Cambridge University Press 978-1-009-00581-4 — Expanded Sampling Across Ontogeny in Deltasuchus motherali Stephanie K. Drumheller, Thomas L. Adams, Hannah Maddox, Christopher R. Noto Frontmatter <u>More Information</u>

## Cambridge Elements<sup> $\equiv$ </sup>

Elements of Paleontology edited by Colin D. Sumrall University of Tennessee

## EXPANDED SAMPLING ACROSS ONTOGENY IN *DELTASUCHUS MOTHERALI* (NEOSUCHIA, CROCODYLIFORMES)

Revealing Ecomorphological Niche Partitioning and Appalachian Endemism in Cenomanian Crocodyliforms

> Stephanie K. Drumheller University of Tennessee

> > Thomas L. Adams Witte Museum

Hannah Maddox University of Tennessee

Christopher R. Noto University of Wisconsin-Parkside





Cambridge University Press

978-1-009-00581-4 – Expanded Sampling Across Ontogeny in Deltasuchus motherali Stephanie K. Drumheller, Thomas L. Adams, Hannah Maddox, Christopher R. Noto Frontmatter More Information



University Printing House, Cambridge CB2 8BS, United Kingdom

One Liberty Plaza, 20th Floor, New York, NY 10006, USA

477 Williamstown Road, Port Melbourne, VIC 3207, Australia

314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre, New Delhi – 110025, India

79 Anson Road, #06-04/06, Singapore 079906

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning, and research at the highest international levels of excellence.

www.cambridge.org Information on this title: www.cambridge.org/9781009005814 DOI: 10.1017/9781009042024

© Stephanie K. Drumheller, Thomas L. Adams, Hannah Maddox, and Christopher R. Noto 2021

This work is in copyright. It is subject to statutory exceptions and to the provisions of relevant licensing agreements;

with the exception of the Creative Commons version the link for which is provided below, no reproduction of any part of this work may take place without the written permission of Cambridge University Press.

An online version of this work is published at doi.org/10.1017/9781009042024 under a Creative Commons Open Access license CC-BY-NC-ND 4.0 which permits re-use, distribution and reproduction in any medium for non-commercial purposes providing appropriate credit to the original work is given. You may not distribute derivative works without permission. To view a copy of this license, visit https://creativecom mons.org/licenses/by-nc-nd/4.0

All versions of this work may contain content reproduced under license from third parties.

Permission to reproduce this third-party content must be obtained from these third-parties directly.

When citing this work, please include a reference to the DOI 10.1017/9781009042024

First published 2021

A catalogue record for this publication is available from the British Library.

ISBN 978-1-009-00581-4 Paperback ISSN 2517-780X (online) ISSN 2517-7796 (print)

Additional resources for this publication at www.cambridge.org/drumheller

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

Cambridge University Press 978-1-009-00581-4 — Expanded Sampling Across Ontogeny in Deltasuchus motherali Stephanie K. Drumheller, Thomas L. Adams, Hannah Maddox, Christopher R. Noto Frontmatter More Information

## Expanded Sampling Across Ontogeny in Deltasuchus motherali (Neosuchia, Crocodyliformes)

Revealing Ecomorphological Niche Partitioning and Appalachian Endemism in Cenomanian Crocodyliforms

Elements of Paleontology

DOI: 10.1017/9781009042024 First published online: April 2021

Stephanie K. Drumheller University of Tennessee

> Thomas L. Adams Witte Museum

Hannah Maddox University of Tennessee

Christopher R. Noto University of Wisconsin-Parkside

Author for correspondence: Stephanie K. Drumheller, sdrumhel@utk.edu

Abstract: New material attributable to *Deltasuchus motherali*, a neosuchian from the Cenomanian of Texas, provides sampling across much of the ontogeny of this species. Detailed descriptions provide information about the paleobiology of this species, particularly with regards to how growth and development affected diet. Overall snout shape became progressively wider and more robust with age, suggesting that dietary shifts from juvenile to adult were not only a matter of size change, but of functional performance as well. These newly described elements provide additional characters upon which to base more robust phylogenetic analyses. The authors provide a revised diagnosis of this species, describing the new material and discussing incidents of apparent ontogenetic variation across the sampled population. The results of the ensuing phylogenetic analyses both situate *Deltasuchus* within an endemic clade of Appalachian crocodyliforms, separate and diagnosable from goniopholidids and pholidosaurs, herein referred to as Paluxysuchidae. This title is also available as Open Access on Cambridge Core

Keywords: Cretaceous, Woodbine Formation, ontogeny, Crocodyliformes, Deltasuchus

© Stephanie K. Drumheller, Thomas L. Adams, Hannah Maddox, and Christopher R. Noto 2021

> ISBNs: 9781009005814 (PB), 9781009042024 (OC) ISSNs: 2517-780X (online), 2517-7796 (print)

Cambridge University Press 978-1-009-00581-4 — Expanded Sampling Across Ontogeny in Deltasuchus motherali Stephanie K. Drumheller, Thomas L. Adams, Hannah Maddox, Christopher R. Noto Frontmatter More Information

## Contents

1	Introduction	1
2	Age and Geologic Setting	2
3	Systematic Paleontology	6
4	Description	7
5	Phylogenetic Analysis	41
6	Discussion	46
7	Conclusions	57
	References	59

Further Online Appendices, in addition to other supplementary materials including video files, can be accessed at www.cambridge.org/drumheller.