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Nesting behavior of the Chestnut-and-Black Weaver.—On 20 January 1965 near Ibadan, Nigeria, I noticed several male Chestnut-and-Black Weavers, *Ploceus nigerrimus* (Vieillot), beginning to construct nests about 10 meters above ground in the top of a clump of bamboo. Daily more males arrived at this nesting site until by 9 February approximately 110 nests had been built by as many males of this species. The exact count was never certain, but the impression conveyed was that each male built one nest, unaided by another weaver. Five nests were never completed; possibly these were begun by individuals that wandered away or abandoned the first attempt to begin anew.

At the beginning of nest construction no females were present, but by 1 February 10-20 were observed and by mid-February approximately 75 females were present.

Sexes are readily distinguished by color. In the male the head, throat, breast, wings, and tail are jet black; the back, mantle, rump, and belly are chestnut colored. The female is pale yellowish below and streaked with brown and yellowish-brown above.

The females, none of which participated in nest building, moved leisurely through the bamboo, at times perching on nests and occasionally entering one. They exhibited no aggressiveness among themselves and showed little apparent interest in the males. The latter, by contrast, kept up a frenzy of activity. This consisted of rapidly moving over the surface of the nest, then clinging upside down to the entrance on the underside of the nest with wings extended and fluttering rapidly. Chapin (*Bull. Amer. Mus. Nat. Hist.*, 75B, 1954) describes a similar activity on the part of males of the all black race of *P. nigerrimus* of the Belgian Congo, and Elgood (*Birds of the West African town and garden*, London, Longmans, 1960) has observed that the male Chestnut-and-Black Weaver exhibits an elaborate courtship display while hanging below the domed nest.

On previous occasions I had noticed this fluttering behavior briefly and wondered if

it functioned to send a current of air into the nest. But after many hours of observation, it seems to me most likely to be an example of gamosemantic display behavior. As long as the females are in sight, and at times when they are not present, the males spend a great deal of time in this wing fluttering. If a female alights on a nest the fluttering of the male increases in rapidity and he moves to one side of the entrance hole. If the female enters the male stops fluttering immediately and he may either perch on top of the nest or enter with the female. A female may enter several nests in succession, apparently without choosing one. In fact it may be 2 weeks or longer before a female accepts a particular nest.

An oil palm about 15 meters from the bamboo served as a favored perching place for the females while the males were building or fluttering at the nest entrances. Males of the Congo race of *P. nigerrimus* weave the outer surface of the nests while females add material to the inside (Chapin, op. cit.). During nest construction females were usually silent, but the males kept up a constant chorus of twittering. At times this twittering suddenly ceased for 10–15 seconds as if on signal, only to be resumed again. Also as if by signal the entire flock occasionally left in a mass flight, traveled about 100 meters distant and returned immediately.

Generally most building activity was before 1100 hours. The nests were almost completely deserted between noon and 1500 hours. Full scale nest construction began again about 1700 and continued for about an hour. It was the middle of the dry season for this part of Nigeria, and the average midday temperature was about 32°C with early morning temperatures running about 4°C lower.

Territory defended by each male consisted of the nest itself and about 30 cm of the branch from which the nest was suspended. Frequent wind currents kept the nests in almost constant motion from midmorning throughout the day. Often the nests swung close together and even touched without response by their owners, but if a male alighted on a branch and approached within about 30 cm of a nest not his own, he was promptly attacked by the weaver whose territory was invaded. This did not happen often and such intrusions seemed to be accidental.

Nest material of *P. nigerrimus* is composed mainly of grasses and strips of oil palm leaflets. The sturdy fibers of the latter greatly strengthen the nest. Persistent defoliation by this and other species of weavers often kills oil palms. The nest of the Chestnut-and-Black Weaver is irregularly oval in shape and completely inclosed except for the circular entrance at one end of the underside. The mechanism of construction is similar to that employed by the Village Weaver which has been described in detail by Collias and Collias (Auk, 79: 568–594, 1962.). The opening may face directly downward, or it may have a short lip extended along one side so that the nest hole is angled toward the opposite end of the nest. The egg cavity is in the end opposite the entrance. Eggs are blue, but the shade may vary widely, even on the same egg; they numbered 2–4 per clutch. I have found nests of this species containing either eggs or nestlings from early March through August.

Total egg laying capacity is unknown, but the following encounter provides some information. I found a colony of *Ploceus nigerrimus* nesting in low shrubs overhanging a small stream in June. Children from a village occupied by six farm families about 1 kilometer away regularly visited this colony to collect the eggs for food. I questioned them carefully and found that their practice was to remove eggs from the same nests three or four times, after which they allowed the weavers to rear their young without interruption.

The Chestnut-and-Black Weavers may build in colonies limited to this species, or they may share a nest tree with the common Village Weaver of this area, *Ploceus*

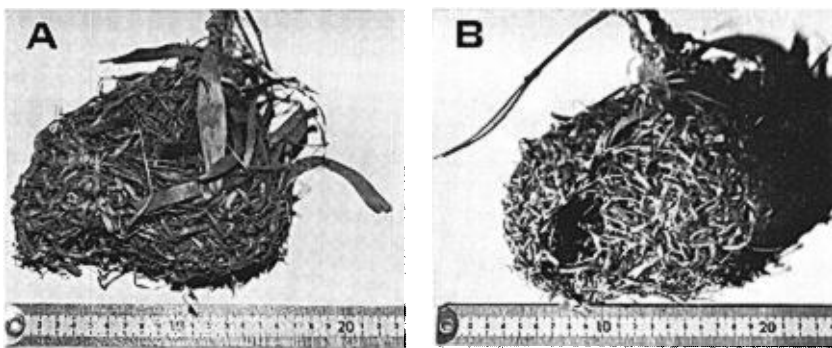


Figure 1. Lateral view of a single nest of the Chestnut-and-Black Weaver, *Ploceus nigerrimus*. B. The same nest viewed from below.

cucullatus (Muller). I have counted up to 300 nests of *P. nigerrimus* in one tree. They may build in a variety of broad-leaved trees, palms, shrubs, and, rarely, in tall grass. Chapin (op. cit.) observed males of the Congo race of *P. nigerrimus* sleeping in roughly constructed nests in elephant grass, used as dormitories.

On 10 February at 0645 hours I visited the previously mentioned nesting site in the bamboo. It was not light enough to distinguish between sexes, but a few of the weavers were leaving the nests where, apparently, they had spent the night. As no evidence of incubation was seen at this time, apparently these weavers may spend the nights in nests before incubation begins. This is common behavior with certain weaver species of the genus *Malimbus* which use their nests as roosting places for weeks, and sometimes months, before egg-laying and incubation.

In the bamboo one nest was suspended about 60 cm above a substantial branch that had no nest attached to it. A female perched on this branch and began rhythmically twitching her wings and tail feathers. The male from the nest above approached and she moved to the underside of the branch, appearing to avoid him. This routine was repeated several times, after which the female entered the nest directly above and remained for 5 minutes. During this period, the male clung to the outside of the nest, often peered inside, but did not enter and did not flutter his wings. When the female emerged, copulation occurred on top of the nest. At other times, copulation took place on the branch that supported the nest. Twice the male dropped to the limb below and, with wings slightly extended, began to quiver and vibrate rapidly, which gave him an untidy and roughed-up appearance.

Prior to acceptance by a female, this male commonly hung by his toes from the underside of the nest, wings fully extended and fluttering, while his body swayed with a pendulum-like motion so that his head transcribed an arc of fully 90°. This performance varied occasionally as the male stopped swinging and grasped the nest with his bill while continuing the wing-flutter. In the fluttering activities described, the wings are always fully extended and elevated slightly above the back. Sometimes the male hangs from a branch near the nest, but more often the performance occurs while he is attached to the underside of the nest. The males of *T. cucullatus bohndorffi* and *T. cucullatus collaris* also display while hanging upside down from their nests with wings extended and flapping and heads swaying from side to side (Chapin, op. cit.).—C. F. EAGLESFIELD, *Department of Biology, Hannibal-LaGrange College, Hannibal, Missouri 63401.*