

Table s1 Comparison of cranial features between *Bounomys* and other ctenodactyloids

	<i>Cocomys</i>	<i>Exmus</i>	<i>Tataromys</i>	<i>Yindirtemys</i>	<i>Bounomys</i>	<i>Sayimys</i>	<i>Ctenodactylus</i>
1. The nasal extended forward beyond the anterior edge of the upper incisors	Present	Present	Absent	Absent	Absent	/	Absent
2. Crest formed by premaxillae between the upper incisors	Absent	Absent	Present	Present	Present	/	Present
3. Premaxillary laterodorsal crest	Absent	Absent	Present	Present	Present	/	Present
4. Size of incisive foramen	Middle	Middle	Large	Large	Large	/	Large
5. Size of infraorbital foramen	Small	Middle	Large	Large	Large	/	Large
6. The dorsal branch of zygomatic process of maxilla behind the ventral branch	Absent	Absent	Present	Present	Present	/	Present
7. Width of orbital floor	Broad	Broad	Narrow	Narrow	Narrow	Narrow	Narrow
8. Size of sphenopalatine foramen	Small	Middle	Large	Large	Large	/	Small
9. Width of the palate between the teeth rows	Broad	Broad	Narrow	Narrow	Narrow	Narrow	Narrow
10. Position of choana	Aligns with M2/M3	Aligns with M2/M3	Distinctly behind M3	Distinctly behind M3	Distinctly behind M3	Aligns with the posterior edge of M3	Distinctly behind M3
11. Position of major palatine foramen	Aligns with M1	Aligns with M1	Aligns with M2	Aligns with M2	Aligns with M2	Aligns with P4	Aligns with M2
12. Position of lacrimal foramen	At the edge of the lacrimal	At the edge of the lacrimal	In the middle of the lacrimal	/	In the middle of the lacrimal	/	In the middle of the lacrimal
13. Position of postorbital process	On the frontal	On the frontal	Near the parietal–frontal suture	/	Near the parietal–frontal suture	/	On the parietal
14. Postorbital constriction	Prominent	Prominent	Weak	/	Weak	/	Weak

15. Position of temporal crest	On the frontal	On the frontal	On the parietal	/	On the parietal	/	/
16. Frontal-alisphenoid contact	Present and short	Present and short	Present, extremely short	/	Present, extremely short	/	Absent
17. Ethmoidal foramina	1	1	2	/	2	/	/
18. Length of parietal and degree of protuberance of parietal	Long and protuberant	Long and protuberant	Short and flat	/	Short and flat	/	Short and flat
19. Temporal foramina	2	2	0	/	0	/	0
20. Relationship between optic canal and sphenorbital fissure	Separated	Separated	Merge into a large foramen	/	Merge into a large foramen	/	Merge into a large foramen
21. Size of sphenofrontal foramen	Small	Small	Large	/	Large	/	Large
22. Distance between buccinator foramen and masticatory foramen	Both foramina are absent	Distinct	Distinct	/	Adjacent or fused	/	/
23. Position of foramen ovale	More medial than ectopterygoid crest	More medial than ectopterygoid crest	More lateral than ectopterygoid crest	/	More lateral than ectopterygoid crest	More lateral than ectopterygoid crest	/
24. Position of foramen ovale accessorius	Located on the ventrolateral side of foramen ovale	Located on the ventrolateral side of foramen ovale	Located on the medial side of foramen ovale	/	Located on the medial side of foramen ovale	Located on the ventromedial side of foramen ovale	/
25. Mastoid exposure of petrosal	Small	Small	Inflated	/	Inflated	/	Inflated
26. Number of turns of cochlear canal	1.59 (Li, 2013)	/	/	/	≈3	/	/
27. Proportion of bulla to skull	Small	Small	Large	/	Extremely large	Large	Large
28. Size of external acoustic meatus	Large	Large	Small	/	Small	Small	Small
29. Ossified external acoustic canal	Absent	Absent	Present but short	/	Present but short	Present but short	Present and long
30. Head of malleus swollen and extended forward	/	Absent	/	/	Present	/	/
31. Malleus fused with incus	/	Absent	/	/	Absent	/	Present
32. Dorsal part of occipital	Absent	Present but small	Present and large	/	Present and large	/	Present and large

33. External occipital crest	/	Weak	More-developed	/	More-developed	Well-developed	Well-developed
34. Length and curvature of mandibular diastema	Short	Short and straight	Long and concave	Long and concave	Long and concave	Long and concave	Long and concave
35. Mental foramina	2	2	1	1	1	1	1
36. Coronoid process	Large	Large	/	/	Reduced and less than condylar process	/	Nearly absent
37. Position of anterior end of ventral masseteric crest	Aligns with m3	Aligns with m2	Aligns with m1	Aligns with m1	Aligns with m1	Extends forward to below p4	Aligns with m1