**Reeder et al. 2015 Characters** (Quoted directly from supplementary data)

GENERAL FORMAT:

[Character #] ‘([Character # From Reeder et al. 2015]). [Character Description]:

1. [State 1]; (1) [State 2]’

*Note. For many characters, there exists an additional state coded “?” for*  *absence/uncertainty in applying the state to that taxon. References are provided in italics below relevant characters*

1 '(611). Enlarged rostral scale: (0) absent or undifferentiated; (1) present'

2 '(612). Rostral scale: (0) not greatly expanded and dominating anterior portion of head; (1) expanded dorsally (onto top of skull) posteriorly and laterally or dominating anterior portion of head'

3 '(613). Posterior split in rostral scale: (0) absent; (1) present (division along posterior margin of scale near midline)'

4 '(614). External narial opening: (0) enclosed entirely within nasal scale; (1) at edge of nasal scale'

5 '(615). External narial opening: (0) separated from rostral; (1) partially in rostral'

6 '(616). External narial opening: (0) separated from supralabial; (1) partially in supralabial'

7 '(617). Nasal-rostral contact: (0) absent or separated by scales; (1) present - When the narial opening is between scales rather than entirely within a scale state 1 is used when one of these scales bordering the nasal contacts the rostral'

8 '(618). Contact between nasal and supralabial scales: (0) absent (separated by other scales); (1) present - When the narial opening is between scales rather than entirely within a scale state 1 is used when one of these scales bordering the nasal contacts the supralabial'

9 '(619). Minimum number of scales separating the nasal scales medially: (0) none (nasal scales contact medially); (1) one scale; (2) two; (3) three; (4) four or more scale rows - Previously used phylogenetically (in modified form) by Wiens ([48] his char. 22). Ordered'

*Wiens JJ. Polymorphism in systematics and comparative biology. Ann Rev Ecol Syst.*  *1999; 30: 327–362.*

10 '(620). Dorsal cephalic scales: (0) relatively small; (1) enlarged (larger than adjacent neck scales)'

11 '(621). Dorsal cephalic scales: (0) smooth; (1) some or all keeled'

12 '(622). Head scales vertically elongate: (0) no; (1) yes, including scales associated with eye and nostril (extending almost from mouth to top of skull)'

13 '(623). Enlarged frontal scale between orbits: (0) absent; (1) present. Previously used phylogenetically by Wiens ([48]; his char. 18)'

14 '(624). Median contact of frontoparietals: (0) present; (1) absent, frontoparietals reduced and separated by contact of frontal and interparietal. Scored as unknown in taxa lacking frontals, frontoparietals, and an interparietal'

15 '(625). Circumorbital scales (distinct semicircular row of scales bordering orbital region): (0) absent; (1) present'

16 '(626). Enlarged supraoculars: (0) absent; (1) present (scales over eye larger than surrounding scales)'

17 '(627). Supraoculars: (0) two or more rows of scales; (1) single row of enlarged scales between superciliary and frontal. Taxa with multiple rows of scales in this region were given state 0, regardless of whether or not they had well-differentiated supraoculars. Previously used phylogenetically by Wiens ([48] his char. 25)'

*Wiens JJ. Polymorphism in systematics and comparative biology. Ann Rev Ecol Syst.*  *1999; 30: 327–362.*

18 '(628). Single enlarged supraocular scale row between orbit laterally and frontal medially: (0) no; (1) yes, supraciliary scales absent'

19 '(629). Median contact of enlarged supraoculars: (0) absent; (1) present'

20 '(630). Supracilary scales: (0) non-overlapping; (1) overlapping. Used previously in modified form by Etheridge and de Queiroz ([49] their char. 46) and subsequent authors'

*Etheridge R, de Queiroz K. A phylogeny of Iguanidae. In: Estes R, Pregill G, editors. The*  *phylogenetic relationships of the lizard families. Palo Alto: Stanford University Press;*  *1988. pp. 283–367.*

21 '(631). Supralabial scales: (0) not entering orbit; (1) entering orbit. In most squamates examined, one or more enlarged scales (suboculars) separate the supralabials from the rim of the orbital opening. In others, supralabials extend to the orbital opening'

22 '(632). Enlarged subocular scale (elongate scale ventral to orbit): (0) absent (or series of smaller scales); (1) present (single scale larger than surrounding scales). In many taxa, there is a single scale below the orbit that is also part of the labial series bordering the upper jaw (see character 21). In these cases, it is possible that the subocular has entered the labial series or that the labial has shifed into the subocular position, and these taxa were coded as unknown for the presence or absence of a subocular. Used previously phylogenetically in modified form by Etheridge and de Queiroz ([49] their char. 47) and subsequent authors'

*Etheridge R, de Queiroz K. A phylogeny of Iguanidae. In: Estes R, Pregill G, editors. The*  *phylogenetic relationships of the lizard families. Palo Alto: Stanford University Press;*  *1988. pp. 283–367.*

23 '(633). Subocular-supralabial contact: (0) absent, row of one or more scales between scales above lip (supralabials) and below the orbit (suborbitals); (1) present. Taxa lacking any subocular scales below the eye (e.g., many snakes) were coded as inapplicable'

24 '(634). Enlarged interparietal scale: (0) absent; (1) present (scale distinctly larger than surrounding head scales present over parietal region of skull). Used in modified form by Etheridge and de Queiroz ([49] their char. 45) and subsequent authors'

*Etheridge R, de Queiroz K. A phylogeny of Iguanidae. In: Estes R, Pregill G, editors. The*  *phylogenetic relationships of the lizard families. Palo Alto: Stanford University Press;*  *1988. pp. 283–367.*

25 '(635). Temporal region covered almost exclusively by pair of enlarged temporal scales: (0) no; (1) yes. Derived state is mostly in advanced snakes'

26 '(636). Heat-sensing pit in loreal region: (0) absent; (1) present'

27 '(637). Mouth: (0) large, extending posterior to eye; (1) greatly reduced, posterior terminus at or anterior to level of eye.'

28 '(638). Groove allowing tongue to be extruded when mouth is closed: (0) absent; (1) groove present in rostral (sometimes in mental also, but too difficult to score consistently as a separate state). The derived state is found in snakes.'

29 '(639). Eye: (0) visible externally; (1) not visible externally; Previously used phylogenetically (in modified form) by Kearney ([50] her char. 10). Derived state is found only in Rhineura.'

*Kearney M. Systematics and evolution of the Amphisbaenia: a phylogenetic hypothesis*  *based on morphological evidence from fossil and recent forms. Herpetol Mon. 2003; 17:*  *1–75.*

30 '(640). Eye surrounded by single scale: (0) no, multiple scales; (1) single scale. Previously used phylogenetically (in modified form) by Lee and Scanlon ([51] their char. 253).'

*Lee MSY, Scanlon JD. Snake phylogeny based on osteology, soft anatomy and ecology.*  *Biol. Rev. 2002; 77:**333–401.*

31 '(641). Fleshy eyelids: (0) present; (1) absent. Previously used phylogenetically (in modified form) by Lee and Scanlon ([51] their char. 253).'

*Lee MSY, Scanlon JD. Snake phylogeny based on osteology, soft anatomy and ecology.*  *Biol. Rev. 2002; 77:**333–401.*

32 '(642). Lower eyelid scales: (0) homogeneous; (1) some enlarged scales.'

33 '(643). Transparent spectacle in lower eyelid scales: (0) absent; (1) present.'

34 '(644). Thick granular eyelid covering eye except for small opening for pupil (chamaeleon condition): (0) absent; (1) present; Used previously phylogenetically by Estes et al. ([52] p. 199).'

*Estes R, de Queiroz K, Gauthier JA. Phylogenetic relationships within the Squamate In:*  *Estes R, Pregill G, editors. The phylogenetic relationships of the lizard families. Palo*  *Alto: Stanford University Press; 1988. pp. 119–281.*

35 '(645). External ear opening: (0) present; (1) absent; Previously used phylogenetically by Estes et al - 48.'

*Estes R, de Queiroz K, Gauthier JA. Phylogenetic relationships within the Squamate In:*  *Estes R, Pregill G, editors. The phylogenetic relationships of the lizard families. Palo*  *Alto: Stanford University Press; 1988. pp. 119–281.*

36 '(646). Tympanum: (0) large and superficial; (1) small and inset; Used previously phylogenetically by Estes et al. ([52] and noted by McDowell and Bogert [36]).'

*Estes R, de Queiroz K, Gauthier JA. Phylogenetic relationships within the Squamate In:*  *Estes R, Pregill G, editors. The phylogenetic relationships of the lizard families. Palo*  *Alto: Stanford University Press; 1988. pp. 119–281.*

*McDowell SB, Bogert CM. The systematic position of Lanthanotus and the affinities of*  *the anguimorph lizards. Bull Am Mus Nat Hist. 1954; 105: 1–142.*

37 '(647). External ear opening: (0) entirely or mostly uncovered; (1) partially covered by fleshy lobule; (2) partially covered by scales only, no fleshy lobule. Unordered.'

38 '(648). Complex dewlap apparatus (gular fan), in males: (0) absent; (1) present, extensive flap of skin on throat, usually with modified scales.'

39 '(649). Mental scale: (0) entire; (1) with a partial split at the posterior end. Previously noted by Frost and Etheridge ([53] from E. Williams, pers. comm.).'

*Frost DR, Etheridge R. A phylogenetic analysis and taxonomy of iguanian lizards. Misc.*  *Publ. Univ. Kansas 1989; 81: 1–65.*

40 '(650). Elongate postmentals: (0) absent; (1) present.'

41 '(651). Postmentals (scales immediately posterior to mental): (0) two (enlarged scales sometimes separated by additional scales) or more scales immediately posterior to mental; (1) one, single unpaired scale immediately posterior to mental.'

42 '(652). Enlarged scales medial to infralabials: (0) present; (1) absent, scales in chin more-or-less homogeneous.'

43 '(653). Infralabials, anteriormost pair(s): (0) separate medially; (1) one row contacting medially posterior to mental; (2) two rows contacting medially. It is possible that the medially contacting infralabials actually represent postmentals that have shifted their position. Ordered.'

44 '(654). Infralabial and supralabial scales: (0) not greatly expanded; (1) greatly expanded, with single pair of sublabials covering most of chin region (i.e., dibamids).'

45 '(655). Mental groove: (0) absent; (1) present, a distinct infolding of skin and scales along the anterior midline of the chin region.'

46 '(656). Gular fold: (0) present or complete; (1) incomplete; (2) absent. Ordered. Previously used phylogenetically by Etheridge and de Queiroz ([49] their char. 43) and subsequent authors.'

*Etheridge R, de Queiroz K. A phylogeny of Iguanidae. In: Estes R, Pregill G, editors. The*  *phylogenetic relationships of the lizard families. Palo Alto: Stanford University Press;*  *1988. pp. 283–367.*

47 '(657). Body scales: (0) not arranged in non-overlapping rings; (1) annulated, arranged in non-overlapping rows. Previously used phylogenetically by Kearney ([50] her char. 3).'

*Kearney M. Systematics and evolution of the Amphisbaenia: a phylogenetic hypothesis*  *based on morphological evidence from fossil and recent forms. Herpetol Mon. 2003; 17:*  *1–75.*

48 '(658). Varanus-type scale on dorsum, with small scale surrounded by tiny granular scales: (0) absent; (1) present.'

49 '(659). Dorsal scales: (0) homogeneous, lacking enlarged scales; (1) heterogeneous, with enlarged scales separated by smaller scales, either in rows or scattered.'

50 '(660). Dorsal body scales: (0) small, granular, non-overlapping; (1) mucronate (pointed, overlapping); (2) cycloid (rounded, overlapping); (3) rectangular. Unordered. Expanded from char. 148 of Estes et al. [52].'

*Estes R, de Queiroz K, Gauthier JA. Phylogenetic relationships within the Squamate In:*  *Estes R, Pregill G, editors. The phylogenetic relationships of the lizard families. Palo*  *Alto: Stanford University Press; 1988. pp. 119–281.*

51 '(661). Dorsal body scales: (0) all smooth; (1) some or all keeled.'

52 '(662). Dorsals, with longitudinal ridges in addition to mid-dorsal keels: (0) absent (including species lacking keels); (1) present'

53 '(663). Enlarged middorsal scale row: (0) middorsal scales same size as surrounding scales; (1) middorsal scales enlarged relative to surrounding scales in both sexes; (2) sexually dimorphic, mid-dorsals enlarged in males. Unordered. Expanded and modified from char. 146 of Estes et al. [52].'

*Estes R, de Queiroz K, Gauthier JA. Phylogenetic relationships within the Squamate In:*  *Estes R, Pregill G, editors. The phylogenetic relationships of the lizard families. Palo*  *Alto: Stanford University Press; 1988. pp. 119–281.*

54 '(664). Nuchal crest of enlarged scales: (0) absent; (1) present in both sexes; (2) sexually dimorphic, mid-dorsals enlarged in males. Unordered. Has similar distribution to that of mid-dorsal scale row, but clearly not identical.'

55 '(665). Lateral body scales: (0) granular, non-overlapping; (1) imbricate overlapping. Although this may seem redundant with the condition of the dorsal scales, several taxa have enlarged and imbricate dorsal scales but granular lateral scales.'

56 '(666). Lateral fold along side of body: (0) absent; (1) present (often associated with row of granular scales in species with larger scales). Previously used phylogenetically in squamates by Estes et al. [52].'

*Estes R, de Queiroz K, Gauthier JA. Phylogenetic relationships within the Squamate In:*  *Estes R, Pregill G, editors. The phylogenetic relationships of the lizard families. Palo*  *Alto: Stanford University Press; 1988. pp. 119–281.*

57 '(667). Gastrosteges (enlarged mid-ventral scale row in snakes): (0) absent, multiple scale rows; (1) present, single mid-ventral scale row distinctly larger than surrounding scale rows. Previously used phylogenetically (in modified form) by Lee and Scanlon ([51]; their char. 255).'

*Lee MSY, Scanlon JD. Snake phylogeny based on osteology, soft anatomy and ecology.*  *Biol. Rev. 2002; 77:**333–401.*

58 '(668). Ventrals: (0) same size as adjacent laterals; (1) at least some distinctly larger than adjacent laterals.'

59 '(669). Ventral body scales: (0) mostly small and granular; (1) large and flat. Note that this character is independent of the preceding character, because scales can be large and flat and still be the same size as the adjacent laterals.'

60 '(670). Ventral scales: (0) all smooth; (1) some or all keeled.'

61 '(671). Ventrals, posterior edge: (0) cycloid, mucronate, or otherwise rounded; (1) square (posterior margin more-or-less straight). Some snakes with gastrosteges have variation that approaches the condition in state 1, but were coded as 0.'

62 '(672). Femoral pores: (0) absent; (1) present in both sexes; (2) sexually dimorphic. Unordered. In some cases, femoral and preanal pores may be difficult to distinguish (e.g. Gekko gecko, Takydromus ocellatus). In general, pores on the legs were considered femoral pores, and pores between the legs were considered preanals, but pores that extended from the legs onto the preanal region were considered femorals. Taxa lacking hindlimbs were coded as unknown. Previously used phylogenetically by Estes et al. ([52] but noted by Camp [54]), their character 144.'

*Estes R, de Queiroz K, Gauthier JA. Phylogenetic relationships within the Squamate In: Estes R, Pregill G, editors. The phylogenetic relationships of the lizard families. Palo Alto: Stanford University Press; 1988. pp. 119–281.*

*Camp CL. Classification of the lizards. Bull. Am. Mus. Nat. Hist. 1923; 48: 289–481.*

63 '(673). Preanal pores: (0) absent; (1) present. Previously used phylogenetically by Estes et al. [52], their character 144.'

*Estes R, de Queiroz K, Gauthier JA. Phylogenetic relationships within the Squamate In:*  *Estes R, Pregill G, editors. The phylogenetic relationships of the lizard families. Palo*  *Alto: Stanford University Press; 1988. pp. 119–281.*

64 '(674). Tail tip: (0) pointed, tapered; (1) blunt and rounded'

65 '(675). Small sharply pointed spike at posterior tail tip: (0) absent; (1) present.'

66 '(676). Tail shape (cross-section): (0) dorsoventrally flattened (depressed); (1) rounded; (2) laterally compressed. Ordered.'

67 '(677). Caudal scales: (0) approximately same size as dorsal body scales; (1) distinctly larger than dorsal body scales'

68 '(678). Caudals (dorsal): (0) smooth; (1) mostly keeled.'

69 '(679). Caudal scales: (0) not arranged in non-overlapping vertical rows; (1) annulated, arranged in non-overlapping vertical rows.'

70 '(680). Enlarged preanal scales: (0) absent; (1) present (preanals enlarged relative to adjacent ventrals).'

71 '(681). Anal plate: (0) two or more scales; (1) single plate. Species without a distinct anal plate but with multiple scales in the pre-anal region were coded as having state 0. Previously used phylogenetically by Lee and Scanlon ([51] their char. 257).'

*Lee MSY, Scanlon JD. Snake phylogeny based on osteology, soft anatomy and ecology.*  *Biol. Rev. 2002; 77:**333–401.*

72 '(682). Enlarged postanal scales (males): (0) absent; (1) present (some scales posterior to vent greatly enlarged relative to adjacent scales).'

73 '(683). Lateral postanal tubercles: (0) absent; (1) present (enlarged scale or scales on medial surface of anterior end of tail).'

74 '(684). Subcaudals (scales on ventral mid-line of tail): (0) divided, two or more scale rows; (1) some single, some divided; (2) all single. Ordered. Previously used phylogenetically (in modified form) by Lee and Scanlon ([51] their char. 256).'

*Lee MSY, Scanlon JD. Snake phylogeny based on osteology, soft anatomy and ecology.*  *Biol. Rev. 2002; 77:**333–401.*

*Note. Characters 75-81 were excluded from the final morphospace generation due to presence/absence of limbs confounding MCA analysis.*

75 '(685). External hindlimb: (0) present; (1) absent in both sexes; (2) sexually dimorphic, present in males, absent in females. Unordered. Taxa in which hindlimbs were observed in all individuals but the sex was uncertain were coded as having state 0.'

76 '(686). External hindlimbs: (0) cylindrical; (1) flattened and flaplike. Taxa having the fully-developed limbs and those having only a claw were both coded as having state 0.'

77 '(687). Expanded toe pads: (0) absent; (1) present. Previously used phylogenetically by Etheridge and de Queiroz ([49] their char. 40) and subsequent authors.'

*Etheridge R, de Queiroz K. A phylogeny of Iguanidae. In: Estes R, Pregill G, editors. The*  *phylogenetic relationships of the lizard families. Palo Alto: Stanford University Press;*  *1988. pp. 283–367.*

78 '(688). Number of rows of subdigital scales along mid-ventral surface of digits (manus): (0) one; (1) two or more (some or all scales). Previously used phylogenetically by Estes et al. (1988) and Etheridge and de Queiroz [49].'

*Etheridge R, de Queiroz K. A phylogeny of Iguanidae. In: Estes R, Pregill G, editors. The*  *phylogenetic relationships of the lizard families. Palo Alto: Stanford University Press;*  *1988. pp. 283–367.*

*Etheridge R, de Queiroz K. A phylogeny of Iguanidae. In: Estes R, Pregill G, editors. The*  *phylogenetic relationships of the lizard families. Palo Alto: Stanford University Press;*  *1988. pp. 283–367.*

79 '(689). Keels on subdigital scales (hand, longest finger): (0) absent; (1) present, Used previously phylogenetically by Etheridge and de Queiroz ([49] their char. 39).'

*Etheridge R, de Queiroz K. A phylogeny of Iguanidae. In: Estes R, Pregill G, editors. The*  *phylogenetic relationships of the lizard families. Palo Alto: Stanford University Press;*  *1988. pp. 283–367.*

80 '(690). Digits connected in groups of 2 and 3 by skin (chameleon “mittens”): (0) no; (1) yes; Previously used phylogenetically (in modified form) by Estes et al. ([52] p. 198).'

*Etheridge R, de Queiroz K. A phylogeny of Iguanidae. In: Estes R, Pregill G, editors. The*  *phylogenetic relationships of the lizard families. Palo Alto: Stanford University Press;*  *1988. pp. 283–367.*

81 '(691). Claws: (0) not covered by sheath of scales; (1) entirely or mostly covered by sheath of scales.'

**Proposed Characters**

82 Frontal scale shape: (0) Circular; (1) Elliptical; (2) Diamond; (3) Rectangular; (4) Polygonal.

83 Frontal scale texture: (0) Flat; (1) Bumpy; (2) Granular; (3) Streaked; (4) Irregular; (5) Pointed.

84 Frontal scale overlap: (0) Absent; (1) Present; (2) Free Margin.

85 Chalcidine frontal scale pattern: (0) Absent; (1) Present.

*Greer AE, Shea GM. A Major New Head Scale Character in Non-Lygosomine Scincid*  *Lizards. Journal of Herpetology; 2000. 34, pp. 629-634.*

86 Internasal scale shape: (0) Circular; (1) Elliptical; (2) Diamond; (3) Rectangular; (4) Polygonal.

87 Internasal scale texture: (0) Flat; (1) Bumpy; (2) Granular; (3) Streaked; (4) Irregular; (5) Pointed.

88 Internasal scale keel: (0) Absent; (1) Keel; (2) Double or multiple keel.

89 Internasal scale keel type: (0) Partial keel on posterior edge; (1) Partial keel centered on scale; (2) Partial keel on anterior edge; (3) Keeling entire.

90 Loreal scale shape: (0) Circular; (1) Elliptical; (2) Diamond; (3) Rectangular; (4) Polygonal.

91 Loreal scale texture: (0) Flat; (1) Bumpy; (2) Granular; (3) Streaked; (4) Irregular; (5) Pointed.

92 Loreal scale keel: (0) Absent; (1) Keel; (2) Double or multiple keel.

93 Loreal scale keel type: (0) Partial keel on posterior edge; (1) Partial keel centered on scale; (2) Partial keel on anterior edge; (3) Keeling entire.

94 Loreal scale arrangement: (0) Random or questionable; (1) Annular arrangement, distinct lines perpendicular to the body axis; (2) Oblique arrangement, clear diagonal lines across a segment; (3) Matrix arrangement.

95 Loreal scale overlap: (0) Absent; (1) Present; (2) Free Margin.

96 Loreal scale enlargement: (0) Absent; (1) Present.

97 Supraocular scale shape: (0) Circular; (1) Elliptical; (2) Diamond; (3) Rectangular; (4) Polygonal.

98 Supraocular scale texture: (0) Flat; (1) Bumpy; (2) Granular; (3) Streaked; (4) Irregular; (5) Pointed.

99 Supraocular scale keel: (0) Absent; (1) Keel; (2) Double or multiple keel.

100 Supraocular scale keel type: (0) Partial keel on posterior edge; (1) Partial keel centered on scale; (2) Partial keel on anterior edge; (3) Keeling entire.

101 Supraocular scale arrangement: (0) Random or questionable; (1) Annular arrangement, distinct lines perpendicular to the body axis; (2) Oblique arrangement, clear diagonal lines across a segment; (3) Matrix arrangement.

102 Supraocular scale overlap: (0) Absent; (1) Present; (2) Free Margin.

103 Postmental scale shape: (0) Circular; (1) Elliptical; (2) Diamond; (3) Rectangular; (4) Polygonal.

104 Postmental scale texture: (0) Flat; (1) Bumpy; (2) Granular; (3) Streaked; (4) Irregular; (5) Pointed.

105 Postmental scale keel: (0) Absent; (1) Keel; (2) Double or multiple keel.

106 Postmental scale keel type: (0) Partial keel on posterior edge; (1) Partial keel centered on scale; (2) Partial keel on anterior edge; (3) Keeling entire.

107 Postmental scale overlap: (0) Absent; (1) Present; (2) Free Margin.

108 Dorsal neck scale homogeneity: (0) Scales more or less homogenous; (1) Some or all scales vary in morphological traits.

109 Dorsal neck scale shape: (0) Circular; (1) Elliptical; (2) Diamond; (3) Rectangular; (4) Polygonal.

110 Dorsal neck scale texture: (0) Flat; (1) Bumpy; (2) Granular; (3) Streaked; (4) Irregular; (5) Pointed.

111 Dorsal neck scale keel: (0) Absent; (1) Keel; (2) Double or multiple keel.

112 Dorsal neck scale keel type: (0) Partial keel on posterior edge; (1) Partial keel centered on scale; (2) Partial keel on anterior edge; (3) Keeling entire.

113 Dorsal neck scale arrangement: (0) Random or questionable; (1) Annular arrangement, distinct lines perpendicular to the body axis; (2) Oblique arrangement, clear diagonal lines across a segment; (3) Matrix arrangement.

114 Dorsal neck scale overlap: (0) Absent; (1) Present; (2) Free Margin.

115 Lateral neck scale shape: (0) Circular; (1) Elliptical; (2) Diamond; (3) Rectangular; (4) Polygonal.

116 Lateral neck scale texture: (0) Flat; (1) Bumpy; (2) Granular; (3) Streaked; (4) Irregular; (5) Pointed.

117 Lateral neck scale keel: (0) Absent; (1) Keel; (2) Double or multiple keel.

118 Lateral neck scale keel type: (0) Partial keel on posterior edge; (1) Partial keel centered on scale; (2) Partial keel on anterior edge; (3) Keeling entire.

119 Lateral neck scale arrangement: (0) Random or questionable; (1) Annular arrangement, distinct lines perpendicular to the body axis; (2) Oblique arrangement, clear diagonal lines across a segment; (3) Matrix arrangement.

120 Lateral neck scale overlap: (0) Absent; (1) Present; (2) Free Margin.

121 Ventral neck scale shape: (0) Circular; (1) Elliptical; (2) Diamond; (3) Rectangular; (4) Polygonal.

122 Ventral neck scale texture: (0) Flat; (1) Bumpy; (2) Granular; (3) Streaked; (4) Irregular; (5) Pointed.

123 Ventral neck scale keel: (0) Absent; (1) Keel; (2) Double or multiple keel.'

124 Ventral neck scale keel type: (0) Partial keel on posterior edge; (1) Partial keel centered on scale; (2) Partial keel on anterior edge; (3) Keeling entire.

125 Ventral neck scale arrangement: (0) Random or questionable; (1) Annular arrangement, distinct lines perpendicular to the body axis; (2) Oblique arrangement, clear diagonal lines across a segment; (3) Matrix arrangement.

126 Ventral neck scale overlap: (0) Absent; (1) Present; (2) Free Margin.

127 Dorsal body scale shape: (0) Circular; (1) Elliptical; (2) Diamond; (3) Rectangular; (4) Polygonal.

128 Dorsal body scale texture: (0) Flat; (1) Bumpy; (2) Granular; (3) Streaked; (4) Irregular; (5) Pointed.

129 Dorsal body scale keel: (0) Absent; (1) Keel; (2) Double or multiple keel.

130 Dorsal body scale keel type: (0) Partial keel on posterior edge; (1) Partial keel centered on scale; (2) Partial keel on anterior edge; (3) Keeling entire.

131 Dorsal body scale arrangement: (0) Random or questionable; (1) Annular arrangement, distinct lines perpendicular to the body axis; (2) Oblique arrangement, clear diagonal lines across a segment; (3) Matrix arrangement.

132 Dorsal body scale overlap: (0) Absent; (1) Present; (2) Free Margin.

133 Lateral body scale shape: (0) Circular; (1) Elliptical; (2) Diamond; (3) Rectangular; (4) Polygonal.

134 Lateral body scale texture: (0) Flat; (1) Bumpy; (2) Granular; (3) Streaked; (4) Irregular; (5) Pointed.

135 Lateral body scale keel: (0) Absent; (1) Keel; (2) Double or multiple keel.

136 Lateral body scale keel type: (0) Partial keel on posterior edge; (1) Partial keel centered on scale; (2) Partial keel on anterior edge; (3) Keeling entire.

137 Lateral body scale arrangement: (0) Random or questionable; (1) Annular arrangement, distinct lines perpendicular to the body axis; (2) Oblique arrangement, clear diagonal lines across a segment; (3) Matrix arrangement.

138 Lateral body scale overlap: (0) Absent; (1) Present; (2) Free Margin.

139 Ventral body scale shape: (0) Circular; (1) Elliptical; (2) Diamond; (3) Rectangular; (4) Polygonal.

140 Ventral body scale texture: (0) Flat; (1) Bumpy; (2) Granular; (3) Streaked; (4) Irregular; (5) Pointed.

141 Ventral body scale keel: (0) Absent; (1) Keel; (2) Double or multiple keel.

142 Ventral body scale keel type: (0) Partial keel on posterior edge; (1) Partial keel centered on scale; (2) Partial keel on anterior edge; (3) Keeling entire.

143 Ventral body scale arrangement: (0) Random or questionable; (1) Annular arrangement, distinct lines perpendicular to the body axis; (2) Oblique arrangement, clear diagonal lines across a segment; (3) Matrix arrangement.

144 Ventral body scale overlap: (0) Absent; (1) Present; (2) Free Margin.'

*Note. Characters 145-158 were excluded from the final morphospace generation due to presence/absence of limbs confounding MCA analysis.*

145 Left dorsal hind leg scale shape: (0) Circular; (1) Elliptical; (2) Diamond; (3) Rectangular; (4) Polygonal.

146 Left dorsal hind leg scale texture: (0) Flat; (1) Bumpy; (2) Granular; (3) Streaked; (4) Irregular; (5) Pointed.

147 Left dorsal hind leg scale keel: (0) Absent; (1) Keel; (2) Double or multiple keel.

148 Left dorsal hind leg scale keel type: (0) Partial keel on posterior edge; (1) Partial keel centered on scale; (2) Partial keel on anterior edge; (3) Keeling entire.

149 Left dorsal hind leg scale arrangement: (0) Random or questionable; (1) Annular arrangement, distinct lines perpendicular to the body axis; (2) Oblique arrangement, clear diagonal lines across a segment; (3) Matrix arrangement.

150 Left dorsal hind leg scale overlap: (0) Absent; (1) Present; (2) Free Margin.

151 Left ventral hind foot scale shape: (0) Circular; (1) Elliptical; (2) Diamond; (3) Rectangular; (4) Polygonal.

152 Left ventral hind foot scale texture: (0) Flat; (1) Bumpy; (2) Granular; (3) Streaked; (4) Irregular; (5) Pointed.

153 Left ventral hind foot scale keel: (0) Absent; (1) Keel; (2) Double or multiple keel.

154 Left ventral hind foot scale keel type: (0) Partial keel on posterior edge; (1) Partial keel centered on scale; (2) Partial keel on anterior edge; (3) Keeling entire.

155 Left ventral hind foot scale arrangement: (0) Random or questionable; (1) Annular arrangement, distinct lines perpendicular to the body axis; (2) Oblique arrangement, clear diagonal lines across a segment; (3) Matrix arrangement.

156 Left ventral hind foot scale overlap: (0) Absent; (1) Present; (2) Free Margin.

157 Digit scale justification: (0) Random or questionable; (1) Lateral/medial justification; (2) Proximal/distal justification; (3) Fully justified.

158 Digit scale overlap: (0) Absent; (1) Present; (2) Free margin.

159 Dorsal caudal scale shape: (0) Circular; (1) Elliptical; (2) Diamond; (3) Rectangular; (4) Polygonal.

160 Dorsal caudal scale texture: (0) Flat; (1) Bumpy; (2) Granular; (3) Streaked; (4) Irregular; (5) Pointed.

161 Dorsal caudal scale keel: (0) Absent; (1) Keel; (2) Double or multiple keel.

162 Dorsal caudal scale keel type: (0) Partial keel on posterior edge; (1) Partial keel centered on scale; (2) Partial keel on anterior edge; (3) Keeling entire.

163 Dorsal caudal scale arrangement: (0) Random or questionable; (1) Annular arrangement, distinct lines perpendicular to the body axis; (2) Oblique arrangement, clear diagonal lines across a segment; (3) Matrix arrangement.

164 Dorsal caudal scale overlap: (0) Absent; (1) Present; (2) Free Margin.

165 Ventral caudal scale shape: (0) Circular; (1) Elliptical; (2) Diamond; (3) Rectangular; (4) Polygonal.

166 Ventral caudal scale texture: (0) Flat; (1) Bumpy; (2) Granular; (3) Streaked; (4) Irregular; (5) Pointed.

167 Ventral caudal scale keel: (0) Absent; (1) Keel; (2) Double or multiple keel.

168 Ventral caudal scale keel type: (0) Partial keel on posterior edge; (1) Partial keel centered on scale; (2) Partial keel on anterior edge; (3) Keeling entire.

169 Ventral caudal scale arrangement: (0) Random or questionable; (1) Annular arrangement, distinct lines perpendicular to the body axis; (2) Oblique arrangement, clear diagonal lines across a segment; (3) Matrix arrangement.

170 Ventral caudal scale overlap: (0) Absent; (1) Present; (2) Free Margin.

171 Apical pits: (0) Absent; (1) Present.

172 Osteoderms: (0) Absent; (1) Present.

173 Spines: (0) Absent; (1) Present, pointed morphology of the neck/body when compared to surrounding scales.

174 Horns: (0) Absent; (1) Present, distinct appendages of the skull when compared to surrounding scales.

175 Subtympanic Shield, as seen in *Iguana iguana*: (0) Absent; (1) Present.

176 Supraocular Disk: (0) Absent; (1) Present.

177 Sensory structures on head: (0) Absent; (1) Present.

178 Sensory structures on body: (0) Absent; (1) Present.

179 Body scale formation: (0) Overlap or scale end directed towards posterior; (1) Overlap directed 45 degrees toward midline; (2) Overlap directed completely toward midline (*Acanthosaura* condition); (3) Overlap directed towards varanus-like enlarged scales.

180 Mid-ventral Crest, as seen in *Chamaeleo*: (0) Absent; (1) Present.