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COURTSHIP BEHAVIOR IN *RHINOCLEMMYS AREOLATA* FROM WESTERN TABASCO, MEXICO (TESTUDINES: EMYDIDAE)

Gonzalo Pérez-Higareda¹ and Hobart M. Smith²

ABSTRACT.—Observations in nature and captivity reveal that members of the population of *Rhinoclemmys areolata* of western Tabasco, México, exhibit underwater courtship and mating and appear to lay one egg per nest.

Reports on the habits of turtles of the genus *Rhinoclemmys* are few. Courtship behavior has been noted in *R. annulata* (Mittermeier 1971), *R. funerea* (Iverson 1975), and *R. pulcherrima incisa* (Hidalgo 1982). Curiously, data on courtship in *R. areolata* are little known, although the species is not rare, having an extensive distribution from Guatemala and northern Honduras northward on Atlantic slopes to central Veracruz, México; it is most abundant on Isla Cozumel, Quintana Roo (Smith and Smith 1979). The species inhabits savannas for the most part and has terrestrial or semiaquatic habits (Smith and Smith 1979, Pritchard 1979). Its activity has been observed principally during summer rains in northern Chiapas (Alvarez del Toro 1982) and in Cozumel Island (R. C. Vogt, personal communication).

Distinctive characteristics of two different populations of *Rhinoclemmys areolata* are pointed out by Pérez-Higareda and Smith (1988). One of these populations, essentially aquatic, is found in the swamps and rivers of western Tabasco from the north central part of the state to the border of southern Veracruz (Río Tonalá). Its courtship and mating behaviors are different from those of the populations of the Yucatán peninsula, northern Chiapas, eastern Tabasco, and central western Veracruz, all with terrestrial or semiaquatic habits (Mittermeier 1971, Iverson 1975, Hidalgo 1982, Pritchard 1979, Smith and Smith 1979, and personal observations by GPH).

The observations reported here were made in the field and in captivity. One pair (male and female) was observed in April 1983 (GPH) in the Río Tonalá on the border of Veracruz

and Tabasco, near the municipality of Agua Dulce, Veracruz, as courtship and mating took place underwater at a depth of approximately 25 cm. Similar behavior was observed (GPH) in another pair at the same place in May 1984 in water approximately 0.5 m deep. Both pairs were collected and kept alive in a garden provided with a pond. Subsequent aquatic courtships and matings were observed there in March, April, and May 1985; all were carried out underwater (40 cm in depth), none on land.

COURTSHIP (Fig. 1).—Males had no difficulty recognizing females underwater. They approached and began to sniff around the cloaca of the female. If the female accepted the courtship, she walked on the bottom of the stream or pond, and the male walked behind her (Fig. 1a). Sometimes the female repelled the courtship, vigorously biting the head of the male. In such instances the male then retreated and began swimming around the female (Fig. 1b). The female meanwhile remained stationary on the bottom, her head almost hidden. The male again sniffed around the cloaca (Fig. 1c). If the female accepted his second approach, she stretched her neck and opened her mouth, while the male swam speedily above her, staying some distance in front of her and hiding his head (Fig. 1d). The female approached him, stretched her neck, and searched the nose of the male with her mouth open (Fig. 1e). The female hid her head, and then the male stretched his neck and rubbed her nose with his for a short period, not exceeding 15 minutes (Fig. 1f).

MATING (Fig. 2).—The male moved quickly to position himself above the female,

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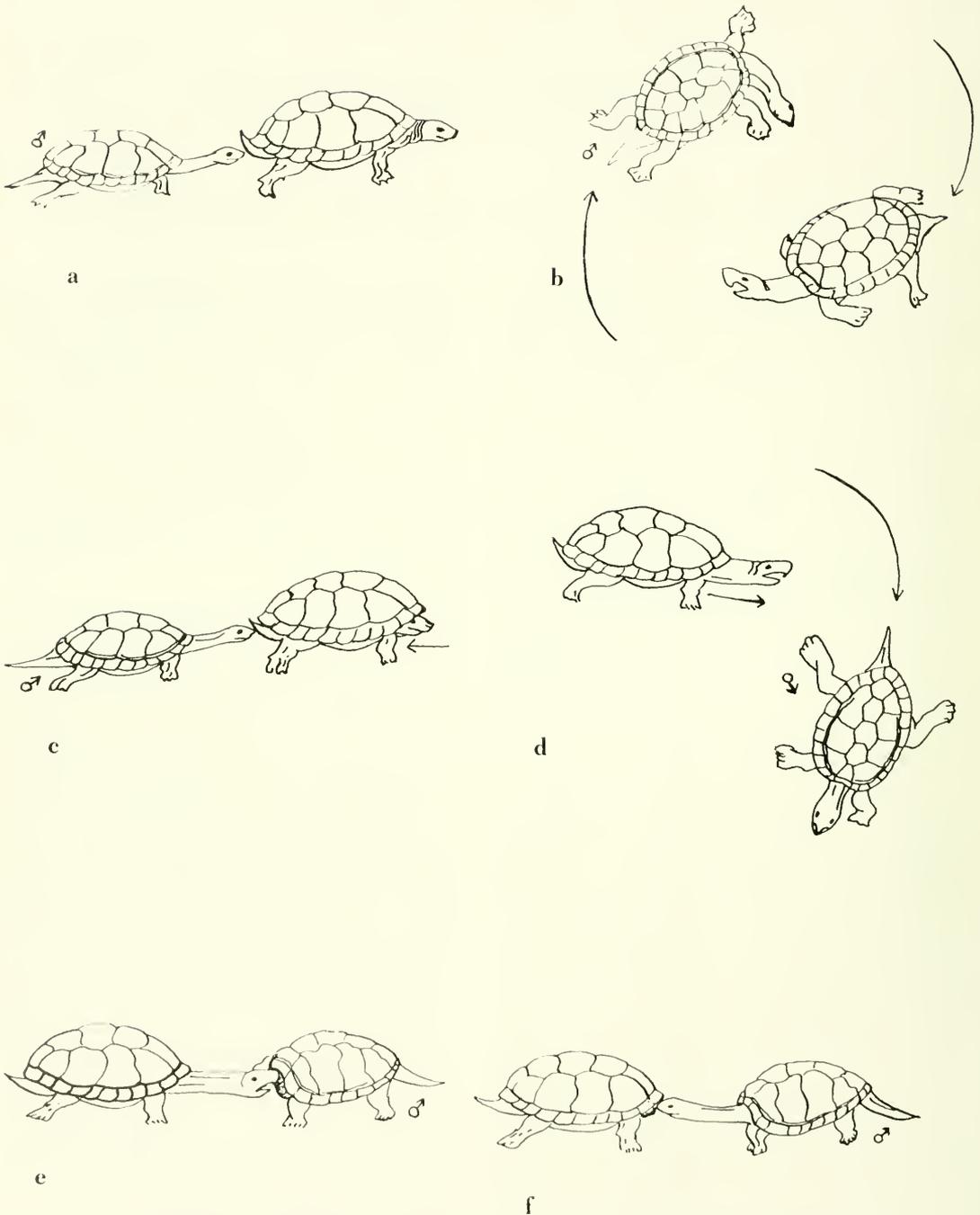


Fig. 1. Phases in the observed courtship behavior of the aquatic subspecies of *Rhinoclemmys arcolata*.

stretching his neck to rub nose to nose; this action was sometimes repeated once or twice more (Fig. 2a). Afterwards, the male slipped backward, curling his tail around the tail of the female. The female stretched and retracted

her neck once or twice (Fig. 2b). When the penis was inserted in the cloaca of the female, the male released his grip on the female, his body essentially free although still united to her by the tail (Fig. 2c). The female, her hind

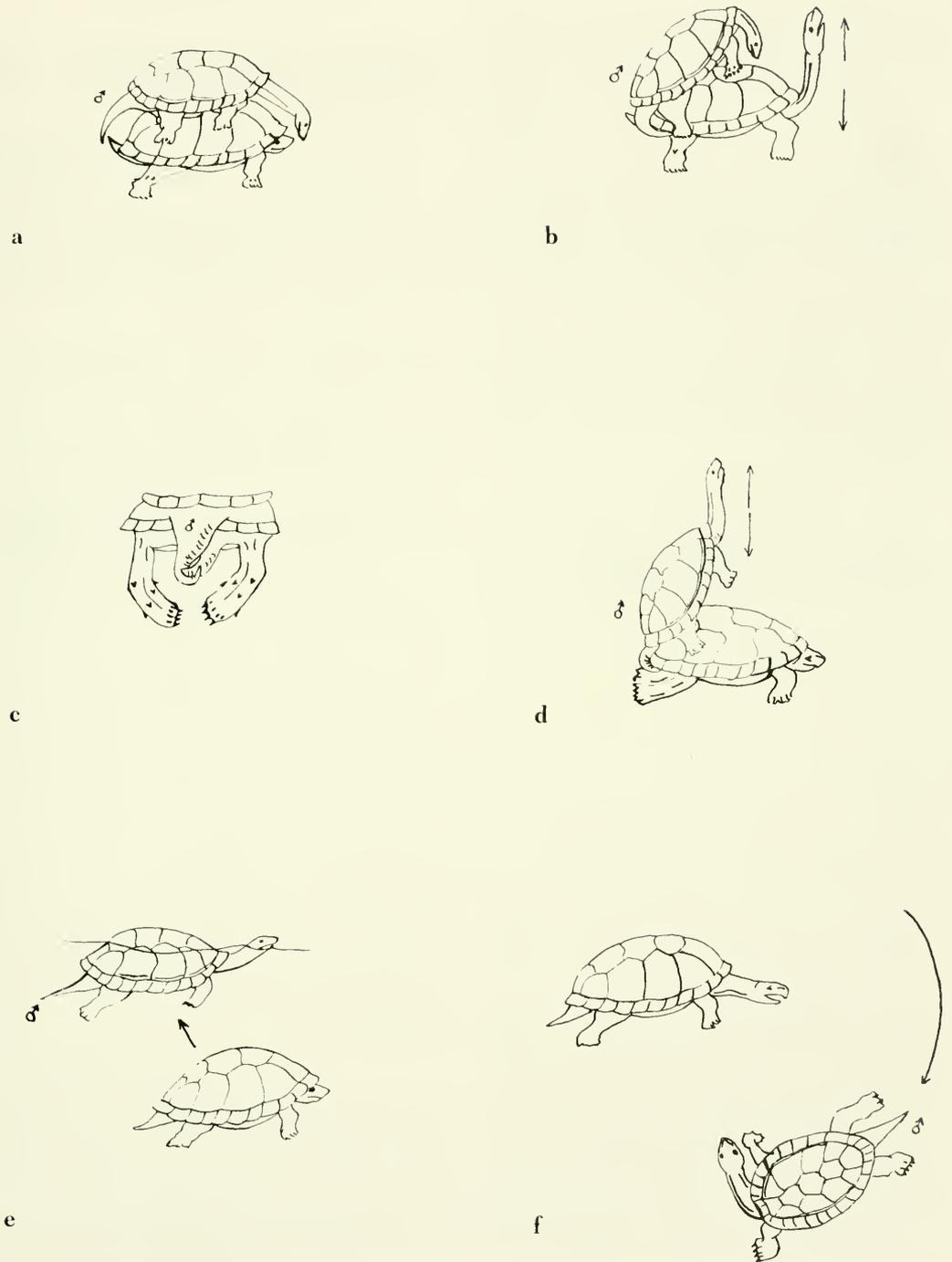


Fig. 2. Phases of the observed mating and postmating behavior of the aquatic subspecies of *Rhinoclemmys areolata*.

limbs outstretched, remained motionless while the male rhythmically protracted and retracted his neck for 25–40 minutes (Fig. 2d). When coitus ended, the male separated

and floated; the female remained on the bottom (Fig. 2e). Sometimes the male tried to free himself, but the female stayed attached by the tail, trailing him. Usually after mating

the female was aggressive toward the male; in such cases, he retreated a long distance from her (Fig. 2f). The maximum observed duration of mating was 45 minutes.

NESTING DATA.—We do not have complete information about the nesting customs of *R. areolata* in a natural environment, but one of us (GPH) observed a specimen ovipositing at the edge of a swamp near Villahermosa, Tabasco, in July 1985. The female was laying one egg and covering the hole on land near a swamp. The specimen was captured when it abandoned the nest and was walking to water; she was kept alive in a small garden. After a week she laid a second egg in a depression she dug, and at five-day intervals laid one more egg in each of two different nests. None of the eggs hatched.

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