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SUPPLEMENTARY ONLINE MATERIAL FOR

Osteological correlates for quadrupedality in ornithischian dinosaurs

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Supplementary Online Material

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http://app.pan.pl/SOM/app59-Maidment_Barrett_SOM/SOM_2.xls

Table S1. Specimens examined

Taxon	Specimen number	Grouping
<i>Lesothosaurus diagnosticus</i>	NHMUK RUB 17	Biped
<i>Abriktosaurus consors</i>	NHMUK RUB 54	Biped
c.f. Heterodontosauridae	NHMUK R11003	Biped
<i>Scutellosaurus lawleri</i>	MNA Pl. 175	Unknown
<i>Scelidosaurus harrisonii</i>	NHMUK R1111	Unknown
<i>Scelidosaurus harrisonii</i>	NHMUK R.6407	Unknown
<i>Struthiosaurus languedocensis</i>	OLV D50 DCV	Quadruped
<i>Struthiosaurus austriacus</i>	NHMUK R4966	Quadruped
<i>Polacanthus foxii</i>	NHMUK R175	Quadruped
<i>Panoplosaurus mirus</i>	ROM 1215	Quadruped
<i>Edmontonia rugosidens</i>	TMP 98.98.01	Quadruped
<i>Edmontonia longiceps</i>	CMN 8531	Quadruped
<i>Anoplosaurus curtonensis</i>	NHMUK R16475	Quadruped
<i>Sauropelta edwardsi</i>	AMNH 3032	Quadruped
<i>Sauropelta edwardsi</i>	AMNH 5833	Quadruped
<i>Sauropelta edwardsi</i>	AMNH 3035	Quadruped
<i>Hoplitosaurus marshi</i>	USNM V4752	Quadruped
<i>Euoplocephalus tutus</i>	ROM 1930	Quadruped
<i>Euoplocephalus tutus</i>	AMNH 5403	Quadruped
<i>Euoplocephalus tutus</i>	AMNH 5409	Quadruped
<i>Euoplocephalus tutus</i>	AMNH 5337	Quadruped
<i>Ankylosaurus magniventris</i>	AMNH 5895	Quadruped
<i>Ankylosaurus magniventris</i>	AMNH 5214	Quadruped
<i>Dyoplosaurus acutosquameus</i>	ROM 784	Quadruped
<i>Hylaeosaurus oweni</i>	NHMUK 3775	Quadruped
<i>Stegosaurus armatus</i>	SMA DS-RCR-2003-02	Quadruped
<i>Stegosaurus armatus</i>	ROM 28962	Quadruped
<i>Stegosaurus mjosi</i>	SMA-0017	Quadruped
<i>Stegosaurus mjosi</i>	SMA-VF01	Quadruped
<i>Stegosaurus mjosi</i>	SMA-0092	Quadruped
<i>Kentrosaurus aethiopicus</i>	MB.R.4800	Quadruped
<i>Kentrosaurus aethiopicus</i>	MB.R.4802 - 4816	Quadruped
<i>Kentrosaurus aethiopicus</i>	MB.R.4580	Quadruped
<i>Kentrosaurus aethiopicus</i>	MB.R.3612 - 3614	Quadruped
<i>Kentrosaurus aethiopicus</i>	MB.R.4560	Quadruped
<i>Kentrosaurus aethiopicus</i>	MB.R.4550	Quadruped
<i>Kentrosaurus aethiopicus</i>	MB.R.3579	Quadruped
<i>Kentrosaurus aethiopicus</i>	MB.R.3576	Quadruped
<i>Kentrosaurus aethiopicus</i>	MB.R.3582	Quadruped
<i>Kentrosaurus aethiopicus</i>	MB.R.3594	Quadruped
<i>Kentrosaurus aethiopicus</i>	MB.R.2951	Quadruped
<i>Loricatosaurus priscus</i>	NHMUK R3167	Quadruped
<i>Dacentrurus armatus</i>	NHMUK 46013	Quadruped
Stegosauria indet.	NHMUK R1989-1992	Quadruped
Stegosauria indet.	NHMUK R5902	Quadruped
<i>Stormbergia dangershoeki</i>	NHMUK R11000	Biped
<i>Stormbergia dangershoeki</i>	NHMUK R11002	Biped
<i>Othneilosaurus consors</i>	SMA-0010	Biped

<i>Jeholosaurus shangyuanensis</i>	IVPP V12529	Biped
<i>Jeholosaurus shangyuanensis</i>	IVPP V15939	Biped
<i>Hypsilophodon foxii</i>	NHMUK R200	Biped
<i>Hypsilophodon foxii</i>	NHMUK R193	Biped
<i>Hypsilophodon foxii</i>	NHMUK R195	Biped
<i>Hypsilophodon foxii</i>	NHMUK R196	Biped
<i>Parksosaurus warreni</i>	ROM 804	Biped
<i>Thescelosaurus neglectus</i>	CMN 8537	Biped
<i>Zalmoxes robustus</i>	NHMUK R3834	Unknown
<i>Zalmoxes robustus</i>	NHMUK R3832	Unknown
<i>Zalmoxes robustus</i>	NHMUK R3810	Unknown
<i>Zalmoxes robustus</i>	NHMUK R3814	Unknown
<i>Zalmoxes robustus</i>	NHMUK R3809	Unknown
<i>Zalmoxes robustus</i>	NHMUK R3813	Unknown
<i>Zalmoxes shqiperorum</i>	NHMUK R4900	Unknown
<i>Tenontosaurus tilletti</i>	MANCH LL12275	Unknown
<i>Valdosaurus canaliculatus</i>	IWCMS 2007.4	Unknown
<i>Valdosaurus canaliculatus</i>	IWCMS 6879	Unknown
<i>Valdosaurus canaliculatus</i>	UM B3826	Unknown
<i>Valdosaurus canaliculatus</i>	NHMUK 2150	Unknown
<i>Valdosaurus canaliculatus</i>	NHMUK 2132	Unknown
<i>Valdosaurus canaliculatus</i>	IWCMS 6438	Unknown
<i>Dysalotosaurus lettowvorbecki</i>	MfN .mounted specimen	Unknown
<i>Dysalotosaurus lettowvorbecki</i>	MB.R.1707	Unknown
<i>Dysalotosaurus lettowvorbecki</i>	MB.R.1718	Unknown
<i>Dysalotosaurus lettowvorbecki</i>	MB.R.1480 - 1481	Unknown
<i>Dysalotosaurus lettowvorbecki</i>	MB.R.2511	Unknown
<i>Dysalotosaurus lettowvorbecki</i>	MB.R.3474	Unknown
<i>Dysalotosaurus lettowvorbecki</i>	MB.R.1485	Unknown
<i>Dysalotosaurus lettowvorbecki</i>	MB.R.1711	Unknown
<i>Dysalotosaurus lettowvorbecki</i>	MB.R.3471	Unknown
<i>Dysalotosaurus lettowvorbecki</i>	MB.R.1474	Unknown
<i>Dysalotosaurus lettowvorbecki</i>	MB.R.1478	Unknown
<i>Dysalotosaurus lettowvorbecki</i>	MB.R.1408	Unknown
<i>Dysalotosaurus lettowvorbecki</i>	MB.R.2517	Unknown
<i>Dysalotosaurus lettowvorbecki</i>	MB.R.1540 - 1542	Unknown
<i>Dysalotosaurus lettowvorbecki</i>	MB.R.1468	Unknown
<i>Dysalotosaurus lettowvorbecki</i>	MB.R.2523	Unknown
<i>Camptosaurus dispar</i>	CM 21725	Unknown
<i>Camptosaurus dispar</i>	CM 79050	Unknown
<i>Camptosaurus dispar</i>	CM 21723	Unknown
<i>Camptosaurus dispar</i>	USNM V4282	Unknown
<i>Camptosaurus dispar</i>	USNM V5959	Unknown
<i>Camptosaurus dispar</i>	USNM V2210	Unknown
<i>Camptosaurus dispar</i>	USNM V5473	Unknown
<i>Camptosaurus dispar</i>	CM 15780	Unknown
<i>Uteodon aphanoecetes</i>	CM 11337	Unknown
<i>Cumnoria prestwichii</i>	OUMNH J3303	Unknown
<i>Hypselospinus fittoni</i>	NHMUK R1834	Unknown
<i>Hypselospinus fittoni</i>	NHMUK R1635	Unknown
<i>Hypselospinus fittoni</i>	NHMUK R1629, 1632, 811, 604	Unknown
<i>Osmakasaurus depressus</i>	USNM 4753	Unknown
<i>Barilium dawsoni</i>	NHMUK R3788	Unknown
<i>Barilium dawsoni</i>	NHMUK R2848	Unknown
<i>Barilium dawsoni</i>	NHMUK R798-806	Unknown

<i>Mantellisaurus atherfieldensis</i>	NHMUK R2194	Unknown
<i>Mantellisaurus atherfieldensis</i>	NHMUK R11521	Unknown
<i>Equijubus normani</i>	IVPP V12534	Unknown
<i>Iguanodontia</i> indet.	IVPP mounted specimen	Unknown
<i>Bactrosaurus johnsoni</i>	AMNH 6553	Unknown
<i>Bactrosaurus johnsoni</i>	AMNH 6577	Unknown
<i>Gilmoreosaurus mongoliensis</i>	AMNH 30740	Unknown
<i>Gilmoreosaurus mongoliensis</i>	AMNH 30739	Unknown
<i>Gilmoreosaurus mongoliensis</i>	AMNH 30735	Unknown
<i>Gilmoreosaurus mongoliensis</i>	AMNH 30741	Unknown
<i>Gilmoreosaurus mongoliensis</i>	AMNH 30744	Unknown
<i>Gilmoreosaurus mongoliensis</i>	AMNH 30738	Unknown
<i>Gilmoreosaurus mongoliensis</i>	AMNH 30736	Unknown
<i>Gilmoreosaurus mongoliensis</i>	AMNH 30733	Unknown
<i>Gilmoreosaurus mongoliensis</i>	AMNH 30732	Unknown
<i>Gilmoreosaurus mongoliensis</i>	AMNH 30730	Unknown
<i>Gilmoreosaurus mongoliensis</i>	AMNH 30729	Unknown
<i>Gilmoreosaurus mongoliensis</i>	AMNH 30728	Unknown
<i>Gilmoreosaurus mongoliensis</i>	AMNH 30725	Unknown
<i>Gilmoreosaurus mongoliensis</i>	AMNH 30724	Unknown
<i>Gilmoreosaurus mongoliensis</i>	AMNH 30723	Unknown
<i>Telmatosaurus transsylvanicus</i>	NHMUK R4914	Unknown
<i>Telmatosaurus transsylvanicus</i>	NHMUK R4913	Unknown
<i>Telmatosaurus transsylvanicus</i>	NHMUK R3847	Unknown
<i>Telmatosaurus transsylvanicus</i>	NHMUK R3842	Unknown
<i>Hypacrosaurus</i> sp.	TMP 2007.10.02	Unknown
<i>Hypacrosaurus altispinus</i>	CMN 8501	Unknown
<i>Lambeosaurus lambei</i>	ROM 1218	Unknown
<i>Lambeosaurus magnacristatus</i>	TMP 66.04.01	Unknown
<i>Corythosaurus casuarius</i>	ROM 1947	Unknown
<i>Corythosaurus casuarius</i>	ROM 845	Unknown
<i>Maiasaura peeblesorum</i>	ROM 44771	Unknown
<i>Brachylophosaurus canadensis</i>	TMP 90.104.01	Unknown
<i>Brachylophosaurus canadensis</i>	CMN 8839	Unknown
<i>Gryposaurus notabilis</i>	TMP 1980.22.01	Unknown
<i>Edmontosaurus regalis</i>	CMN 2289	Unknown
<i>Edmontosaurus regalis</i>	ROM 801	Unknown
<i>Edmontosaurus annectens</i>	CMN 8399	Unknown
<i>Parasaurolophus walkeri</i>	ROM 768	Unknown
<i>Psittacosaurus sinensis</i>	IVPP V738	Unknown
<i>Psittacosaurus sinensis</i>	IVPP V740-741	Unknown
<i>Psittacosaurus neimongoliensis</i>	IVPP V120888	Unknown
<i>Psittacosaurus lujiatunensis</i> (six individuals)	IVPP V14341	Unknown
<i>Yinlong downsi</i>	IVPP V14530	Unknown
<i>Yinlong downsi</i>	IVPP WCW-06A-38	Unknown
<i>Archaeoceratops oshimai</i>	IVPP V11114	Unknown
<i>Archaeoceratops oshimai</i>	IVPP V11115	Unknown
<i>Protoceratops andrewsi</i>	IVPP unregistered	Unknown
<i>Protoceratops andrewsi</i>	IVPP unregistered	Unknown
<i>Protoceratops andrewsi</i>	IVPP unregistered	Unknown
<i>Protoceratops andrewsi</i>	AMNH 6424	Unknown
<i>Protoceratops andrewsi</i>	AMNH 6466	Unknown
<i>Leptoceratops gracilis</i>	CMN 8889	Unknown
<i>Chasmosaurus belli</i>	NHMUK R4948	Quadruped
<i>Chasmosaurus belli</i>	ROM 843	Quadruped

<i>Chasmosaurus belli</i>	ROM 839	Quadruped
<i>Chasmosaurus belli</i>	CMN 2245	Quadruped
<i>Chasmosaurus russelli</i>	CMN 2280	Quadruped
<i>Vagaceratops irvinensis</i>	CMN 41357	Quadruped
<i>Centrosaurus apertus</i>	ROM 767	Quadruped
<i>Centrosaurus apertus</i>	ROM 1426	Quadruped
Chasmosaurinae indet.	CMN 8547	Quadruped
<i>Triceratops prorsus</i>	NHMUK R3886-8	Quadruped
<i>Styracosaurus albertensis</i>	CMN 344	Quadruped
Pachyrhinosaurinae indet.	TMP 2002.76.01	Quadruped
<i>Stegoceras validum</i>	UALVP 2	Unknown

Institutional abbreviations.—**AMNH**, American Museum of Natural History, New York, U.S.A.; **CM**, Carnegie Museum, Pittsburgh, Philadelphia, U.S.A.; **CMN**, Canadian Museum of Nature, Ottawa, Ontario, Canada; **IVPP**, Institute of Vertebrate Paleontology and Paleoanthropology; Beijing, People’s Republic of China; **IWCMS**, Dinosaur Isle Museum, Sandown, Isle of Wight, U.K.; **MANCH**, Manchester Museum, Manchester, U.K.; **MB.R.**, Fossil reptiles collection of the Museum für Naturkunde Berlin, Germany; **MNA**, Museum of Northern Arizona, Flagstaff, U.S.A.; **NHMUK**, Natural History Museum, London, U.K.; **OLV**, Université II des Sciences et Techniques du Langedoc, Montpellier, France; **OUMNH**, Oxford University Museum, Oxford, U.K.; **ROM**, Royal Ontario Museum, Toronto, Canada; **SMA**, Sauriermuseum, Aathal, Switzerland; **TMP**, Royal Tyrrell Museum, Drumheller, Alberta, Canada; **UM**, Ulster Museum, National Museums of Northern Ireland, Belfast, U.K.; **UALVP**, University of Alberta Museums, Laboratory for Vertebrate Paleontology, Edmonton, Alberta, Canada; **USNM**, National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.

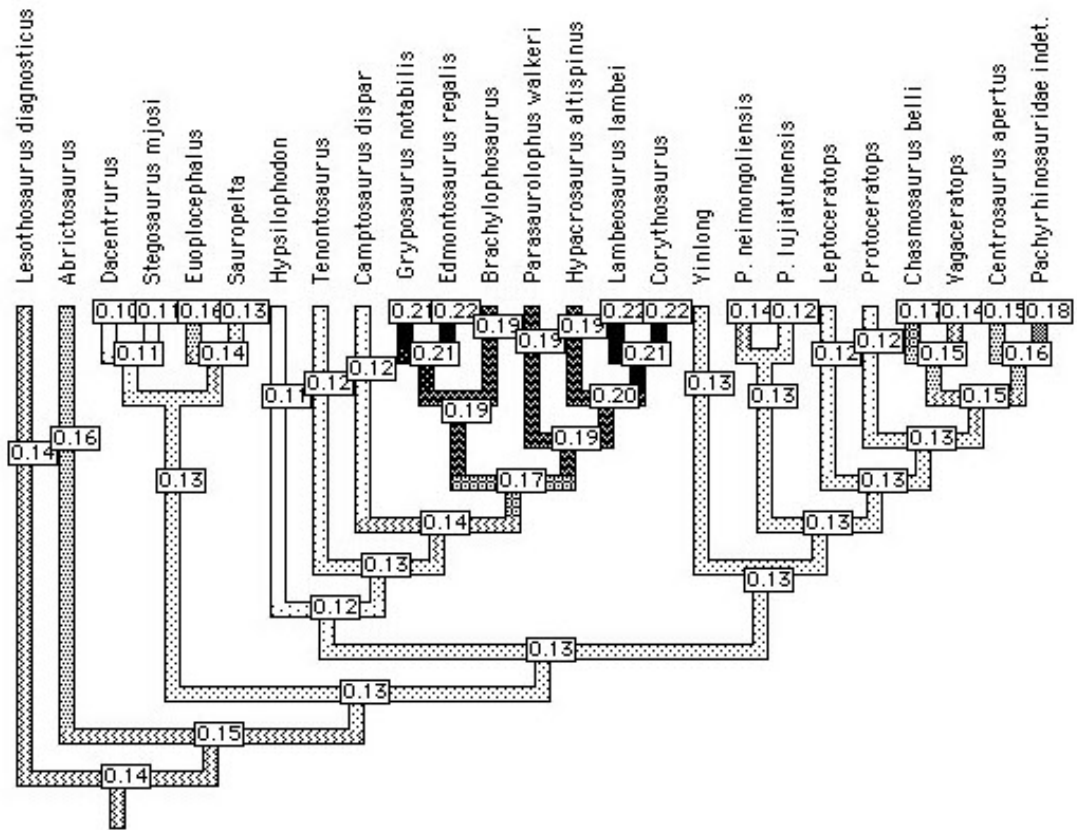


Figure S1. Metacarpal 3 length/forelimb length reconstructed ancestral states and optimization.

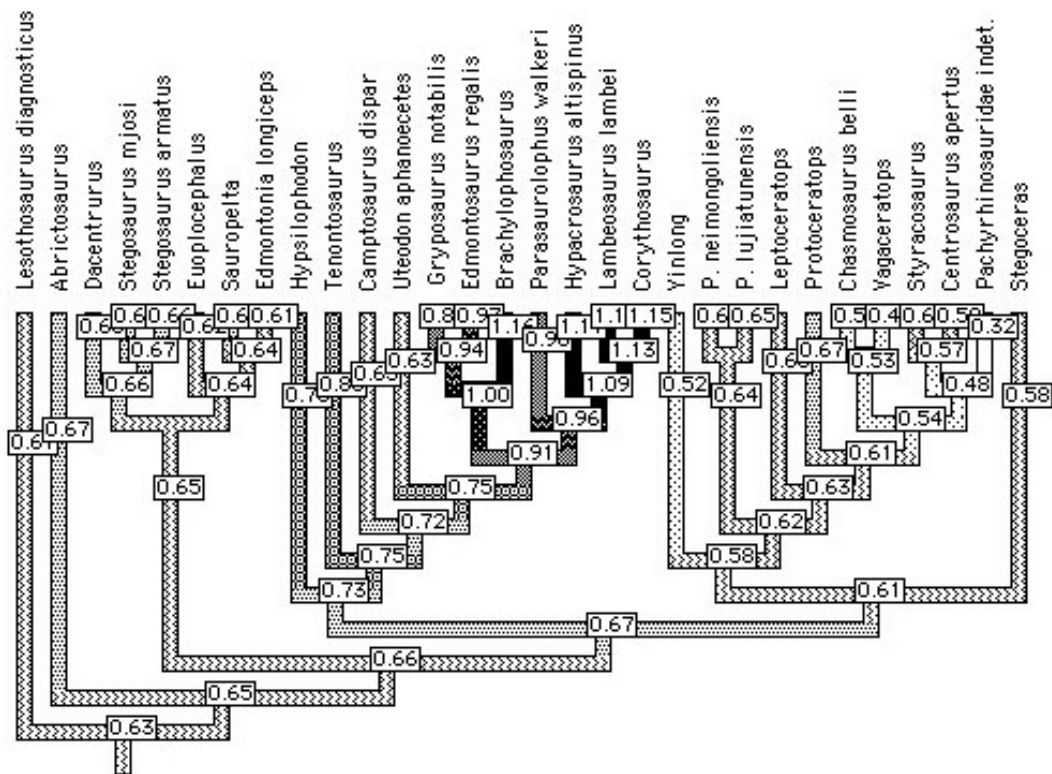


Figure S2. Radius length/humerus length reconstructed ancestral states and optimization.

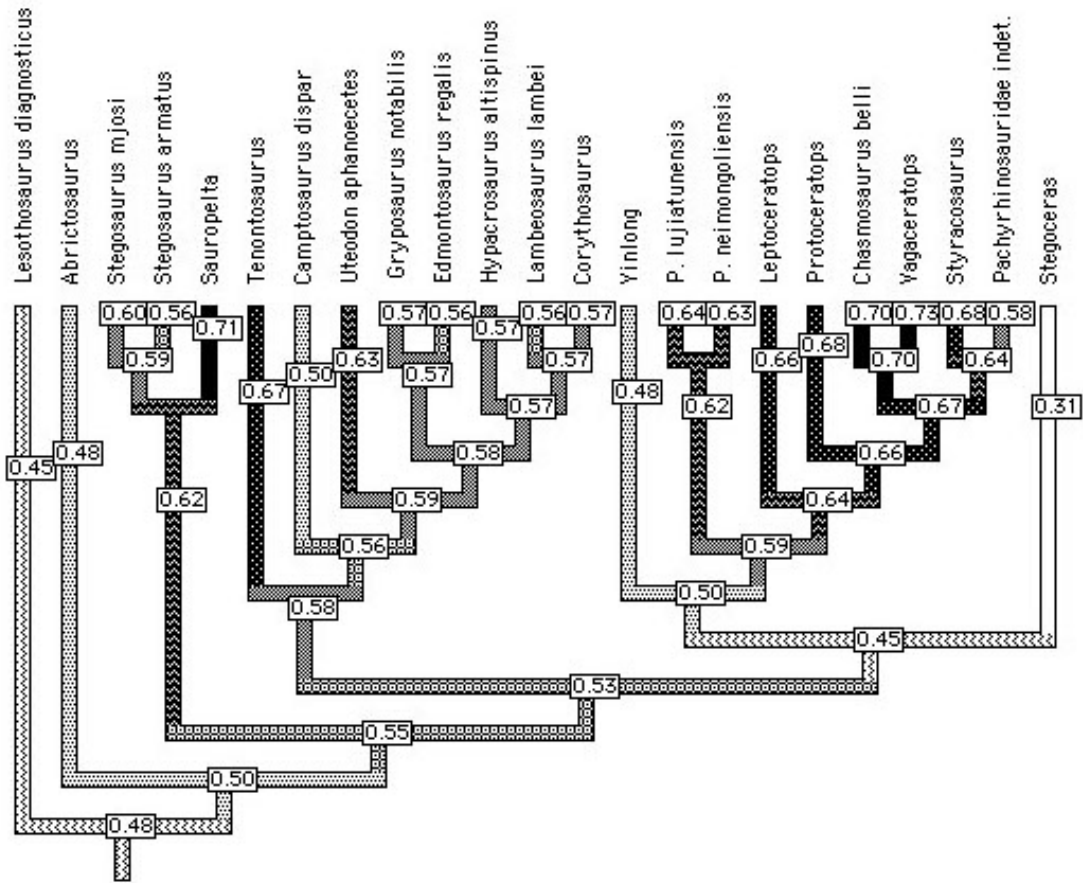


Figure S3. Forelimb length/hind limb length reconstructed ancestral states and optimization.

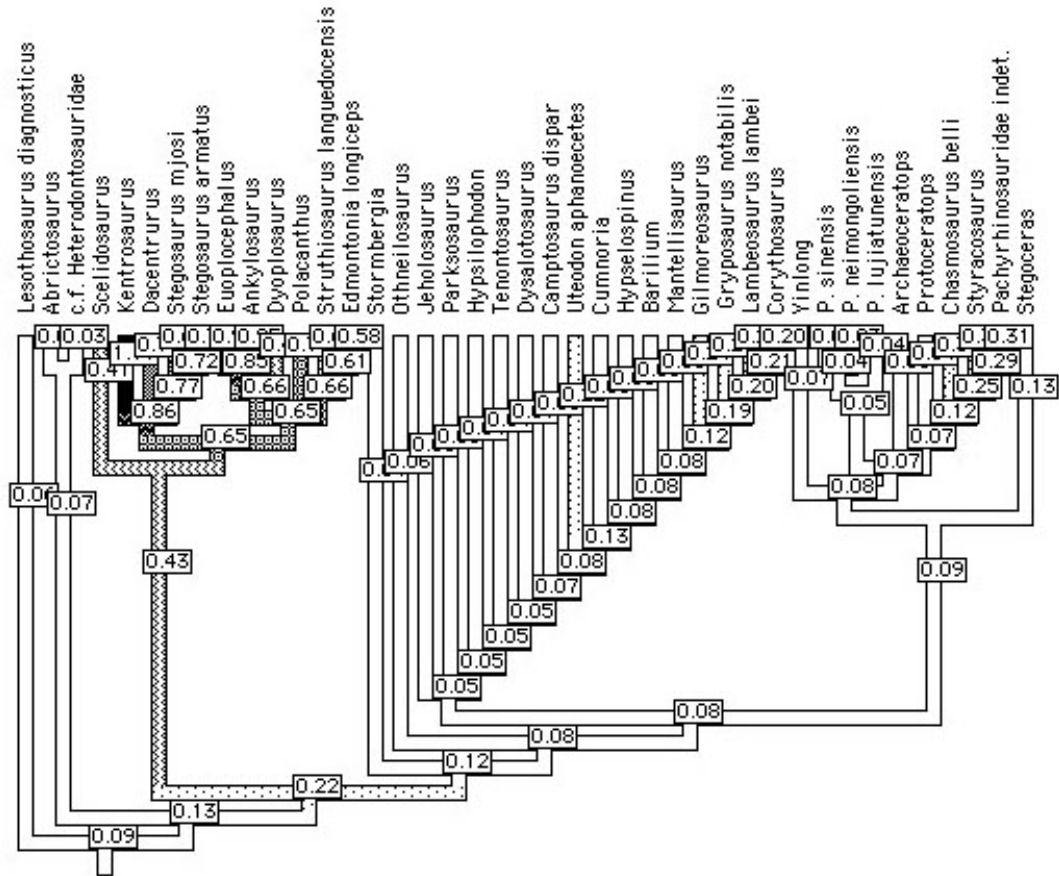


Figure S4. Iliac width/iliac blade length reconstructed ancestral states and optimization.

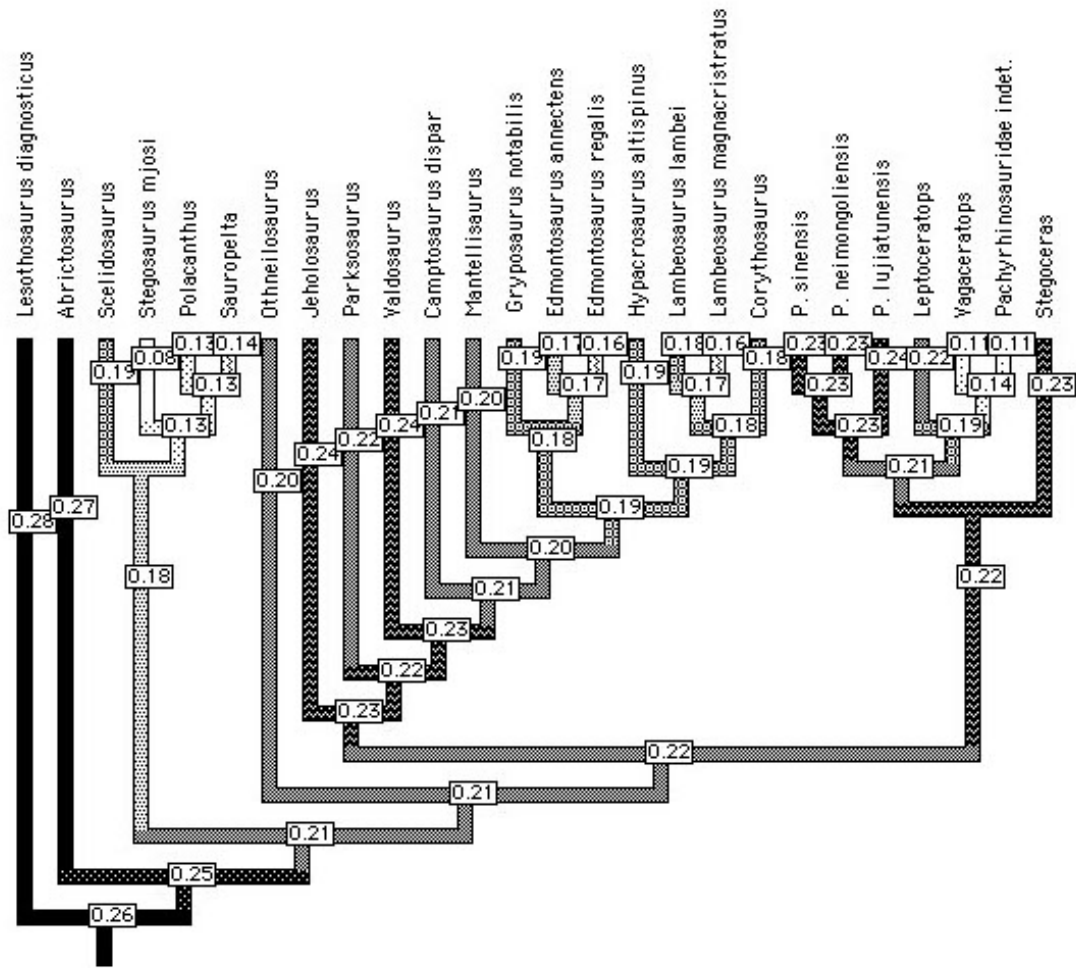


Figure S5. Metatarsal 3 length/hind limb length reconstructed ancestral states and optimization.