PLEISTOCENE ZIPHODONT CROCODILIANS OF QUEENSLAND

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SUMMARY

The rostral portion of a crocodilian skull, from the Pleistocene cave deposits of Tea Tree Cave, near Chillagoe, north Queensland, is described as the type of the new genus and species, *Quinkana fortirostrum*. The form of the alveoli suggests that a ziphodont dentition was present. A second specimen, referred to *Quinkana* sp. from the Pleistocene cave deposits of Texas Caves, south Queensland, confirms the presence of ziphodont teeth. Isolated ziphodont teeth have also been found in eastern Queensland from central Cape York Peninsula in the north to Toowoomba in the south. *Quinkana fortirostrum* is a eusuchian, probably related to *Pristichampsus*. The environments of deposition of the beds yielding ziphodont crocodilians do not provide any evidence for (or against) a fully terrestrial habitat for these creatures. The somewhat problematic Chinese *Hsisosuchus chungkingensis* shows three apomorphic sebecosuchian character states, and is thus considered a sebecosuchian.

INTRODUCTION

The term ziphodont crocodilian refers to those crocodilians possessing a particular adaptation in which a relatively deep, steep sided snout is combined with laterally flattened, serrate teeth (Langston, 1975). Although such crocodiles were described in the nineteenth century (Cuvier, 1824; Marsh, 1871) little attention was paid them until Colbert (1946) redescribed *Sebecus icaeorhinus* from Argentina. The nearly contemporaneous description of *Baurusuchus pachecoi* (Price, 1945) in which the ziphodont condition reaches its most extreme expression, also attracted interest toward these forms. Langston (1956) demonstrated that there were two phylogenetically distant forms of ziphodont crocodile, the mesosuchian sebecoids and the eusuchian pristichampsines. Although Colbert (1946) had proposed that sebecosuchians deserved subordinal status, this was not widely accepted until the study of Gasparini (1972).

Sebecosuchians appear first in the Chinese Jurassic (Young and Chow, 1953; Langston, 1956), and are most numerous in South America, ranging from the Upper Cretaceous to the Miocene (Molnar, 1978), although two reportedly sebecosuchian genera derive from the Eocene of Europe (Berg, 1966; Antunes, 1975). Pristichampsines first appear in the Paleocene of China (Li, 1976) and are widely distributed through Europe and North America in the Tertiary (Langston, 1975; Steel, 1973). They became extinct in the northern continents with the end of the Eocene (Molnar, 1978), but may have survived in Africa into the Miocene (Andrews, 1914).

Prior to 1970, only isolated ziphodont teeth had been reported from Australasia, from two localities of the Otibanda Formation in New Guinea (Plane, 1967). During exploration of Tea Tree Cave near Chillagoe, north Queensland, in 1970 Lyndsey Hawkins, of the Sydney Speleological Society, discovered the snout of a ziphodont crocodilian. In 1975 Michael Archer discovered a second ziphodont crocodilian in the deposits at The Joint, one of the Texas Caves in southern Queensland. Soon afterwards ziphodont teeth and fragments were recognised from several other Australian localities, all but one in Queensland. The single South Australian ziphodont crocodilian, from the Pliocene of Lake Palankarinna (Hecht and Archer, 1977) is not treated here.

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