

possibly has some relevance to nesting, something also suggested by behavior I noted at the scrape itself.

Often during the hot midday hours, I saw a single bird fly from its egg, not in a panic, and head toward the water (Table 3). After about a minute it returned, flying low and rapidly toward the scrape. As the bird settled back on the egg, I often could see that its bill, feet, and sometimes the breast feathers were wet. Obviously these direct flights from the egg were the start of the dipping flights that I watched over the water. As dipping is most common when the day is hottest, it seems possible that this behavior is thermoregulatory, both for the adult and the egg. As both sexes dipped with equal frequency (139 to 137), I combined their records. Dipping by incubating adults is most frequent during the first 15 days of incubation (Table 3).

Watson (1908) mentions an activity similar to dipping but says the terns were bathing. The Ashmoles (1967: 62) note that incubating Sooties sometimes fly off to drink. Brian Harrington (pers. comm.) has seen Sooties dip at Johnston Island in the Pacific but less frequently than at the Dry Tortugas. Simmons (1970) also noted aerial drinking by Sooties at Ascension Island. Both Tompkins (1942) and Hardy (1957) report Least Terns dipping their breast feathers during incubation and suggest that it provides water necessary for the eggs.

TEMPERATURE REGULATION

Howell and Bartholomew (1962), working on Midway Island in the Pacific, show the delicate role that parental care plays in preventing Sooty Tern eggs from approaching the high and probably lethal temperatures they would reach in open sunlight. On Midway the adult terns maintain the egg temperature above that of the surrounding air and below that of the surrounding sand, but it is not stated whether the adult is incubating or shading the egg.

I attached thermisters to several eggs and monitored surface temperature of the egg and air temperature at about 4 inches above the ground for parts of several days. Unfortunately the eggs I worked with were close to my blind, and the adults caring for them were easily disturbed by my movements. Also the wire attached to the egg hindered the tern in turning it and affected the bird's behavior.

I obtained useful information from a 24-day-old egg on 8 June and conflicting information from the same egg the next day. On 8 June, in 23 temperature readings taken between 10:20 and 13:05, the egg averaged 101.5°F (range 99 to 105°F), and the air at 4 inches averaged 105.5°F (range 103 to 108.5°F). The highest egg temperatures occurred when the adult left it to dip or flew off in a panic. In both cases the adult dipped the breast feathers before returning to the egg. The next day in 35 readings the egg temperature averaged 105.2°F, somewhat above the air temperature that day (105°F) and 3.7°F above the egg's