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**A species level revision of Bridgerian and Uintan brontotheres
(Mammalia, Perissodactyla) exclusive of *Palaeosyops***

BRYN J. MADER



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Table of contents

Abstract	4
Introduction	4
Methods	5
Revision of Bridgerian and Uintan Brontotheres	7
Order Perissodactyla Owen 1848	7
Family Brontotheriidae Marsh 1873	7
Subfamily Dolichorhininae Riggs 1912	7
Genus <i>Mesatirhinus</i> Osborn 1908	8
Species <i>Mesatirhinus megarhinus</i> (Earle 1891)	19
Genus <i>Metarhinus</i> Osborn 1908	20
Species <i>Metarhinus fluviatilis</i> Osborn 1908	29
Species <i>Metarhinus diploconus</i> (Osborn 1895)	29
Genus <i>Sphenocoelus</i> Osborn 1895	30
Species <i>Sphenocoelus uintensis</i> Osborn 1895	44
Species <i>Sphenocoelus intermedius</i> (Osborn 1908)	45
Species <i>Sphenocoelus hyoganthus</i> (Osborn 1890)	48
Subfamily Brontotheriinae Marsh 1873	49
Genus <i>Telmatherium</i> Marsh 1872	52
Species <i>Telmatherium validus</i> Marsh 1872	63
Genus <i>Protitanotherium</i> Hatcher 1895	63
Species <i>Protitanotherium emarginatum</i> (Hatcher 1895)	66
Genus <i>Pseudodiplacodon</i> Mader 2000	66
Species <i>Pseudodiplacodon progressum</i> (Peterson 1934)	70
Genus <i>Eotitanotherium</i> Peterson 1914c	70
Species <i>Eotitanotherium osborni</i> (Peterson 1914a)	72
Brontotheriidae incertae sedis	72
Genus <i>Sthenodectes</i> Gregory 1912	72
Species <i>Sthenodectes incisivum</i> (Douglass 1909)	74
Genus <i>Metatelmatherium</i> Granger and Gregory 1938	74
Species <i>Metatelmatherium cristatum</i> Granger and Gregory 1938	80
Species <i>Metatelmatherium ultimum</i> (Osborn 1908)	80
Conclusion	82
Acknowledgments	83
References	83

Abstract

A systematic revision based on a morphological and statistical analysis recognizes the following Bridgerian and Uintan brontothere species as valid: *Mesatirhinus megarhinus*, *Metarhinus fluviatilis*, *Metarhinus diploconus*, *Sphenocoelus uintensis*, *Sphenocoelus intermedius*, *Sphenocoelus hyognathus*, *Telmatherium validus*, *Protitanotherium emarginatum*, *Pseudodiplacodon progressum*, *Eotitanotherium osborni*, *Sthenodectes incisivum*, and *Metatelmatherium ultimum*. The valid Bridgerian genus *Palaeosyops* is not discussed in the present paper. *Mesatirhinus*, *Metarhinus*, and *Sphenocoelus* are grouped within the subfamily Dolichorhininae; *Telmatherium*, *Protitanotherium*, *Pseudodiplacodon*, and *Eotitanotherium* are grouped within the subfamily Brontotheriinae; and *Sthenodectes* and *Metatelmatherium* are listed as Brontotheriidae incertae sedis. It is possible that *Metatelmatherium* may be a member of the subfamily Brontotheriinae or that it may be closely related to *Sthenodectes*, justifying the recognition of another North American brontothere subfamily, the Metatelmatheriinae.

Key words: titanothera, Brontotheriidae, Eocene, *Mesatirhinus*, *Metarhinus*, *Sphenocoelus*, *Dolichorhinus*, *Telmatherium*, *Protitanotherium*, *Pseudodiplacodon*, *Diplacodon*, *Eotitanotherium*, *Metatelmatherium*, *Sthenodectes*

Introduction

Mader (1989; 1998) published two major revisions of North American brontothere genera, the first significant revisions since Osborn's monographic treatment in 1929, which had greatly oversplit the taxa (Prothero & Schoch 1989). The 1998 paper included lists of valid species among the genera recognized, but did not specify the reasons for their acceptance or for the rejection of others. The present paper provides the formal justification for most of those systematic conclusions. Specifically, it will address the Bridgerian and Uintan genera *Telmatherium*, *Mesatirhinus*, *Metarhinus*, *Sphenocoelus* (= *Dolichorhinus*), *Protitanotherium*, *Pseudodiplacodon*, *Eotitanotherium*, *Metatelmatherium*, and *Sthenodectes*. This paper will not address the plesiomorphic brontotheres *Eotitanops* or *Palaeosyops*, or the highly derived eubrontotheres (see Mader 1989 and 1998 for definition) of the Duchesnean and Chadronian. *Eotitanops* and *Palaeosyops* were recently revised by Gunnell and Yarbrough (2000), whose conclusions are very similar to my own (Mader 1998).

Abbreviations

Institutional. **AMNH**, American Museum of Natural History, New York; **ANSP**, Academy of Natural Sciences of Philadelphia, Philadelphia; **CM**, Carnegie Museum of Natural History, Pittsburgh; **DMNH**, Denver Museum of Natural History, Denver; **FMNH**, **FMNH P**, and **FMNH PM**, Field Museum of Natural History, Chicago; **GSI**, Geological Survey of India collection, Geological Museum, Calcutta; **LACM** Natural History Museum of Los Angeles County, Los Angeles; **LACM (CIT)**, California Institute of Technology collection, Natural History Museum of Los Angeles County, Los Angeles; **MCZ**, Museum of Comparative Zoology, Harvard University, Cambridge; **TMM**, Texas Memorial Museum, University of Texas, Austin; **UCM**, University of Colorado Museum, Boulder; **UCMP**, Museum of Paleontology, University of California, Berkeley; **UFH**, Utah Field House of Natural History, Vernal; **USNM**, United States National Museum, Smithsonian Institution, Washington, D. C.; **UW**, Geological Museum, University of Wyoming, Laramie; **YPM**, Peabody Museum of Natural History, Yale University, New Haven; **YPM-PU**, Princeton University Collection, Peabody Museum of Natural History, Yale University, New Haven.

Statistical. **DF**, degrees of freedom; **n**, number of cases in sample; **s**, standard deviation of sample; **V**, coefficient of variation.