Supplementary Material for:

Small crocodyliform from the Lower Cretaceous (Late Aptian) of central Texas and its systematic relationship to the evolution of Eusuchia

Thomas L. Adams

Roy M. Huffington Department of Earth Sciences, Southern Methodist University, Dallas, TX 75275–0395, U.S.A., and Witte Museum, San Antonio, TX, 78209, U.S.A., <tladams40@gmail.com>

*Character and taxon sampling*.—The following taxa were scored and added to the matrix of Turner and Sertich (2010), which contained 84 taxa and 301 characters. Scorings for all other taxa used in the analysis along with character descriptions follow Turner and Sertich (2010). Following Turner and Sertich (2010), character 5 was excluded from the analysis (due to dependence with the modified definition of character 6) and character 277 was excluded due to doubts of the homology coded for by the character. Characters 1, 3, 6, 10, 23, 37, 43-45, 49, 65-67, 69, 73, 77-79, 86, 90-91, 96-97, 104-106, 108, 126, 140-143, 149, 167, 182, 197, and 226 represent potentially nested sets of homologies and/or entail presence and absence information and were set as additive. No additional character modifications were made.

Glen\_Rose\_Form 20300011121?0011???01???????????????2110?011????????????????????30310???????10211?????????????????????3??000??0??????01100?01?1100?0000?0010?0???????????10??13101001?2????????0?10???1000?000??01???0?0?0?1??00????000????????0?000000001000000000?0?00???10??00????2?0?1??01?????1010????1?00001000000??01?

Pachycheilosuchus\_trinquei 203?????????????00??10?111???10001??????????01?1??????????????????2??????01?0?0?0101111??021111000??0?3???0021??1000?0?10???????????????0?1??0???????????10?00010??0??2?????????01?????1???00???0????????0??1?0?????????????00?0???????????0???????????????1?????????0?????????001?????0?10??00??0???00?0????

Paluxysuchus\_newmani 203???11?20010110100100111010100010021????0?1111201111010000?1?0??31?1?1?010??200???????????????????????0?00??00?????01100??101100?00000001001101?1?00????0??00110?01022100?0??0?1000111???0?0?00?0100100001?100000100000000???0???000?00?00?1???0000?00000100?00?????0000101?????0000000??1?00000??00??0?00?

Wannchampsus\_kirpachi 203?0????21?001100001111110001000010211010111111201111010000?1?0??310??100111?211??????????11?????????300?0021001???101100????1100?000?00?100010001?00???100?13101?01022011?00?0?1000110001000?001010010?00101000001??000020???0???000?00100?0???000??00000100?00??1?20001?00?????1?01000??11000010000001?010

Meridiosaurus\_vallisparadisi 2?2?121111??11???????????????????????????????????????????????????1???????????12??????????????????????????010???????????1??0?11????????0?0010?????????????????????010???????????0?1????11???0??????????????????0??????????????????00???0????20?001??????????1?????????????0???0?????????????1?????0??00????0??

Elosuchus\_cherifiensis 203?12111100001?1??010????11????01012???????????????????0??????????1????????112?????????????????0????????0????0??????0???1???010?????????????0?11???????????????0?1??02?0????????1????1???????????????????????????????????????????0????????2??001??????????1?????????0?100?1100??10000100??1?000000000????00?

Oceanosuchus\_boecensis 202?12110100101????11001???101??01012???????????????????0??????????1????????1?00???1?????????????????????0????0??????0???1???110????????????????????????????????0?1??0???????????0????0???????????????????????????????????????????0????????2??001??????????1?????0????0100?0?0??0?000??00??1??0000??00??0?0??

Batrachomimmus\_pastosbonensis 103?00?1011?00?1100?????11?001??????1?101010?????????????????????0312?31?01?102???????????????1??0??1??0?110??0???????10?1011?1100?????00010102?1???0????010??0?000?0?1?00?????0?10???11?000??0??1???000?0?1??00?00??001??00???0???00000?1?0?00000100?0????1???00???????????1?0??0101110?????00?0?00?000??0?1

*Taxon list* —Fossil taxa added to phylogenetic analysis from original Turner and Sertich (2010). Institutional accession numbers of the specimens that were scored based on firsthand examination are added after the bibliographic reference.

*Batrachomimus pastosbonensis*—Montefeltro et al., 2013.

*Elosuchus cherifiensis*—Lavocat, 1955; Lapparent de Broin, 2002; Fortier et al., 2012.

‘Glen Rose form’—Brochu 1997a, 1999; USNM 22039.

*Meridiosaurus vallisparadisi*—Mones, 1980; Fortier et al., 2012.

*Oceanosuchus boecenis*—Hua et al., 2007; Lepage et al., 2008; Fortier et al., 2012.

*Pachycheilosuchus trinquei*—Rogers, 2003; SMU 75009–75026, SMU 75028–75033–75052, SMU 75068–75076, SMU 75090, SMU 75092, SMU 75103–75150, SMU 75153–75168, SMU 75202–75260, SMU 75262–75268, SMU 75272, SMU 75277–75278, SMU 75281–75287, SMU 75289–75299, SMU 75302–75315.

*Paluxysuchus newmani*—Adams, 2013; SMU 76601, SMU 76602.

*Wannchampsus* *kirpachi*—SMU 76604, SMU 76605, SMU 71488, SMU 76818–76834.

REFERENCES

Adams, T. L. 2013. A new neosuchian crocodyliform from the Lower Cretaceous (Late Aptian) Twin Mountains Formation of north-central Texas. Journal Vertebrate Paleontology, 33:85–101.

Brochu, C. A. 1997. Phylogenetic systematics and taxonomy of Crocodylia. Unpublished

 Ph.D. dissertation, University of Texas at Austin, 340 p.

Brochu, C. A. 1999. Phylogenetics, taxonomy, and historical biogeography of Alligatoroidea. Journal of Vertebrate Paleontology, 19(suppl. to no. 2):1–92.

Fortier, D., D. Perea, and C. Schultz. 2011. Redescription and phylogenetic relationships of *Meridiosaurus Vallisparadisi*, a pholidosaurid from the Late Jurassic of Uruguay.Zoological Journal of the Linnean Society, 163:S257–S272.

Hua S., E. Buffetaut, C. Legall, and P. Rogron. 2007. *Oceanosuchus boecensis* n. gen., n. sp., a marine pholidosaurid (Crocodylia,Mesosuchia) from the Lower Cenomanian ofNormandy (western France). Bulletin de la société géologique de France, 178:503–513.

Lavocat. R. 1955. Decouverte d’un Crocodilien du genre *Thoracosaurus* dans le Cretace Superiuer d’Afrique. Bulletin du museum National d’Historie Naturelle, 2: 338–340.

Lapparent de Broin, F. 2002. *Elosuchus*, a new genus of crocodile from the Lower Cretaceous of the North of Africa. Comptes Rendu Palevol 1:275–285.

Lepage, Y., E . Buffetaut, S. Hua, J. E. Martin, J. Tabouelle. 2008. Catalogue descriptif, anatomique, geologique et historique des fossiles presentes a l’exposition ‘Les Crocodiliens fossiles de Normandie’. Bulletin de la Société Géologique de Normandie et des Amis du Muséum du Havre 95:5–152.

Mones, A. 1980. Nuevos elementos de la Paleoherpetofauna del Uruguay (Crocodilia y Dinosauria). Actas del I Congreso Latinoamericano de Paleontologia1:265–277.

Montefeltro, F. C., H. C. E. Larsson, M. A. G. França, M. C. Langer. 2013. A new neosuchian with Asian affinities from the Jurassic of northeastern Brazil. *Naturwissenschaften*.

Rogers, J. V. II. 2003. *Pachycheilosuchus trinquei*, a new procoelous crocodyliform from the Lower Cretaceous (Albian) Glen Rose Formation of Texas. Journal of Vertebrate Paleontology, 23:128–145.

Turner, A. H. and J. J. W. Sertich. 2010. Phylogenetic history of *Simosuchus clarki*

 (Crocodyliformes: Notosuchia) from the Late Cretaceous of Madagascar. Journal of Vertebrate Paleontology, 30, 6:177–236.