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A new genus of small boid snake from the Upper Eocene of Hordle Cliff, Hampshire, England

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Abstract. A new genus and species of boid snake, *Totlandophis thomasae* gen. et sp. nov. is described from the Rodent Bed of the Totland Bay Member, MP 17 (Headon Hill Formation) of Hordle Cliff, Hampshire (Upper Eocene), England. The new genus represents an archaic boid taxon that probably did not survive beyond the Eocene and apparently has no close living relatives. Based on its small size and moderately depressed neural arch, it may represent the subfamily Erycinae. However, its caudal vertebrae are presently unknown, thus the boid subfamily of the new taxon cannot be determined.

Key words: fossil snakes, Upper Eocene, Boidae, England.

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I. INTRODUCTION

From 1991 through 1996, D. L. HARRISON and his field parties from the Harrison Zoological Museum have been sieving large quantities of sediment from a horizon at Hordle Cliff, Hampshire, England, referred to as the Rodent Bed (MILNER et. al. 1982). This horizon yielded the remains of a diminutive boid snake (HOLMAN 1996a). Recently, another new genus of larger boid snake was discovered among these Rodent Bed snake remains, and the description of this new taxon forms the subject of the present paper.

The Rodent Bed is within the Totland Bay Member, MP 17 (formerly Lower Headon Beds) of the Headon Hill Formation, Upper Eocene (INSOLE & DALEY 1985). The process used for extracting the small fossils from the Rodent Bed is the same as that reported by HOLMAN (1993) for herpetological fossils collected from the Upper Eocene of the Isle of Wight, England. HOLMAN (1996a) listed current publications on Upper Eocene amphibians and reptiles from the Upper Eocene of Britain except for reports by MILNER (1986) and HOLMAN (1996b).

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II. SYSTEMATIC PALEONTOLOGY

The taxonomic nomenclature of the present paper follows that of RAGE (1984).

Class: Reptilia LAURENTI, 1768

Order: Serpentes LINNAEUS, 1758

Suborder: Alethinophidia NOPCSA, 1923

Superfamily: Booidea GRAY, 1825

Family: Boidae GRAY, 1825

Subfamily indeterminate

Genus *Totlandophis* gen. nov.

Type species: *Totlandophis thomasae*

E t y m o l o g y. The name refers to the Totland Bay Member of the Headon Hill Formation where the type material was collected.

D i a g n o s i s. The diagnosis is the same as for the type and only known species.

Totlandophis thomasae sp. nov.

Figs. 1 and 2

H o l o t y p e. A single trunk vertebra: Michigan State University Vertebrate Paleontology (MSUVP) 1458 (Fig. 1). Collected by D. L. HARRISON and his field parties in 1994.

P a r a t y p e s. Seventeen vertebrae (MSUVP 1459-1475) from the Rodent Bed collected by D. L. HARRISON and his field parties between 1990 and 1996.

T y p e l o c a l i t y a n d h o r i z o n. Hordle Cliff, Hampshire, England. Rodent Bed in the upper part of the Totland Bay Member, MP17, of the Headon Hill Formation (Upper Eocene).

E t y m o l o g y. Named for Nikky M. Thomas is recognition of her paleontological field work in the British Eocene.

D i a g n o s i s. A small boid snake whose vertebrae are about as wide as long and have a moderately depressed neural arch; zygosphene upraised and separated from the neural arch by a slightly bowed line; neural spine thickened posteriorly, somewhat longer than high, and with an overhanging posterior edge; prezygapophyseal and postzygapophyseal articular facets well-developed with truncated leading edges; prezygapophyseal processes very reduced; shallow depressions occur on either side of cotyla; hemal keel thick and strongly produced; subcentral ridges robust.

D e s c r i p t i o n. In dorsal view: vertebra about as wide as long; zygosphene upraised and separated from the neural arch by a slightly bowed line; anterior border of zygosphene convex; left prezygapophysis missing, right prezygapophysis well-developed, oriented anterolaterally and with its anterior edge truncated, prezygapophyseal accessory process reduced; neural spine thickened posteriorly, ending anteriorly at about the posterior extent of the prezygapophyseal articular

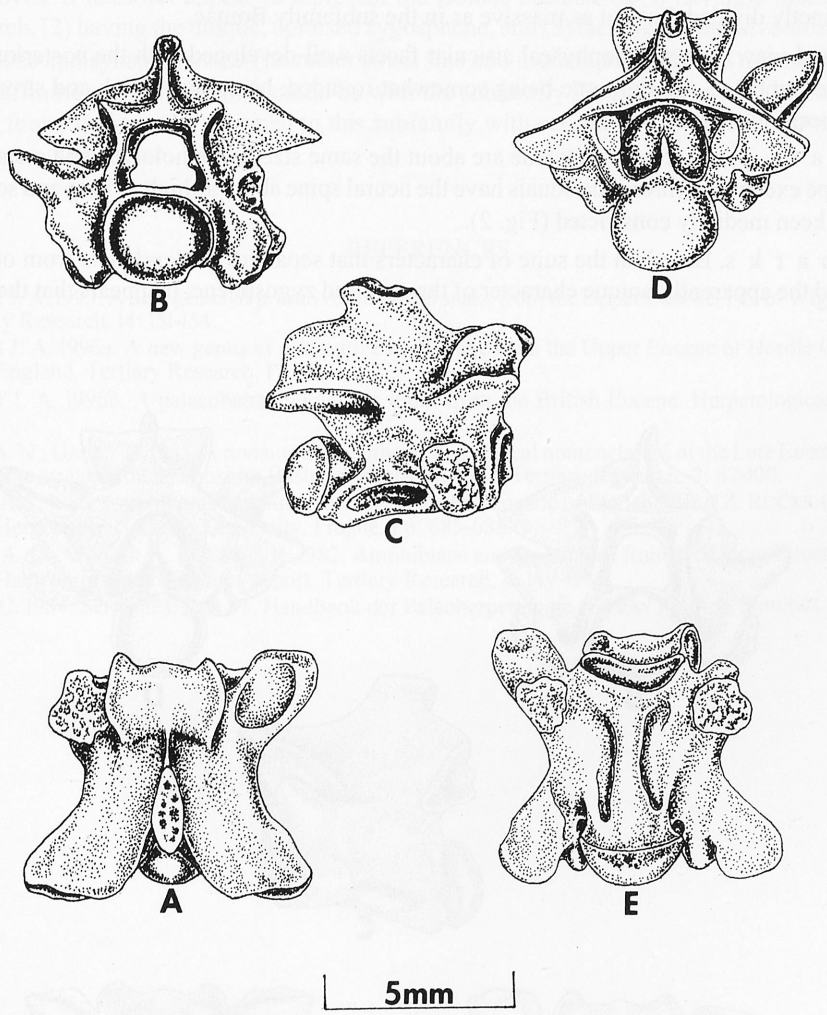

Fig. 1. Holotype trunk vertebra of *Totlandophis thomasae* gen. sp. nov. from the Upper Eocene Rodent Bed of Hordle Cliff, Hampshire, England. A – dorsal; B – anterior; C – lateral; D – posterior; E – ventral views.

facets, overhanging posteriorly; posterior border of neural arch broadly V-shaped. Measurements: greatest length through pre and postzygapophyses 7.7 mm.; greatest width through postzygapophyses 7.7 mm.

In anterior view: neural arch moderately depressed; neural spine thick and low; dorsal border of zygosphene very slightly convex; prezygapophyses tilted upward; neural canal loaf-of-bread shaped and slightly wider than oval cotyle; shallow depressions on either side of cotyle.

In lateral view: neural spine somewhat longer than high, its anterior ending at about the posterior end of the prezygapophyseal articular facets; posterior edge of neural arch slopes downward very steeply; hemal keel very distinct; subcentral ridges dorsally concave.

In posterior view: neural arch moderately depressed; neural spine low and thick; neural canal loaf-of-bread shaped and slightly narrower than the oval condyle; synapophyses moderately large and indistinctly divided, but not as massive as in the subfamily Boinae.

In ventral view: postzygapophyseal articular facets well-developed with the posterior edge of the left one truncated, the right one being somewhat rounded; hemal keel thick and strongly produced; subcentral ridges robust.

P a r a t y p e s. These vertebrae are about the same size as the holotype and are similar to the holotype except that three individuals have the neural spine about as high as long and some have the hemal keen medially constricted (Fig. 2).

R e m a r k s. Based on the suite of characters that separates *Totlandophis* from other boid genera, and the apparently unique character of the upraised zygosphene, it appears that the new ge-

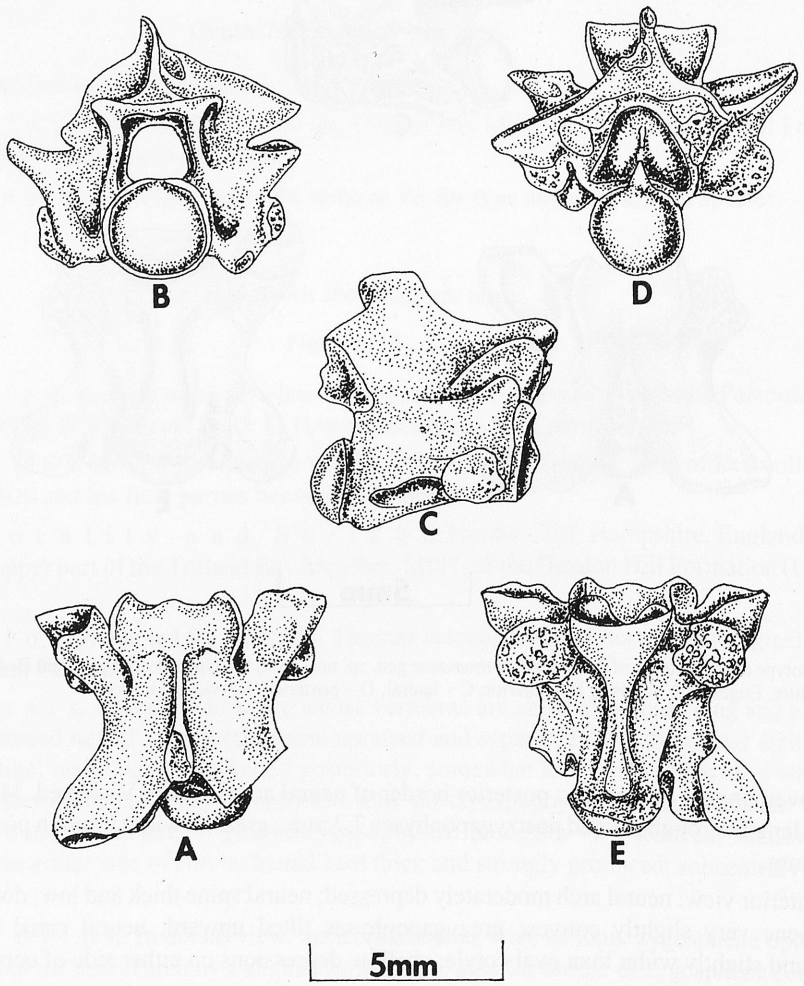

Fig. 2. Paratype trunk vertebra of Totlandophis thomasae gen. sp. nov. from the Upper Eocene Rodent Bed of Hordle Cliff, Hampshire, England. A – dorsal; B – anterior; C – lateral; D – posterior; E – ventral views.

nus is an archaic boid taxon that did not survive beyond the Eocene and may not have any close living relatives. It does not appear to represent the Boinae because of (1) having a more depressed neural arch, (2) having the unique, upraised zygosphene, and (3) lacking the massive structure of the zygosphene and synapophyses. The rather small size and moderately flattened neural arch suggest that the affinities of Totlandophis could be with the subfamily Erycinae, but until its caudal vertebrae are found it cannot be assigned to this subfamily with certainty. The function of the upraised zygosphene is unknown.

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