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AN EXPERIMENT WITH HOMING IN ORNATE BOX TURTLES (*TERRAPENE ORNATA ORNATA* AGASSIZ)

In a previous paper (Metcalf and Metcalf, 1970:111) we reported results of homing by *Terrapene ornata ornata* transported from distances up to 1.85 km to a "study area." The study area comprised a farmyard in southeastern Cowley County, Kansas and turtles were transported mainly from roads located north, east and west of the study area. Although 82 of 434 turtles (18.9%) homed at least once, none travelled more than 1.07 km except one adult female that homed 1.66 km. The objective herein was to see to what extent homing might occur at greater distances than before

In the summers of 1970 to 1972, 100 turtles were collected along the roads shown in Fig. 5 of Metcalf & Metcalf (1970) and displaced various distances along roads where it seemed that the best possibilities existed for subsequent observations. Twenty-five individuals were displaced each at distances of 1.6, 2, 2.4 and 2.8 km. Twenty-six turtles were displaced south, 19 east and 55 west of their original points of capture. None were transported to the north as no roads led in that direction. All turtles were 80 mm or more in plastral length. Sixty males, 39 females and one juvenile were displaced. The distances involved are surely not all comparable as the home range of individuals may or may not have extended in the direction in which the turtle was displaced. Our observations indicate that home ranges in this area typically comprise extreme distances less than 0.4 km and often less than 0.2 km.

Of the 100 turtles displaced, 18 were retaken near the point of original capture (= homed). One female and four males homed 1.6 km, four females and five males 2 km, two females 2.4 km and one female and one male, 2.8 km. The least time recorded between times of release and recapture was 31 days (Male 414, 1970). Of the 18 returnees, two had been transported south, 13 west and three east.

In addition to the above 100 turtles, three were displaced 3.2 km. One of these (554), a male that had previously homed 2 km in 1972, was displaced on 12 August 1974 and was retaken in its home range on 5 May 1975.

Previously we noted (1970:113-115) that some turtles remained where displaced even when distances of less than one km were involved. Of the 100 turtles displaced in this experiment a few showed evidence, through recapture, of remaining where transported and a few others seemed to have returned only part of the distance home. Thus, Turtle 576 was displaced 2.4 km S in 1971 and was found dead in 1973 on a road half way between its points of original capture and of release. Another turtle (856), displaced 2 km E on 12 July 1971 was found at a place 0.48 km in a homeward direction on 20 July 1972.

A few recaptured turtles had moved in ways seemingly not related to homing. Turtle 256 was displaced 1.6 km S on 10 July 1971 and was found on 20 August 1972 0.8 km W of its point of release.

It seems that some ornate box turtles are more proficient at homing than are others. Although some will home at least 2.8 to 3.2 km, others do not home even one km and some seem to forsake both original and new homes. Although females comprised only 39% of the 100 turtles displaced, they comprised 53.8% (7 out of 13) of those that homed more than 1.6 km. Since fewer turtles homed at the 2.4 and 2.8 km distances it seems likely that there is diminished ability to home at the greater distances involved in this experiment. That more returnees were obtained from 2 km than from 1.8 km is puzzling and seems likely attributable to chance or to the possibility that the sample displaced 2 km contained more turtles with homes in areas preferentially visited by observers. To what extent *T. o. ornata* can home at distances beyond 3.2 km is yet to be determined.

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NOTES ON *AGKISTRODON BILINEATUS* (REPTILIA, SERPENTES, VIPERIDAE) IN BELIZE

Hoevers and Henderson (1974) reported the first specimens of *Agkistrodon bilineatus* to have definitely come from Belize, Central America. Unfortunately, however, their two specimens from Santa Cruz, Corozal District were badly damaged before color descriptions could be made. They suggested that the Belize specimens could probably be assigned to Gloyd's (1972) *A. b. russeolus* and Henderson and Hoevers (1975) implied the same thing.

Recently, through the courtesy of L. E. Dieckmann, S. J., of Belize City, I had the opportunity to examine the third specimen of *A. bilineatus* to be taken in Belize. It was collected in November 1976 at Orange Walk Town, Orange Walk District by Mr. Charles Emond and is in the collection of Saint John's College, Belize City. The snake is poorly preserved and in four pieces, but some scale counts and color notes were made. It is a female with SVL of ca. 380 mm; upper labials 8-8, lower labials 11-11; scale rows 23-23-19; 57 subcaudals with first 22 entire and the rest divided. Crown and sides of head chestnut brown; a thin white line bordered with black starts at the top of the rostral, crosses the supralabials and descends at the neck region; a second black-bordered white line is broken along the tops of the lower labials and has three similarly colored oblique lines which extend to the gulars; the rostral is pale chestnut brown with a white Y-shaped mark; mental, lower labials, gulars and chin shields are heavily marked with black-bordered white marks; the dorsum is overall chestnut brown with obscure darker brown markings giving a faintly banded effect; the venter is overall pinkish grey heavily flecked with small white marks outlined in black, but posteriorly the flecks are restricted mostly to the outer edges of the ventrals; the distal portion of the tail is greyish yellow with faint, narrow bands.

The lower intestine contained a mass of mammal hair.

This snake resembles *A. b. russeolus* in some diagnostic characters but differs in others, most notably in the white lines on the side of the head and dorsal coloration.