

OSTEOLOGICAL RESUME OF THE RECENT SPECIES

THE SKULL

Among testudinine turtles *Gopherus* has been recognized as possessing a distinctive skull, and it was on this basis that Gray (1873) established the Tribe Xenobatiana. It presents a complex of both primitive and specialized structures. The unique median premaxillary ridge is shared with the extinct genus *Stylemys*. In *Gopherus* the exposure of the pro-otic varies from completely visible to completely covered. An exposed pro-otic is generally considered a primitive condition (Loveridge and Williams 1957). An *Os transiliens* has been reported in all extant species (Ray 1959; Legler 1962; and Bramble 1974). The prefrontals are short (specialized), but still enter the orbit (generalized). The reduced postorbital in this genus is believed to be a specialization. The temporal region is broadly emarginate posteriorly. Although the jugal is small, the quadratojugal is well developed and frequently in contact with the maxillary. The quadrate is considered specialized because it encloses the stapes. The maxillary is specialized, and usually possesses three ridges: an outer cutting edge, one near the posterior edge of the expanded alveolar surface, and another between these. Although the anterior palatal foramina are large, they are somewhat concealed (primitive?), because the palate is highly vaulted (specialized). The basisphenoid is moderately small, and the ethmoid fissure moderately deep. The supraoccipital crest is short, and the orbits are placed well forward on the skull. A parietal foramen has been reported in *Gopherus polyphemus* (Zangerl 1957). In this study it was found in seven percent of *G. polyphemus*, and in five percent of *G. agassizi* specimens examined, but was never found in *G. berlandieri* or *G. flavomarginatus*. The lower jaw has lingual and lateral ridges, separated by the linear alveolar concavity. Both ridges are interrupted dorsal to the symphysis by a shallow antero-posterior groove. Eleven measurements (Fig. 1) were taken on the skulls of 133 specimens of *Gopherus* (6 *flavomarginatus*, 22 *agassizi*, 38 *berlandieri* and 67 *polyphemus*).

SEXUAL VARIATION.—There are no significant differences between the skull proportions of males and females in any of the Recent species of *Gopherus*; however, *G. berlandieri* males have proportionally larger heads than do females (Fig. 2).

ONTOGENETIC VARIATION.—The most obvious changes with growth are associated with the proportionate growth of the pre- and postorbital areas. The postorbital area exhibits considerably more growth than the preorbital area (Fig. 3). There is no significant interspecific difference