
Electronic appendices are refereed with the text. However, no attempt has been made to impose a uniform editorial style on the electronic appendices.

**Arizonasaurus and its implications for archosaur divergence**

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**Electronic Appendix:**

A strict consensus of the two most parsimonious cladograms was created using Paup 4.0 (Swofford 2001). Nine taxa and 24 characters were used in the analysis. A CI of 0.72 and a RI of 0.79 were obtained for the two most parsimonious trees. Bootstrap values, given in parentheses, are from 100 replications and the decay values are also given. **A.** Archosauria (loss of palatal teeth) **B.** Pseudosuchia (crocodile-normal ankle, ilium sub-horizontal/down turned, crocodylian femur) **C.** Rauisuchia (interlocking premaxilla-maxilla articulation, a supraacetabular crest on the ilium (Parrish 1993), a well-developed acetabular rim) **D.** Poposauria (lack of osteoderms, completely fused ischia, three or more sacral vertebrae, sacral ribs that articulate with the anterior pointing flange of the ilium).
Character List:

1. Dermal osteoderms present (0) or absent (1) (Contra Gauthier 1986). Multiple partial skeletons of *Poposaurus, "Chatterjeea"* and *Arizonasaurus* suggest that osteoderms are not present in all three animals.

2. Ischio-pubis contact present (0) or absent (1) (Modified from Benton and Clark 1988).

3. Ischia fusion weak (0) strong, but doesn’t have complete proximal fusion (1) or strong, complete proximal fusion (2).

4. Subnarial fenestra absent (0) absent or well developed (1) as part of the joint between premaxilla and maxilla (Benton and Clark 1988; Parrish 1993; Juul 1994, Benton 1999).

5. Anterior maxilla process that articulates with the premaxilla absent (0) present (1) (Parish 1993).

6. Very tall neural spines absent (0) or present (1).

7. Sacral ribs articulations on ilium strong/broad (0) or weak/narrow (1) (suggested, but not coded by Gower 2000).

8. Sacral vertebrae two (0) or three or more (1) (Gauthier 1986; Juul 1994; suggested, but not coded by Gower 2000).

9. Distal ischium plate-like (0) rod-shaped (1) or laterally compressed (2).

10. Pubic boot absent (0) or present (1) (Gauthier 1986; Juul 1994; Benton 1999).

11. Fourth trochanter on femur bump-like (0) or strap-like (1). (Gauthier 1986; Benton and Clark 1988; Benton 1999; Sereno 1991; Juul 1994; Benton 1999).

12. Rugose crest or running mediolaterally, superior to the actabular rim absent (0) or present (1) (Modified from Parrish 1993). For the purposes of this study, any "swelling," "thickening," "buttress," or crest running mediolaterally, superior to the superactabular rim
is considered derived.

13. Acetabulum medial wall thick (0) or thin and possibly perforated (1).
14. Anteriorly-directed flange on super acetabular crest absent (0) small (1) or large (2).
   (suggested, but not coded by Gower 2000)
15. Sacral rib doesn’t articulate with anteriorly pointing flange on ilium (0), articulates
cylicingly/weakly (1) or completely/strongly (2).
16. Ischia and pubic apron equal in size (0) or the ischium is less wide than the pubic
   apron (1). (Sereno 1991)
17. Short cervicals all nearly the same size (0) or elongated cervicals similar in size or
   increasingly longer anteriorly (1).
18. Pubis equal in length to ischium (0) or pubis much larger (1). (Benton and Clark
   1988; Sereno 1991)
19. Supraacetabular rim weakly (0) or strongly developed (1).
20. Anteroposteriorly running rugose ridge on lateral side of the jugal absent (0) or
    present (1).
21. Crocodile-reversed ankle (0) crocodile-normal ankle (1). (Gauthier 1986; Benton and
    Clark 1988; Sereno 1991)
22. Ilium vertical (0) or sub-horizontal/down turned (1). (Benton and Clark 1988; Juul
    1994)
23. Crocodylian femur (sigmoidal shaped, proximal and distal heads offset, head
    anteriorly pointing) absent (0) or present (1) (Modified from Gauthier 1986)
24. Palatal teeth present (0) or absent (1) (Gauthier 1986; Benton and Clark 1988; Sereno
Data Matrix:

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