

ETNABATRACHUS MAXIMUS GEN. ET SP. NOV., A PLIO-PLEISTOCENE FROG  
FROM MOUNT ETNA, CENTRAL EASTERN QUEENSLAND

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*Etnabatrachus maximus* gen. et sp. nov. is the first record of fossil frogs from the Mount Etna region of central eastern Queensland. *E. maximus*' very large size, divided prominences and lateral mid-shaft ridge distinguish it from all other Australian genera. The associated fauna from the type locality indicates a Plio-Pleistocene rainforest environment, making *E. maximus* the largest known species of rainforest frog from Australia. □ *Etnabatrachus maximus*, Plio-Pleistocene, Australia, Ilium, Cainozoic.

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The first fossil frogs from Australia were described by Tyler in 1974 (Tyler, 1974). Since then, Tyler has published on taxa from the Eocene of southern Queensland through to the late Holocene deposits of South and Western Australia (Tyler, 1999). The dominating faunas exhibiting extinct taxa have been the Oligo-Miocene of Riversleigh Qld, Bullock Creek NT and Lake Palankarrina SA. The Pliocene to Holocene record is marked by the exclusively extant taxa illustrating an early establishment of the modern frog faunas.

Several new local faunas have been excavated from deposits from the Mount Etna Caves, Rockhampton, CE Queensland. These local faunas span the Pliocene to Holocene and preserve abundant frog remains, including species of *Lechriodus*, *Kyarannus*, *Litoria* and *Limnodynastes*. The age of the type locality for *Etnabatrachus maximus* gen. et sp. nov. is interpreted as late Pliocene to early Pleistocene based on taxa occurring across this boundary, including: *Petauroides* sp., close to *P. stirtoni* (Turnbull & Lundelius, 1970), *Pseudokoala* sp., close to *P. erlita* (Turnbull & Lundelius, 1970), *Palorchestes* sp., close to *P. parvus* (Tedford, 1994), *Perameles* sp., close to *P. bowensis* (Muirhead et al., 1997) and *Kurrabi* sp. (Flannery et al., 1992).

The type locality for *E. maximus* gen. et sp. nov. is interpreted as rainforest on the basis of sediments being at a time of major speleothem development, and taxa with distinct rainforest affinities, including: pseudocheirids – *Pseudochirulus mayeri*, *Pseudocheirops* spp. petaurids; *Dactylopsila* spp.; macropodids – *Dendrolagus* sp.; peramelimorphians –

peroryctid spp.; murids – *Uromys* sp. and *Pogonomys* sp. nov. (H. Godthelp, pers.comm.); and anurans – *Lechriodus* sp. and *Kyarannus* sp.

Specimens described herein are deposited in the Queensland Museum fossil collection (QMF). Iliac terminology and nomenclature follow Tyler (1976) and taxonomy follows Cogger (2000).

#### SYSTEMATICS

Family ?HYLIDAE Gray, 1825

***Etnabatrachus* gen. nov.**

TYPE SPECIES. *Etnabatrachus maximus* sp. nov. from the Plio-Pleistocene of Mount Etna and Limestone Ridge, localities QML 1385 (Type) and QML1284.

ETYMOLOGY. Etna- in reference to Mount Etna, type locality and -batrachus for frog.

DIAGNOSIS. Large, robust ilium. Iliac crest absent, dorsal acetabular expansion poorly developed, rising slightly above dorsal margin of iliac shaft. Preacetabular zone broad and divided laterally by a mid-shaft ridge. Ridge runs anterior to the acetabular rim, orientated anterodorsally approximately halfway along its length. Ridge terminates at ventral margin of shaft, at approximately anterior 1/4 of ilium length. Dorsal prominence divided into an anterior and a posterior prominence, bisected by a shallow valley running from the antero-medial side to the postero-lateral side. Anterior-most prominence laterally directed with elongate-ovoid protuberance in lateral profile. Anterior-most prominence placed well anterior of anterior acetabular rim. Posterior-most prominence smaller than anterior prominence with a more

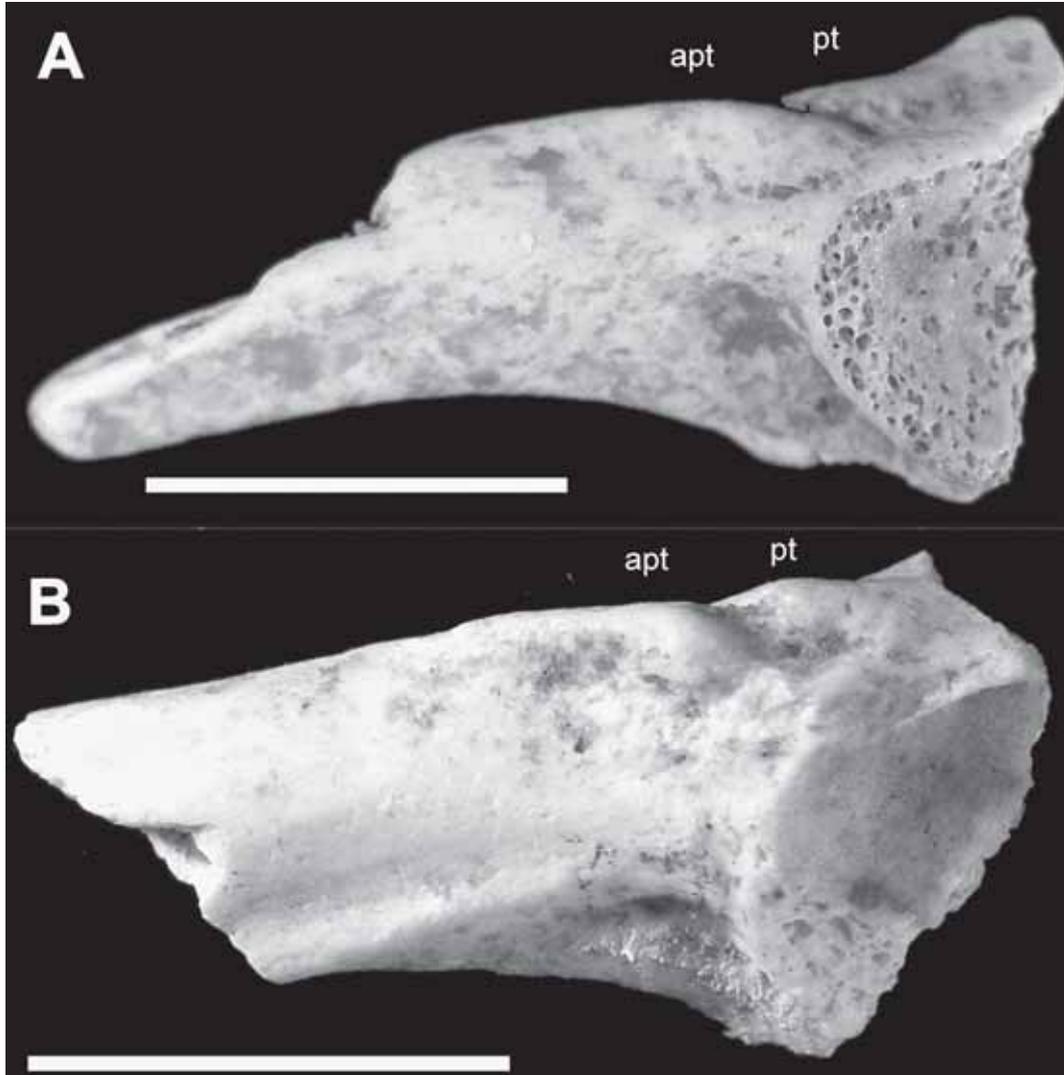


FIG. 1. *Etnabatrachus maximus* gen. et sp. nov. A, left ilium, Holotype QMF44207; B, left ilium, Paratype QMF44208. Scale = 5mm. apt, anterior-most protruberance; pt, proximal protruberance.

rounded protuberance in lateral profile. Posterior-most prominence placed superiorly and central to acetabular fossa. Iliac shaft broad posteriorly, tapering sharply to anterior end.

**DESCRIPTION.** Holotype. QMF44207, is a large, robust left ilium preserving approximately half the posterior end, including a portion of the shaft, acetabulum, dorsal and ventral expansions and prominences. Dorsal acetabular expansion small and rounded superiorly, making a short

iliac/ischial suture. Ventral acetabular expansion missing, broken on ventral margin, however, inferred as small with short iliac/pubis suture. Acetabular fossa large and well differentiated from iliac shaft. Acetabular rim narrow and produced laterally from the antero-posterior axis of the iliac shaft. Iliac shaft incomplete, broken approximately half way along its length, compressed medially and rounded laterally when viewed in cross-section. Preacetabular zone broad, broken postero-ventrally of acetabular

rim, superior to ventral acetabular expansion. Ridge runs antero-dorsally from ventral margin of acetabular rim, curves anteriorly half-way along its length positioned on the midline of the lateral side of the shaft. Curves antero-ventally along last 1/3 of its length, terminating on ventral margin of ilial shaft. Acetabular fossa eroded along posterior margin of fossa and anterior margin of acetabular rim. Dorsal prominence divided into two by a large groove running medio-laterally across ilial shaft. Groove terminates in a small basin, or insertion point, superior to dorsal acetabular rim. Anterior-most protuberance elongate-ovoid and laterally produced. Posterior-most protuberance ovoid in shape and antero-posterior in orientation, prominence terminating at the base of the dorsal acetabular expansion. Iliac shaft broad along its length, broken superiorly and perpendicular to the long axis of the ilium. Iliac length: 13.10+mm, dorsal acetabular expansion to ventral acetabular expansion height: 6.38+mm. Paratype QMF44208 is an incomplete left ilium, preserving the acetabulum, portions of both the dorsal and ventral acetabular expansions, divided prominences and preacetabular zone. Ilium large, robust along its length, broken approximately 1/3 its length. Ventral acetabular expansion unknown, inferred as diminutive in antero-posterior length and extending only slightly past ventral margin of acetabular rim. Acetabular fossa large with prominent narrow and high rim. Dorsal prominence divided into an anterior and a posterior prominence, bisected by a shallow valley running from the antero-medial side to the postero-lateral side. Valley terminates as a small basin (muscular insertion point) positioned superior to the dorsal acetabular rim. Anterior-most prominence laterally directed with an elongate-ovoid protuberance in lateral profile. Anterior-most prominence placed well anterior of anterior acetabular rim. Posterior-most prominence smaller than Anterior prominence with a more rounded protuberance in lateral profile. Prominence less laterally positioned, terminating at the base of the dorsal acetabular expansion. Posterior-most prominence placed superiorly and central to acetabular fossa. Iliac shaft broad posteriorly, tapering sharply to anterior end. Iliac length: 10.20+mm, dorsal acetabular expansion to ventral acetabular expansion height: 5.14+mm.

**REMARKS.** The large size, divided prominence, lateral mid-shaft ridge and reduced dorsal acetabular expansion distinguish *Etnabatrachus*

from all other known Australian genera. The rounded protuberance and lack of a dorsal crest ally this taxon closest to *Litoria* of Australia. However, specific placement in the Hylidae can only be tentative at this point. *Etnabatrachus* is considerably larger than the Oligo-Miocene *Litoria magna* Tyler, 1991, which Tyler (1991) considered to attain sizes of at least 120mm SVL. This puts *L. magna* in a size range greater than the largest extant *Litoria* (Cogger, 2000). It has been hard to estimate the SVL of *E. maximus* based on the lack of a complete ilium, however, the overall size of the ilium indicates a frog of considerable size, larger than 120mm SVL. The associated faunas recovered from the type locality indicate a palaeoenvironment of rainforest. Such a large species of frog in a rainforest deposit is not unusual as a number of species in present day rainforests attain large sizes (e.g. *Mixophyes* 115mm SVL and *Litoria* 120mm SVL).

***Etnabatrachus maximus* sp. nov.**  
(Fig. 1)

**ETYMOLOGY.** Latin, *maximus*, alluding to the large size of the species.

**MATERIAL.** HOLOTYPE: QMF44207, Paratype: QMF44208 from Plio-Pleistocene deposits, Mount Etna and Limestone Ridge (QML1284 & QML1385).

**DIAGNOSIS.** As for genus.

**DESCRIPTION.** As for genus.

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