

Sociable Weavers

(*Philetarius socius*)
BRED IN CAPTIVITY

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In nature the Sociable Weaver is restricted to arid and semi-arid southwestern Africa where the annual rainfall ranges from about 3 to 24 inches a year (Maclean, 1973). In the Kalahari Desert the temperature may range from 33°C (91.4°F) in summer down to -10°C (14°F) in winter (White, et al., 1975).

The species is noted for its giant communal nest, probably the most spectacular nest built by any bird. These nest masses, which may reach over 25 feet across, are usually placed in large acacia trees, and are built of dry straws, grass tops and fine twigs. The nest has often been likened in general appearance to "a haystack in a tree." Despite the large size of their nest, the birds themselves are smaller than a House Sparrow (*Passer domesticus*) which they superficially resemble. The species belongs to the weaverbird family (Ploceidae).

The immense compound nest is built by a group of birds, and the underside of a nest mass may contain 50 or more individual nest chambers opening downwards. The birds build on their nest and inhabit it the year around. Each pair, or family, defends its own chamber, but any of the birds may build on the communal roof. Details of nest structure and construction are given elsewhere (Collias and Collias, 1964, Maclean, 1973).

In nature, the birds breed after periods of rainfall, which are very erratic, and they may continue to breed long after the rains have ceased. The reproductive biology has been described in detail by Maclean (ibid). To the best of our knowledge no one has previously reared this species in captivity. Maclean (1967) tried to rear them in the Kalahari in their native habitat, and got them to hatch eggs but not to fledge.

In August, 1972, we received ten Sociable Weavers from the Kalahari Desert. We kept them in an indoor aviary for about two months. During most of the three years from the autumn of 1972 to the autumn of 1975, we kept the birds

in a large outdoor aviary (16 ft. wide, 30 ft. long, and 16 ft. high) at the University of California at Los Angeles. In Los Angeles the annual rainfall averages about 16.5 inches, and the temperature in the aviary ranged from a maximum of 41°C (106°F) to a minimum of 0°C (32°F) during these three years. The aviary was furnished with a framework of 2 x 4 wooden beams, which supported four boughs on one of which, *Doryalus kaffir* from South African, the ten birds almost immediately began to build a nest with straws, after being released into the aviary. This particular bough was almost 8 feet long and about 5 to 6 inches in diameter at its large end, and it had many side branches (Fig. 1). The birds were provided with nest materials consisting of dry straws and grass tops of various local grasses, especially of wild oats (*Avena fatua*). In general, they preferred dry, brown grasses with feather tops, a favorite being Smilo Grass (*Oryzopsis mileacea*). We also have them fine twigs which they added mainly to the roof of the developing structure.

Each bird was given two color bands on each leg in individually distinctive combinations, the same color combinations being used on both legs. The birds were fed on commercially available wild finch seed mixture (yellow, red and white millet, canary seed, niger, rape and flax) and canary seed mixture (canary seed, rape, and saffron), mealworms, and later on crickets as well. They were also pro-

vided with cuttlebone, crushed egg shell and a pan of drinking water in which we sometimes put vitamins (Avitron). After the young fledged we shifted to Vionate as a vitamin source.

The sexes are identical in appearance, and previous behavioral studies have been limited by the fact that the sex of the birds was unknown. We discovered that the male of this species has a distinctive song, and that the female does not sing. We found it very helpful in understanding the behavior of the birds to be able to distinguish the sexes. In spite of the sociable reputation of this species we found that some of the individuals were very aggressive, and we lost some birds as a result of intraspecific strife.

During the first few months in the aviary the birds were engaged in building their nest mass, and no eggs were laid until after the first four nest chambers had been built. The first eggs were laid in the middle of January, 1973. Four females paired with males and three of them laid eggs in separate chambers. The fourth pair was removed before they laid eggs because they were so aggressive they were endangering the other birds by keeping them out of the nest chambers at night. Both male and female incubate, and the eggs are apparently kept covered almost all the time. In one case a third bird, a male, was permitted to sleep in the chamber with a pair having eggs.

Los Angeles has its rains especially during the winter, and the first winter

Figure 1. The compound nest built in the aviary by the Sociable Weavers on a *Doryalus kaffir* bough.



was unusually cold and wet. Although some females continued to lay successive clutches of eggs it was not until early July that an egg hatched. This nestling died the day it hatched. During July, 1973, the birds stopped laying eggs for the rest of the summer and fall, but they continued to build and the size of their nest mass doubled in this period. The five surviving birds were then brought indoors for the winter and spring.

In June of 1974, in an attempt to control intraspecific strife we put only one pair into the same large aviary all the birds had occupied the year before. The female had been received while still in immature plumage, although she was now adult. This pair built five chambers, but did not lay any eggs until October. They then laid one clutch after another in the same chamber (Fig. 2) throughout the winter, and early spring of 1975. Almost all these clutches produced nestlings. Both parents fed the nestlings on mealworms and crickets. We gave them cuttlebone and occasionally tiny bits of egg shell. However, the nestlings in the first eight clutches all died before fledging, with the exception of one that perished on the day it fledged.

In May, 1975, we added a third bird to the aviary in an attempt to provide the birds with some social stimulation to breed, and in the hopes that an additional bird might help feed the young as has been reported by Maclean (1973) in nature. This bird, a male, which had once

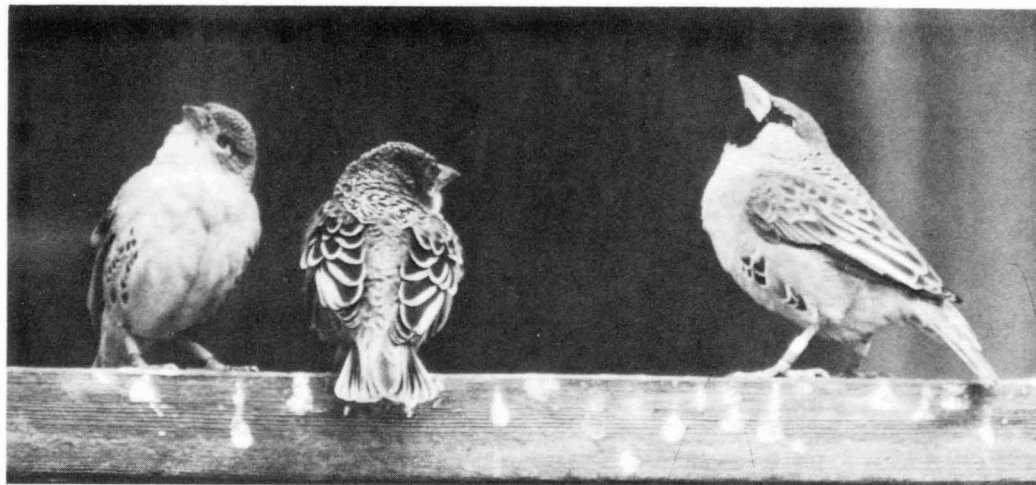


Figure 3. The mother Sociable Weaver (right) with two of her fledglings (left).

dominated the entire outdoor aviary was now itself completely dominated by the resident pair. In fact, he was very frequently attacked by the female which seemed to have a particular antipathy for this male. Nevertheless, the resident pair now bred successfully for the first time, and fledged four young in June, 1975. In this species the young take 16 to 18 weeks to acquire adult plumage, and can easily be told from the adults because they lack the black patch on the face, chin and upper throat that characterizes the adult (Fig. 3). The young also have a streaky crown rather than a uniformly brown one as the adults do. By the end of the third month after fledging,

the two surviving young had black lores, chins, and throats, but their crown still retained the streaky juvenile pattern.

As soon as these young had fledged the female started a new clutch of four eggs, her tenth clutch since the preceding October, and she began to incubate. In the meantime her mate took over the task of feeding the fledglings almost entirely (Fig. 4). He also began to build a new chamber adjacent to the brood chamber. This was the first new chamber built by these birds since the preceding autumn. The purpose of this new chamber became evident when the female began to exclude the young from sleeping in the original brood chamber where she now had eggs. In late evening the male led the young to the new chamber, which was only half finished and was only a shallow bowl. One of the young flew out of the chamber, failed to find its way back in the dusk, and spent the night on the ground. It died a few days later, possibly from exposure.

The other three fledglings survived to the point where they could feed themselves. The new set of eggs of the female were found broken on the ground, and this was to the advantage of the young ones which were now permitted to sleep in the original nest with their parents.

Unfortunately, in early July the father bird was killed, and judging by the signs, was apparently the victim of an attack by a snake. King snakes (*Lampropeltis getulus*) are not rare in the area and have been occasionally seen and caught in the aviaries. A few days before their father's death, the three fledglings became able to feed themselves, about two weeks after fledging. The fledglings often followed the parents about, begging from them. Apparently they learned to feed themselves by closely watching the adults.

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Figure 2. The entrance to a brood chamber viewed from below.





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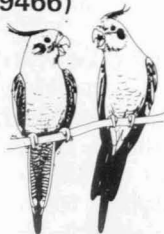
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and then pecking at the same types of food the adults took, whether grain, mealworms or crickets. When their mother pecked at and ate cuttlebone, two of the young ones did likewise, right after their mother did so. At first, the young ones would pick up and drop a mealworm on the ground or food hopper repeatedly before managing to hold and swallow it. After they were able to readily feed themselves on mealworms and grain, they were for some time unable to dismember and eat a whole cricket as the adults could do.

Even after they could feed themselves these young were not able to carry nest materials to the nest mass and fasten them there. Not until a month after it fledged was one young one seen to carry a piece of nest material, a grass head, from the ground to the nest mass, where it deposited it inside the brood chamber.

they also spent subsequent nights with their mother.

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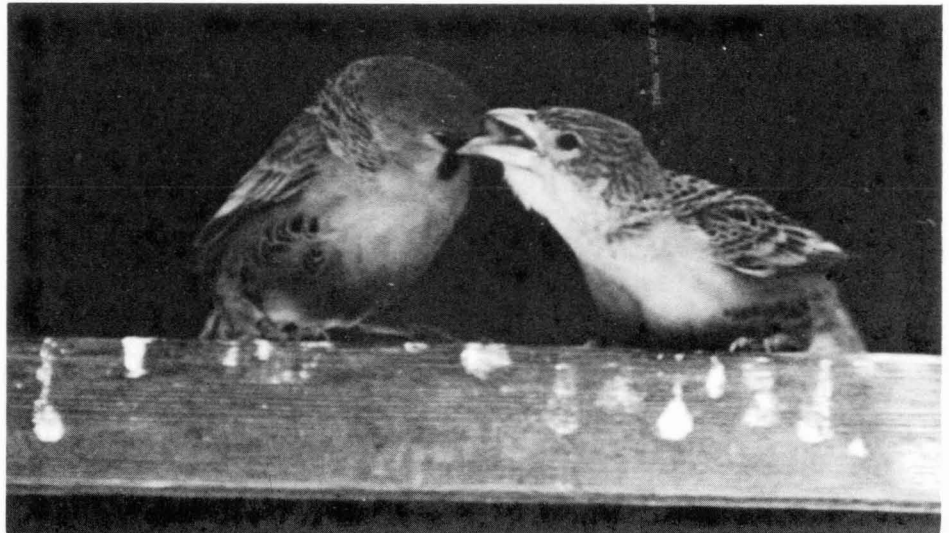


Figure 4. The male Sociable Weaver feeds an insect to one of the fledgings.

After the death of the male parent, the introduced male attempted to pair with the female, and, in fact, once was seen to copulate at her invitation. At about that time he began to attack the young birds, even though the female generally defended them from his attacks, and she still dominated him. His attacks on the young were particularly frequent and severe just before and during dusk when they attempted to enter the brood chamber at night to sleep. He finally succeeded in excluding them, and they had to spend the night on the twigs above the roof of the nest, where they were exposed to the cool night wind. The adult male and female spent the night in the brood chamber. The next day we removed this adult male from the aviary for the safety of the young birds which promptly returned peacefully to the security and warmth of the brood chamber, and where

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