

NOTES ON THE SWALLOW-WING, CHELIPTERA TENEBROSA,
IN SURINAM

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Recently Skutch (Wilson Bull., 60, 1948:81-97) published an important article on the life history of certain puff-birds in which the Swallow-wing (*Chelidoptera tenebrosa*, family Bucconidae) is mentioned briefly. As this is a common bird in Surinam, Dutch Guiana, the following supplementary notes may be of interest.

Habitat.—The Swallow-wing seems to be confined to sandy ground, as only in this type of soil is it able to excavate its nesting burrows. In the coastal area of this country it is for this reason confined to the sand reefs which frequently contain layers of sea shells and their remnants and which are to be regarded as old natural sea walls. These sand reefs invade the clay land of the coastal area in successive rows, mostly parallel to each other and more or less parallel to the present coast line. The width of one sand reef varies from 25 to more than 100 yards, while its length varies from one to more than 10 miles. The reefs are covered with dense vegetation. Swallow-wings are usually seen in this type of land perched on the very tops of tall trees.

On these sand ridges Swallow-wings and other kinds of birds are found which are also characteristic of the dry sandy savannas of the interior. There the Swallow-wings are more common and also easier to observe. In the breeding season their optimum habitat seems to consist of small sandy savannas with scattered shrubs and low trees surrounded on all sides by forest, the distance to which must be short. Birds breeding in this habitat are the ground-nesting *Colinus cristatus* and *Myiospiza humeralis* and the tree-nesting *Tangara cayana*, *Schistochlamys melanopsis* and *Empidonomus varius*. I never found the Swallow-wing on wide open savannas with only low vegetation.

The Swallow-wing has also adapted itself more or less to civilization, as it is common all along the part of the railway which runs south from Paramaribo wherever it is enclosed by forest. Here the birds nest in the embankment of the railway and are often seen perched on the telephone line along it.

Behavior.—The Swallow-wing is a quiet bird which sits for long periods in the top of a tree without moving. In flight it looks black with rounded wings, a very short tail and a conspicuous white rump. It feeds in flycatcher fashion in the air and returns to the same perch. Call notes and song are not very striking, but on a few occasions I have heard a twittering song, difficult to describe, which was uttered in flight.

In the breeding season they are rather pugnacious to hawks. I have seen a Swallow-wing harassing *Buteo magnirostris* several times as the latter was sitting in a tree on its breeding grounds looking for prey.

The manner of scratching the head resembles that of other puff-birds, for example, *Notharchus tectus*; that is, the leg is passed under the wing and not over the wing as in passerine birds.

Breeding season.—In the small forest-bordered savannas already mentioned, the breeding season is easily ascertained, as only then do the Swallow-wings leave the forest edge and sit either singly or in small groups of up to eight individuals in the tops of shrubs or low trees dotted over the savanna. Outside the breeding season I have never seen them in these situations. The breeding season in Surinam coincides more or less with the dry seasons. During the rains the nesting burrows would be likely to flood.

In the large Penard oological collection from Surinam, the eggs are dated from September to November and one clutch was taken in March (Hellebrekers, Zool. Mededeelingen, 24, 1942:250). According to my observations the breeding season starts consid-

erably earlier, in July and August, perhaps even in June. On June 24, 1949, I observed a few Swallow-wings on the ground in a savanna near the Zanderij airfield, where I took most of my notes. Their occurrence in this habitat is a reasonably good sign that the birds are nesting. Moreover, I found the beginning of a nesting burrow. On August 1, 1948, I flushed a bird from a burrow, which I did not open, however. On August 21, 1949, I excavated four burrows, which contained, respectively, two eggs, one egg, two still naked young and one fully fledged young on the point of leaving its nest. From the age of this last young, we must conclude that the eggs were already laid in July. Furthermore, I examined, on November 9, 1947, and on November 20, 1949, two burrows which contained two fresh eggs and one small young, respectively. All these data coincide more or less with the long dry season. On the other hand, the nesting season may extend into December, as on December 4, 1949, I opened two burrows containing one fresh egg and one small young bird. This date falls in the short rainy season, which follows the long dry season.

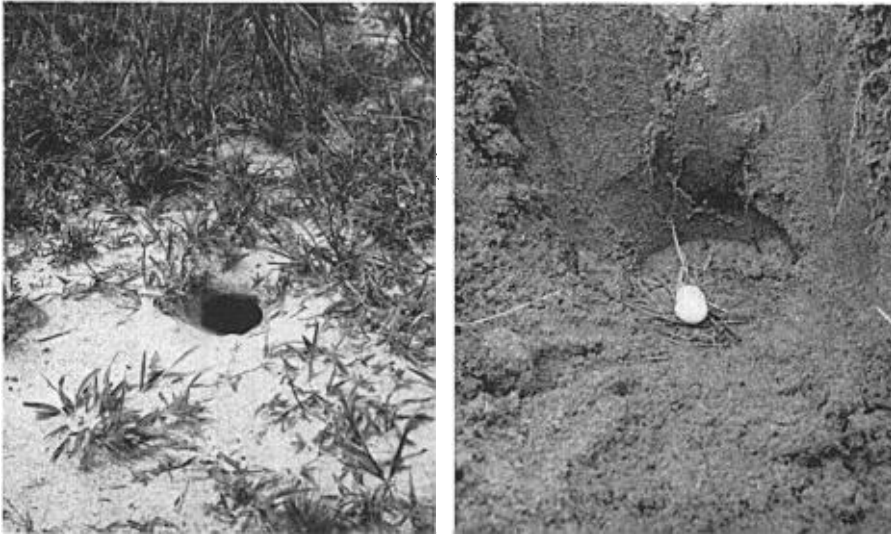


Fig. 17. Left, entrance of nesting burrow of Swallow-wing in level ground at Zanderij, Surinam, August 1, 1948.

Right, nest and eggs in excavated nesting burrow at Zanderij, September 4, 1949.

The March clutch in the Penard collection is from the short dry season. Up to the present, I have not found any Swallow-wings nesting in the locality which I visited regularly in this season. On February 26, 1949, I found the beginning of a nesting burrow, but the birds had gone on March 6. The short dry season of 1949 was, however, unusual because of its heavy rainfall. On the other hand, I observed on April 4, 1949, while driving in a draisine over the railway, several birds flushing from the embankment, a certain sign that they were nesting at that time. It seems possible that there is some local and also seasonal variation in the breeding season.

The nesting burrow.—The great majority of nesting burrows in the area where I have studied Swallow-wings are dug out in level ground. A few, however, are found in the bank of a small sandpit. The birds nest either singly or in small groups of up to four pairs. The entrance of the burrow (fig. 17) has a peculiar and characteristic shape.

It is never circular, its width always being greater than its height. The range of measurements of five entrances taken on August 14, 1949, are: height, 6 to 7.5 centimeters, width 8 to 10 centimeters.

To my regret I have never seen a bird in the act of digging, but on October 14, 1947, I watched a bird, with a piece of dry grass in its bill, running in a rather awkward way on the sand. Cherrie (*Mus. Brooklyn Inst. Arts Sci., Sci. Bull.*, 2, 1916:323-324) correctly remarks that there is no sign of excavated sand at the entrance of the tunnel. I would hesitate to assert that the sand is carried away by the birds when digging. It may be possible that it is trampled down by the birds going in and out or flattened by wind or rain. On the other hand, outside of a burrow in a bank which was not yet finished, when found on August 28, 1949, the traces of the excavated sand falling down were clearly visible.

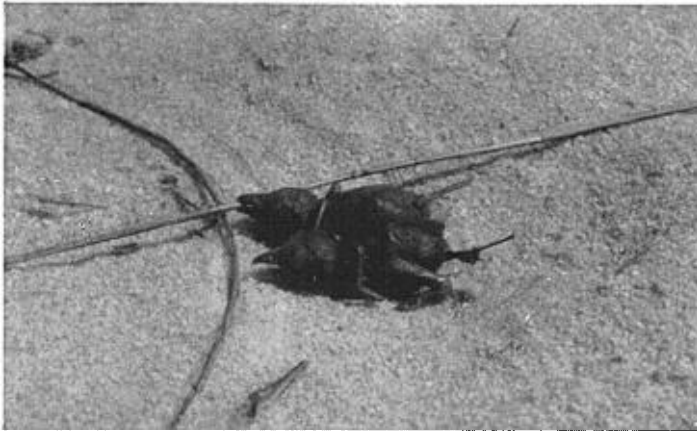


Fig. 18. Newly hatched Swallow-wings, August 21, 1949.

In all the burrows I opened (12 in all) the chamber at the end was lined with a few bits of dry grass on which the eggs were resting (fig. 17). The tunnel itself slopes downward slightly and has a length of 1 to 1.5 meters.

The eggs.—I have never found more than two eggs in a clutch, although the Penard brothers (*De Vogels van Guyana*, 1908:569-570) assert that sometimes three eggs are laid. This is not corroborated by other authors, nor is there a clutch of three eggs in their collection (*Hellebrekers, loc. cit.*); moreover, I rather doubt the statement as they had no field experience with the species. As there is variation in the measurements of the few eggs collected by me additional to that of the series in the Penard collection, I give here measurements of three sets of two eggs each and of one single egg:

November 9, 1947	24.6 × 20.6 mm.
	24.8 × 19.9
August 24, 1948	26.4 × 19.5
	25.0 × 19.4
September 4, 1949	25.3 × 21.3
	25.0 × 21.0
December 4, 1949	25.5 × 19.7

The weight of one fresh egg was 5.38 grams.

The young.—Newly hatched young are naked and black (fig. 18). Fully fledged young when excavated are very quiet, show a predilection for dark places, and do not try to escape (fig. 19).



Fig. 19. Fully fledged Swallow-wings in excavated nest burrow at Zanderij, September 18, 1949.

The Penard brothers (*loc. cit.*) remark that many burrows are flooded, which is possible, as the dry season in Surinam is not without rain. The young are also exposed to predation by snakes which enter the burrows. In each of two burrows I opened, I found a large toad.

Summary.—The Swallow-wing (*Chelidoptera tenebrosa*) is a common bird in Surinam in areas of sandy ground, especially in the savanna belt. The breeding season coincides more or less with the dry seasons; most nestings occur from July to December, but a few occur in March. The nesting burrows are excavated in level ground and in banks. The nest chamber is lined with a few bits of dry grass. The clutch consists of one or two eggs.

Paramaribo, Surinam, Dutch Guiana, January 3, 1950.