

the generic level (Auffenberg 1963), at least since Oligocene time.

On the basis of morphological similarity, and even intermediacy in some cases, the genus *Gopherus* is believed to have evolved from an early member of *Stylemys*, probably in western North America during the Late Eocene. The genus *Gopherus* is, and has always been, restricted to the Nearctic Realm. Its failure to migrate over Cenozoic land bridges to either Asia or South America was probably due to ecological factors.

The salient morphologic characters of the genus *Gopherus* are: a continuation of the palatal vomerine ridge upon the premaxillaries at their symphyses; short cervical vertebrae with an articular arrangement considered normal within the cryptodires; length of hypoplastron and hyoplastron about equal; forelimbs and claws flattened and widened; antibrachial scales juxtaposed, flattened, and broad; head scales small, flat, and rounded; eyes moderate in size; usually a single, large supra-caudal shield; alveolar surface of the upper jaw with an inner ridge running parallel with the cutting edge; alternate anterior neurals usually octagonal; anterior palatine foramina small; distal and proximal ends of humerus considerably expanded; tail very short; caudal vertebrae short and broad, without aberrant processes; skull wide, with a well developed post-orbital bridge, quadrate enclosing stapes; pro-otic exposed; shell broad, moderate in height; costal scutes low and broad; vertebral scutes wide; nuchal scute usually as wide, or wider, than long; hind foot short, elephantine, with short metatarsals; tibiae and fibulae usually fused; carpus with a distinct proximal centrale, at least in the young, but often fused with an adjacent centrale in adults.

At the present time the genus is comprised of four allopatric populations that have long been considered distinct at the species level. The relegation of these populations to subspecific rank (Gray 1873; Mertens and Wermuth 1955) implies a degree of morphological similarity and an evolutionary history that is not consistent with our present knowledge. As will be shown below, the four Recent populations are morphologically distinct, although their superficial similarities often obscure important differentiating characters. Furthermore, fossil evidence based both on distinctness of form and at least partial overlap of geographic range during the same geologic period (Sangamon Pleistocene) suggests that the populations are distinct at the species level, and that they have been genetically separated from one another for a considerable length of time (Auffenberg, study in progress).

Hybrids resulting from a cross between captive *Gopherus agassizi* and *Gopherus berlandieri* have been described (Woodbury 1952; Mertens 1964), but the origin of at least one of the parents was uncertain