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SUPPLEMENTARY DATA 3

Two new macraucheniids (Mammalia: Litopterna) from the late middle Miocene
(Laventan SALMA) of Quebrada Honda, Bolivia

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TABLE S2. List of characters and character states used in the phylogenetic analysis, from Forasiepi et al. (2016). All characters treated as unordered.

1. Development of nasals
 - 0 developed, overhanging the nasal aperture
 - 1 reduced
 - 2 vestigial or absent
2. Nasal aperture, caudal border
 - 0 anterior to orbit
 - 1 level with orbit
3. Anterior palatal shape
 - 0 lateral borders almost parallel
 - 1 narrowing at P2 or P3 level
4. Orbit, postorbital bar
 - 0 open (large gap)
 - 1 open (small gap)
 - 2 closed
5. Outline of premaxillary area in palatal view
 - 0 acute
 - 1 rounded
6. Premaxillary area in lateral view
 - 0 slightly ventrally curved
 - 1 straight
7. Frontal fossae on caudal margin of nasal aperture
 - 0 absent
 - 1 present
8. Height of tooth crown (HI: crown height/labiolingual width; Janis, 1988) based on m3 when possible
 - 0 brachyodont (HI < 1.45)
 - 1 mesodont (HI = or > 1.45)
9. Diastema between I3–C
 - 0 present
 - 1 absent
10. Parastyle on P3–P4
 - 0 labially projected
 - 1 level with mesostyle and metastyle

11. Concavities between lingual styles (parastyle-mesostyle- metastyle) on M1–M3
 - 0 shallow
 - 1 deep
12. Position of hypocone on M1–M2
 - 0 hypocone level with metacone
 - 1 hypocone near protocone, mesial to metacone
13. Position of hypocone vs protocone on M2
 - 0 hypocone labial to protocone
 - 1 hypocone lingual to protocone
14. Anterolingual cingulum (precingulum) on M1–M2
 - 0 noticeably more lingual than posterolingual cingulum
 - 1 slightly lingual or at same level as posterolingual cingulum
15. Hypolophulid on p4
 - 0 shorter than paralophid
 - 1 similar in length to paralophid
16. Entolophid on m1–m2
 - 0 present
 - 1 absent
17. Hypoconulid on m3
 - 0 expanded, forming a third lobe
 - 1 not expanded
18. Entoconid on m1–m2
 - 0 weak (does not reach lingual level of the metaconid)
 - 1 developed (reaches lingual level of metaconid)
 - 2 absent
19. Paralophid on m1–m2
 - 0 level with or lingual to lingual border of metaconid
 - 1 labial to lingual border of metaconid
20. Entoconid on m3
 - 0 developed and joined to hypolophid
 - 1 incipient on the hypolophid
 - 2 joined to hypolophulid
 - 3 absent
21. Metaconid on m2
 - 0 labial or level with paraconid and entoconid/ hypoconulid
 - 1 projects lingual to level of paraconid and entoconid/hypoconulid

22. Implantation of c–p2
0 oblique
1 parallel to mandibular border
23. Trigonid valley on p4
0 larger than talonid valley
1 similar in size to talonid valley
24. Entoconid on p4
0 present
1 absent
25. Length of m2
0 small (5–20 mm)
1 medium (21–35 mm)
2 large (36–45 mm)
3 very large (more than 45 mm)
26. Position of coronal plane passing through infraorbital foramen
0 anterior to M1
1 anterior to M2
2 anterior to M3
3 over M3
27. Snout in dorsal view
0 premaxillae and maxillae separated sagittally
1 premaxillae sutured sagittally
2 premaxillae and maxillae sutured sagittally
28. Choana, rostral border (= posterior border of palate)
0 level with or anterior to posterior border of M2
1 posterior to M2
29. Orbit, coronal plane passing through rostral border
0 anterior to posterior border of M3
1 level with posterior border of M3
2 considerably posterior to M3 (equivalent to one tooth-length gap)
30. Sagittal crest
0 present
1 absent
31. Basioccipital, median crest
0 absent or vestigial
1 present

32. Skull shape
0 short and wide
1 long and narrow
33. Occipital condyles
0 protruding at level of nuchal crest in lateral view
1 not protruding at level of nuchal crest in lateral view
34. Odontoid notch
0 U-shaped
1 V-shaped

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