

Pulaosaurus manuscript

There are some minor grammar issues throughout which require a careful readthrough by a native english speaker. In particular definite articles (such as “the”) are often missing.

Line 27: since the squamosal always forms a quadrate cotylus in dinosaurs I would remove this from the list of noteworthy characters

Line 62: “acquired from the locals”- I assume this means it was commercially collected by a local person? This could be made clearer.

Line 69: needs a space between on and IVPP

Line 73: remove “in 2017”

Line 78: there’s an extra space in between (and Madzia

Line 98: I love the etymology of the name!

Line 116: explain what a cololite is here. Many readers may be unfamiliar with the term.

Diagnosis: give a brief explanation of why you are comparing *Pulaosaurus* to *Hexinlusaurus* and *Agilisaurus*, and where in time and space these two taxa occur.

Line 181. Eliminate the first names from the references for Norman and Barrett

Premaxilla: do you have any information regarding the palate?

Lines 216 and 1181. Forster is not an author on that paper- Andrzejewski is the senior author

Line 223. Do the crowns expand in all directions- mesiodistally and labiolingually?

Line 228. How far is the premaxillary tooththrow offset from then maxillary tooththrow?

Line 237. Does the maxilla for the entire floor of the antorbital fenestra? Or does the lacrimal contribute?

Line 238. Is it also possible that the crushing has pushed the premaxilla posteriorly to contact the lacrimal? Are you certain that there was contact between the premaxilla and lacrimal?

Line 242. Is this ridge the border of the buccal emargination?

Line 255. Delete the “or” in from of *Jeholosaurus* and place it in from of *Tenontosaurus*

Line 256. How many denticles are on each margin of the maxillary teeth?

Line 265. In the premaxilla description you called this the “maxillary process” not the subnasal process.

Nasal: describe the contact with the frontal. Is there a fossa in the anterior nasals as seen in *Jeholosaurus*?

Lacrimal. Does it form part of the floor of the antorbital fossa? Does the lacrimal contact the maxilla posteroventral to the antorbital fossa to exclude the jugal from the fossa? Is the lacrimal foramen visible in the orbit rim?

Palpebral. It would be very unusual for the palpebral to contact the frontal. The prefrontal is disarticulated from the frontal- could this be making the palpebral appear to contact the frontal? Is the articular portion of the palpebral well preserved? If so, it would be good to describe it.

Line 295. Antermost jugal looks tapered which supports that it was eliminated from the fossa.

Line 299. Can you tell how the jugal and postorbital articulated?

Line 300. In the figure the boss looks like its high on the margin of the lower temporal fenestra- a different location than in other taxa. Is it really homologous?

Line 308. I would argue that it is forked in *Agilisaurus* (right side) as well as *Hypsilophodon*. It's subtle but present.

Jugal. Can you tell if the posterior jugal goes any distance up the posterior margin of the lower temporal fenestra?

Line 313. The frontal also contacts the nasal anteriorly and the postorbital posterolaterally.

Line 316. Eliminate the word “based”

Line 336. Does the postorbital or the squamosal form the largest portion of the temporal bar- or do they contribute equally?

Line 340. If you can see a fossa for the postorbital on the jugal, does the jugal process of the postorbital end on the orbital margin or on the lateral surface of the jugal?

Line 341. The postorbital overlaps the jugal, yes?

Line 344. It also forms part of the supratemporal fossa.

Parietal. Can you tell in the specimen if the parietal, in dorsal view, would extend laterally or posterolaterally to the squamosal? Or how much exposure it had on the posterior margin of the skull relative to the squamosal? Did the parietal meet the postorbital?

Line 354. I don't quite understand this. The descending part of the squamosal always forms the quadrate cotylus (glenoid) in dinosaurs. You can see it in *Lesothosaurus*, *Heterodontosaurus*, all ornithomimids, basal ceratopsians, pachycephalosaurs, etc. It is not a synapomorphy of ceratopsians.

Line 362. Rounded in proximal or lateral view?

Line 363. Make it clear that it is overlapped by a displaced pterygoid.

Line 372. Does the entire posterior jugal overlap the quadratojugal? In many taxa the dorsal portion of the jugal underlaps the quadratojugal. It is covered by a *displaced* ectopterygoid.

Line 375. Instead of comparing it to *Gasparinisaura*, tell the reader exactly how long they are, maybe relative to the infratemporal fenestra?

Line 384. Is this cup for articulating with the basiptyergoid process of the basisphenoid?

Line 385. Can you see how it articulates with the ectopterygoid or if it would have formed a ventrally projecting pterygoid flange?

Line 388. What is this tab for? Does it articulate with anything?

Ectopterygoid. Does it have a posterior hook like some ectopterygoids?

Line 400. Do you mean that it is only visible inside the orbit (not the antorbital fossa)?

Line 407. The laterosphenoid sometimes articulates with both the frontal and postorbital.

Basioccipital. Can you tell how much of the condyle is basioccipital and how much is exoccipital? Any more information on the size and shape of the tubera?

Basisphenoid. Are any of the cranial nerve or arterial openings visible?

Exoccipital. Can you see any foramina or the posttemporal foramen? Does it confirm that the supraoccipital may have contributed to the dorsal margin of the foramen magnum.

Line 450. Can you see if the ventral process is forked at its tip?

Line 457. Do you mean that the dorsal margin expands dorsally near the posterior end?

Line 458-9. This could be clarified: I'm not sure what you mean by this sentence.

Line 461. "moderately ventral to the dorsal margin" could be clarified. Perhaps tell the reader something like the foramina are located above the midpoint of the dentary, or X% below the dorsal margin.

Dentary. How far forward does the articular surface for the angular and surangular reach? Also, does the tooth row extend onto the inside of the dentary or does it stop at the base of the coronoid process?

Line 467. How far forward does the Meckelian fossa reach? To the prementary?

Line 488-8. Surangular foramina are very common and are present in *Thescelosaurus*, *Changchunsaurus*, *Lesothosaurus*, *Stegosaurus*, *Huayangosaurus*, and many others.

Surangular: what is the shape of the ventral border where it met the angular?

Articular. Can you see the articular surface? If so did both condyle of the distal quadrate articulate with it?

Angular. Can you tell if it formed the ventral margin of the mandible, or did the angular have a lateral exposure?

Atlas. Are there facet for atlantal ribs?

Line 538. Since *Pulausaurus*, *Jeholosaurs*, and *Hexinlusaurus* do not form a clade in your analysis, then this groove on the atlas cannot be considered a synapomorphy. It is homoplastic.

Do the prezygopophyses extend forward over the centra of the preceding cervical vertebrae?

Line 563. Should read "the parapophysis is larger than that of the axis"

Line 588. Do you mean two anterior caudal vertebrae?

Line 619. Just because there are no preserved caudal tendons doesn't necessarily mean they weren't there in life. Tendons often have patchy preservation.

Line 629. Fusion of these elements may also have an ontogenetic bias.

Scapula: is the glenoid preserved?

Coracoid. I think some of the directions are wrong- the dorsal border is straight while the ventral border has the embayment that forms the coracoid process. Describe the articular surface with the scapula. And I can see a foramen in the figure, close to the scapular articulation.

Line 645. Remove Berta's first name. As written, this makes it sound like *Haya*, etc. don't have a coracoid foramen when they do. I think that your taxon also has one.

Line 657. Murray not Murry

Humerus. Is the head centered on the proximal end?

Ulna and radius. Can you be more precise regarding the sizes of these elements, something like *the radius is 20% narrower than the ulna*?

Carpals and manus. It is so rare to find a good, articulated manus in neornithischians, so this is a very important part of this taxon!

Line 685. The ulna articulates *proximally* with the ulna. Distally, which metacarpal does it articulate with? Same with the intermedium. The ulna is the proximal contact, and which metacarpals does it articulate with distally?

Line 688. The distal carpal articulates *distally* with the third metacarpal.

Line 692. Compressed in which direction? Or do you mean deformed?

Line 693. You could also use the term plantar to refer to the posterior surface.

Line 695. Are the proximal metacarpals well compacted together?

Line 699. Is this fossa on the dorsal surface between the medial and lateral condyles?

Line 703. phalanx, not phalange

Line 722. It might be more correct to say that the brevis fossa is on the ventral margin of the postacetabular process. How wide is the fossa?

Line 727. It would be very unusual for the iliac peduncle to be posterodorsally directed. In Fig. 9 it looks like the normal anterodorsal/dorsal orientation.

Line 729. How far down the shaft of the ischium is the obturator process?

Line 731. I don't quite understand this sentence- do you mean the concavity between the two peduncles? If so you should move this sentence before the one about the obturator process to make this clearer.

Line 731. The obturator foramen is formed by the pubis but is sometimes backed by the pubic peduncle of the ischium in all ornithischians. In Fig. 9 I can see both ischial peduncles clearly as labelled. The pubis is out of place and shifted backwards. It should not articulate there. Please take another look at this in comparison to other ornithischians.

Line 740. This says that the pubis forms the obturator foramen with the pubis. See the above comment.

Line 746. How much longer is the femur than the humerus?

Femur. Are the greater and lesser trochanters visible at all?

Line 757. The relative lengths of the femur and tibia have been known to be ontogenetically controlled. The tibia is relatively longer in juveniles and gets relatively shorter with age.

Line 768. Is the shallow groove on the anterior or distal surfaces?

Line 770. I'm not sure what *salient* means here.

Astragalus and calcaneum. What percentage of their width is the astragalus? How far does the anterior ascending process on the astragalus extend up the tibia and is it centered on the astragalus and symmetrical? Is there a fossa on the lateral side of the calcaneum?

Line 791. It's not a synapomorphy of these two taxa since they are not sister taxa. Also, an ascending process is common in ornithischians, not just these two taxa.

Line 813. It's not a synapomorphy.

Line 820. It's not appressed to metatarsal IV?

Line 848. Not sure what peddles are. Do you mean pebbles (small stones)? Interesting.

Phylogenetic Analysis. I am happy to see characters listed in support of nodes. Too many authors leave these out and only talk about the topology.

I would like to see here, around Line 1002, some information on the current state of dating of the Yanliao Biota rocks.

Arytenoids. Very interesting section.

