

for the time periods indicated were attained between 4:00 and 5:00 PM (Table 7). Cloacal temperatures of *Pseudemys scripta* in Panamá similarly varied with time and changing water temperatures throughout the day (Moll and Legler 1971). The few records available for midday are highest of all cloacal temperatures recorded from *T. coahuila* within marshes. The paucity of records during these intervals seems to reflect a lowered level of box turtle activity.

Mean cloacal temperatures slightly lower than surrounding water temperatures in morning hours, and higher than water in afternoon, may indicate a lag of cloacal temperatures in comparison to progressively increasing or decreasing temperatures of the water through the day. Baldwin (1925) recorded a lag in cloacal temperatures of 1.5 to 3.0°C when aquatic turtles of several species were exposed to changing water temperatures.

In *T. coahuila*, a greater range of variation in both cloacal and water temperatures in morning than in the afternoon (Fig. 9) suggests more variable microclimatic conditions in marshes in the former period, and is a partial result of turtles at widely-varied stages of warming.

Ten cloacal temperatures were taken from turtles collected from pools of the Río Mesquites (Fig. 6) in July and August 1965. All were recorded in late morning or early afternoon, and temperatures of both water and cloacae were high. On 30 July, under overcast conditions, water temperatures were near 33.0°C; cloacal temperatures of five turtles ranged from 31.4 to 33.6°C.

Sinkholes (Fig. 5) are generally fed by thermal springs and have the highest water temperatures of all aquatic habitats sampled. Two in the study area ranged from 30.9°C in January 1966 to 34.7°C in October 1966 (mean of six records, 32.1°C), and from 32.8°C in January 1966 to 34.2°C in July 1966 (mean of six records, 33.5°C). Temperatures in these habitats are probably always above 30.0°C throughout the year. On 31 July 1965 a female registered 34.1°C, the highest voluntary cloacal temperature of any *T. coahuila* recorded while in water (34.0°C). Two other cloacal temperatures of turtles in posos (August 1965) were 33.4°C and 32.1°C, each 0.1° above the water temperature. Another individual seen 14 October 1966 in a sinkhole (water 34.0°C) was not caught.

*T. coahuila* on sedge tussocks within marshes, at the edge of a marsh, or in the grassy terrain away from water, provided an opportunity to note the effects of a thermal environment uncommon to *T. coahuila*. A female on 6 July 1965 at 6:15 AM on a dry sedge clump, had a cloacal temperature of 20.3°C (air 21.4°C); her lower temperature presumably reflected the cool soil beneath her. Another female at the edge of a marsh the previous day at 6:30 AM had a cloacal temperature of 21.8°C