was laid on January 31. This habit *talpacoti* appears to have in common with *minuta,* of which I disturbed a bird sitting on an empty nest on October 25, 1946.

As in other doves, the female was found sitting on the eggs from the afternoon through the whole night, to be relieved in the morning by the male. The male sat through the morning and was relieved by the female in the afternoon. The male almost invariably arrived between 10 and 11 a.m., and the female relieved him between 3 and 4 p.m. Nest relief took place in the following way: the reliever alighted in the tree, preened for some time, then walked toward the nest. Generally the incubating bird flew straight from the nest on the approach of its mate. A few times the incubating bird was reluctant to leave and had to be pushed from the eggs by its mate.

In the first brood, consisting of only a single egg, incubation was 13 days (October 25 to November 7); in the second brood of two eggs, 13 days (December 2 to 15); and in the third brood of two eggs, 12 days (February 1 to 13). In this respect *C. talpacoti* again resembles its relative *minuta.* Of the latter species I found the incubation period in one pair to be 13 days (October 28 to November 9).

As to the hour of hatching in *talpacoti,* in the first brood the single nestling hatched on November 7 at about 6:45 a.m.; the young bird was still wet and pieces of shell were in the nest. Of the second brood both young hatched on December 15 between 1 and 3:30 p.m.; by 3:30 the shells of the eggs were already gone. The first nestling of the third brood was out of the shell on February 12, between 3 and 4:30 p.m., but the second did not emerge until February 13, between 7 a.m. and 3:30 p.m. Disposal of empty eggshells was not observed. Presumably they were taken away by one of the parent birds, as I never found them on the ground under the tree.

Rearing of young.—The young grow rapidly. Daily weights of the nestlings in all three broods are shown in table 1. From these figures it is evident that the single youngster of the first brood grew faster than the nestlings of the two following broods having the normal number of two young. The eyes of the young are closed until the fourth day and are completely open on the fifth.

As during the incubation period, there was always one of the parents on the nest, and it was always the female who spent the night on it. In all three broods the female was on the nest during the night before the young left the nest. During the daytime, one of the parents was invariably found on the nest until a short period before the nestlings left. This period may vary from two days to less than one day. For instance, in the first brood the single youngster left the nest on November 18. During the day of Novem-

ber 16 this nestling was left alone on the nest for the first time. The young of the second brood left on December 27, having been left alone for the first time somewhat earlier the same day.

The frequency with which the nestlings are fed during the first few days tends to coincide with that of normal nest relief. On December 16, the second day after hatching,

Table 1

Daily Weight of Nestlings of *Columbigallina talpacoti*

Age in days	Brood 1 (one nestling)*	Brood 2 (two nestlings)		Brood 3 (two nestlings)	
0	4	3.0 gm.	4.0 gm.	3.5 gm.	4.0 gm.
1	6	3.6	4.9	4.7	5.0
2	9	6.5	8.0	6.9	7.3
3	14	9.2	10.4	11.0	11.8
4	19	12.4	12.7	12.1	13.5
5	21	14.9	15.5	16.6	16.9
6	23	17.3	20.0	20.5	20.0
7	27	19.9	21.2	22.5	24.6
8	27	21.5	22.5	27.2	24.5
9	27	23.5	24.5	26.8	25.6
10				26.5	

* The first nestling was weighed only to the nearest gram, a different balance being used for the others.

the young were fed at 10 a.m. by the male; the female did not feed them when she relieved him at 4 p.m. Two days later, December 18, the male fed at 11 a.m. and the female at 3:30 p.m. On December 22, when the young were seven days old, they were fed between 12:30 p.m. and dark three times: by the female at 1 p.m., by the male at 3:45, and again by the female at 5:30.

The fledging period of the single nestling of the first brood was 11 days (November 7 to 18); of the two young of the second brood, 12 days (December 15 to 27); and of the third brood, 11-12 days (February 12-13 to 24). When handled from the ninth day onward the nestlings tried to jump from the nest prematurely, so I refrained from weighing them after this. From table 1 it is clear, however, that the young doves leave the nest before attaining the weight of adult birds, although they can fly rather well at that time.

The adult birds became conditioned to my daily inspections to a remarkable degree. This was especially true of the female, who began staying on the nest so that I had to take the young from under her in order to weigh them. Her only reaction was to lean away and left her wing toward me, uttering a soft "hoo." I never observed injury feigning in my garden birds, although on October 31, 1946, when my close approach had startled a dove on its nest with two well-grown nestlings, the bird fluttered from the nest to the ground where it crept forward as if it had a broken wing.

After leaving the nest, the young are still fed for some time by both parents. How long this period lasts is difficult to ascertain without marking the birds. On January 9, 1952, two well fledged doves were fed in my garden in the very tree where the second brood had left the nest on December 27. At that age the young are prone to be begging constantly from their parents. On October 26, 1948, I watched a pair of doves with two full grown nestlings, one of them sitting between its parents and the other beside the female. The fledglings were very obtrusive, one climbing on the female's back in its efforts to take hold of her bill. The young bird which sat between its parents was fed successively by both of them, while the other young was fed by the adjacent female.

SUMMARY

In Surinam *Columbigallina talpacoti* is a common bird in open sandy country. It is equally common in waste places and gardens. The species is much less a ground dove than its relative, *C. passerina,* in that it spends much time in trees and nests at various heights.

Breeding occurs almost throughout the year, during which several broods are reared. Details are given on three broods which were reared in the same nest.

Song, courtship flight, and copulation are described.

The nest is built by both sexes, while the nest material is collected from the ground. The day before the first egg is laid, the female starts sitting on the nest and remains on all night. She incubates steadily from afternoon until the morning of the next day, when she is relieved by her mate. Incubation lasts 12-13 days.

The young grow rapidly; their daily weights are given. Both parents feed the young and cover them in the nest until about a day before the young leave the nest. The female sits on the nest the last night before the young leave. The fledging period is 11-12 days.

LITERATURE CITED

Beebe, W.

1917. Tropical wild life in British Guiana. Vol. 1. (New York, New York Zoological Society.)

Bent, A. C.

1932. Life histories of North American gallinaceous birds. Bull. U. S. Nat. Mus., 162:xi+477 pp.

Peters, J. L.

1937. Check-list of birds of the world. Vol. 3. (Cambridge, Harvard Univ. Press.)

Hellebrekers, W. Ph. J.

1942. Revision of the Penard oological collection from Surinam. Zool. Meded., 24:247.

Young, C. G.

1928. A contribution to the ornithology of the coastland of British Guiana. Part 1. Ibis, ser. 12, 4:748-781.

Paramaribo, Surinam, March 27, 1952.