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The Jalisco Mud Turtle, *Kinosternon chimalhuaca*, in Northern Nayarit, Mexico

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For many years a kinosternid turtle has languished unidentified in the herpetological resource collection of The University of Texas at El Paso (UTEP). The specimen was obtained during field activities of a seven-man crew that visited several sites in northern Mexico in the summer of 1962 (trip alluded to by Milstead and Tinkle 1967).

Around noon on 23 August 1962 we checked into the Hotel Plaza, Acaponeta, Nayarit. Crew members (except Milstead [sick in bed] and Webb [curating backlog of specimens]) left Acaponeta at 1330 h and traveled south on Highway 15, returning at 1830 h. The prime objective, to obtain topotypic *Terrapene nelsoni,* was unsuccessful, but the trip culminated in the capture of three hand-collected kinosternid turtles given to me by D. Tinkle. The three *Kinosternon* included two *K. integrum* (UTEP 3906–07) and the unidentified *Kinosternon* (UTEP 3908). The locality for the three UTEP turtles was recorded as 6.8 mi (11 km) south of Acaponeta, which is about 217 air km north of the northernmost locality of *K. chimalhuaca* (21 km S Puerto Vallarta; Berry et al. 1997:334, 336). The capture site as described by the collectors was along Highway 15 at a roadside flooded grassy area said to have aquatic vegetation, suggesting a permanent pond (but may have been seasonal depending on rainfall). The quiet-water pond site is concordant with the preferred habitat of *K. chimalhuaca*. In this article I tentatively assign this specimen to *Kinosternon chimalhuaca* (Berry et al. 1997; reviewed in Iverson and Berry 1998). However, some morphological differences between UTEP 3908 and those of *K. chimalhuaca*, perhaps significant, exist (see below).

The northern Nayarit *Kinosternon* (UTEP 3908) is a juvenile female (based on short, small tail) with maximal straight-line measurements (Vernier calipers) of 87.3 mm (carapace length, CL), 63.7 mm (carapace width, CW, juncture second and third costals), 70.2 mm (plastron length), and 22.6 mm head width. The carapace is widest posteriorly and shows no carination. The anterior vertebral scute is narrow, well separated from contacting the second marginal scutes. The tenth marginal is slightly higher than the ninth and eleventh marginals. Character codes relating to plastral features used by Berry et al. (1997) are AHW 38.4 mm, BRL 11.0 mm, FEL 11.2 mm, HL 31.4 mm, and PHW 30.8 mm; values for two of their derived ratios, PHW/CW 0.48 and BRL/CL 0.13 (Berry et al. 1997), are extreme, suggesting a narrower posterior lobe of the plastron and narrower bridge in UTEP 3908. The head width/CL of 25.9% also suggests a wider head (Berry et al. 1997). The axillary and inguinal scutes are in broad contact (both sides), but their compactness and reduced contact with marginals seems significant compared to UTEP 3917–18, 3900 (= *K. chimalhuaca*, cited in Berry et al. 1997); the axillary contacts most of the fifth marginal/anterior part of sixth, the inguinal most of the sixth/anterior part of the seventh marginal. There is no anal notch.

The overall dorsal coloration (in life, Webb field notes) of the soft body parts was grayish, but finely marked with buff or yellow-orange. This same pattern occurred on top of the head with more yellow-orange (brighter pattern) on the side of the head (similar to pattern of turtle depicted in Berry et al. 1997). The chin (with one pair of smallish barbels), throat, and soft body parts in the inguinal regions were pale yellow, and the underside of the neck whitish. The ventral soft body parts were mostly flecked with gray. The carapace was dark olive; the bridges, edges of marginals, and plastron were orange-brown.

The most notable differences from the description of southern *K. chimalhuaca* are the much smaller plastron, narrower width of posterior plastral lobe at posterior hinge (PHW), narrower bridge (BRL), configuration of the axillary and inguinal scutes, and the absence of an anal notch. Some differences of UTEP 3908 may reflect juvenile rather than adult features (smallest mature female 99 mm CL; Berry et al. 1997). The possible geographic consistency of these features of a population in northern Nayarit remains to be determined. The coastal lowland habitat and north-south continuity of *K. chimalhuaca* may be interrupted by the elevated western extent of the Transverse Volcanic Range (Neovolcanic Plateau) that is abruptly precipitous to sea level in the Tepic area of Nayarit.

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Silent Auction Returns to Indianapolis

The SSAR Silent Auction will be held again this summer at the annual meeting of SSAR/HL in Indianapolis. Throughout the meeting, herpetology-related artwork will be on display in a central location so that everyone in attendance will have an opportunity to bid on each piece. At the end of the meeting, each piece will be sold to the highest bidder. Funds generated from the Silent Auction are used for SSAR Student Travel Awards. Therefore, SSAR student members need your help! You are invited to donate a print, photograph, line drawing, plate, engraving, or other frameable artwork to the auction. Last year, over $2000 was raised by the Silent Auction to defray travel costs for graduate students presenting papers or posters at the annual meeting. We would like to uphold or surpass the efforts of previous years so that more graduate students may be able to participate in our annual meeting. All donations are tax deductible (for U.S. residents) and more importantly, will provide a financial boost to rising herpetologists. To donate an item or for more information, please contact: *Scott Boback, 331 Funchess Hall, Department of Biological Sciences, Auburn University, Auburn, Alabama 36849-5414, USA; e-mail: bobacsm@auburn.edu.*

TECHNIQUES

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Teflon Tubing as Radio Transmitter Belt Material for Northern Leopard Frogs (*Rana pipiens*)

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Techniques for securing radio transmitters to anurans have included the use of belts made of polyethylene tubing (Bartelt and Peterson 2000) or of beaded chain (Rathbun and Murphey 1996). Both of these designs have been used with success, but also have resulted in some incidence of injury and entanglement of the study animals. Here I present a new material for radio transmitter belts that is potentially less injurious to frogs.

Teflon tubing (TT250/22-25-GRN, Manhattan/CDT/Cole-Flex and Thin Wall Teflon Tubing, Alpha TFT 200 22 NAT) was used to attach radios to *Rana pipiens* at the Creston Valley Wildlife Management Area, near Creston, British Columbia, Canada, in 1998 and 1999. The radios were made by Holohil Systems Ltd. (112 John Cavanagh Road, Carp, Ontario, K0A 1L0, Canada), models BD-2G (1.8 and 3.5 g) and BD-2 (1.3 and 1.0 g), and by AVM Instrument Co. Ltd. (2356 Research Drive, Livermore, California 94550, USA), model SM1 (2 g). Radios were less than 7% of the frog's weight and were built to operate for 9–26 weeks. The tubing was fitted to the frogs such that the loop slid snugly over the adpressed thighs, and was tied using cotton thread pulled through the tubing. Cotton thread should allow unrecovered radios to fall off the frogs when the thread rots and breaks. The frogs were generally caught on shore close to water, in moderately thick reed canary-grass habitat. The pattern of spots on the dorsal surface of the frog was photographed and sketched for later identification.

The effectiveness of Teflon tubing radio transmitter belts was examined with a total of 24 frogs in the field. In 1998, I placed radio transmitters on 13 male frogs, from 23 September to 30 October. There were 189 frog-days of telemetry, with 110 observations of frog locations. In 1999, three males were fitted with radios in June and eight females in September. There were 23 frog-days of telemetry in the summer (10 observations) and 123 frog-days in the fall (to 31 October, 50 observations). To monitor the effects of the belts, frogs were recaptured about every 10 days and their condition recorded.

Most of the frogs did not move more than 100 m during the period they were monitored, and by the end of October all were found along the edges of deeper water bodies. Three radioed frogs went underground into small mammal burrows near the water's edge, and apparently spent the winter there; the belts did not seem to limit the mobility of these frogs. Although there was no evidence that the belts significantly restricted the movements of the frogs, on two occasions I observed a frog trying to back into vegetation under water, and this movement was briefly impaired by the radio unit.