

the egg either steps off the egg so the second bird can incubate, or else the newcomer pushes the incubating bird off the egg and then takes over care of it. No elaborate ceremony occurs. The relieved bird generally flies away within a few minutes, presumably to drink, but often returns to the scrape and lingers for several hours or more before leaving Bush Key. Sometimes this bird forces its way back onto the egg so several exchanges occur before the new bird finally takes over and the other leaves the island. I never saw an adult feed another one at a nest exchange during incubation.

Although I saw some exchanges in midday (Table 4), most birds return to the colony in the evening and relieve their mate then. Instead of circling near Bush Key as they do earlier in the nesting cycle, returning adults fly directly to the island and presumably to their scrape. The number of hours I watched in early evening is much smaller than for other times. Otherwise I certainly would have seen more exchanges then.

At Bush Key few adults regurgitate when mist-netted in the morning or early afternoon, but many do so in the late afternoon, indicating they just returned from foraging. The exchanges I saw around sunrise may have been pairs making a final exchange after several exchanges during the night, and the relieved bird was at last leaving to feed. Much as when the colony is forming, the noise gradually diminishes and by about 08:00 few birds are in the air. Those that remain at the colony generally incubate quietly from about 08:00 to 16:00.

Ashmole (1963) found nest relief most frequent between 21:00 and 06:00. He reasons that arriving at that time means that they fed during daylight and then flew some 5 to 8 hours to arrive at the colony in the middle of the night. I have no records of changeovers from 21:00 to 06:00, but the massive influx of terns early in the evening suggests that changeovers are commoner then than late at night as they are on Ascension Island. If Ashmole's reasoning holds, then Bush Key Sooties feed within a few hours flight of Bush Key at most and can return quickly when finished feeding.

LENGTH OF INCUBATION SHIFTS

To determine the length of incubation shifts (the length of time one adult cares for the egg without relief), I recorded which adult incubated each day for 13 of the nests on which I kept activity records. I found that the bird present in the morning usually remained there until at least late afternoon. Because most adults seemed to return and exchange in early evening, I assumed this was true unless I had evidence to the contrary. I may have missed a few exchanges, but the pattern I found is generally true of incubation shifts at Bush Key. Watson (1908) also notes that most Dry Tortugas Sooties return in the evening and that incubation shifts generally are 24 or 48 hours long.

Of 231 incubation shifts computed as multiples of 1-day periods, 148 (64.1 percent) were 1 day in length, 70 (30.3 percent) were 2 days