

Table 10 c: other skull measurements, features

^{1, 2, ...} : source, author quoted.

	(Sub-)species, form, subpopulation	Ethmo-maxillary fissure	Skull height	Mandibular height	Orbits	Temporal lines	Temporal fossae			Other
Asian lorises					More forward-facing and tubular orbits than in the African forms ³ .					Characterized by a marked extension of the ectotympanic into a tubular meatus and a more angular auditory bulla than in the African forms ³ .
L I	Slender lorises , genus <i>Loris</i> To avoid confusion, the old taxonomic names (above) are listed here in addition to the new names based on Groves 2001 because taxonomic research may lead to further changes.				Orbits larger relative to skull size than in the other genera ² .					Foramen magnum more anteriorly placed than in <i>Nycticebus</i> ² . More inflated tympanic bullae with a short, bony external auditory meatus than in <i>Nycticebus</i> ² . Premaxillae extend anteriorly beyond the incisors ² . Ascending ramus of the mandible with a more slender coronoid process and a less rounded angular process than in <i>Nycticebus</i> ² . No sagittal crest ² .
L II a	Old name: <i>L. t. tardigradus</i> ¹ Groves 1998, 2001: change into distinct species <i>L. tardigradus</i> ^{64, 65, 233}). Including several phenotypically distinct-looking forms: see for instance ²²⁷ , L II b, L II c and loris identification key in this database.	Hammer-shaped ^{14, 1} , with a narrow pointed sagittal stem and a short rounded transverse portion partially divided by a rounded spur of bone from its anterior margin ¹⁴ .		Mandibular height (at condyle): mean of 4 adult females: 10 mm ²³ .	Orbital ring smaller and the rim less deep than in other subspecies ¹⁴ .	Wide apart anteriorly and still more so posteriorly, diverging rapidly in their course. Muscular ridges less marked than in other subspecies ^{14, 1} .	Smaller than in other races ¹ . less roomy than in larger forms, with its sides forming an equilateral triangle ¹⁴ .			Frontals small ¹⁴ . Parietals large ¹⁴ . Zygomatic arch narrower and of different shape than in <i>grandis</i> , forming a triangular passage with subequal sides ²³ . Orbital margin standing out less prominently than in <i>grandis</i> , especially above (depth of orbital rim here: 3.0 mm in a large female) ²³ .
L II b	Small form with the appearance of a shorter muzzle ¹⁵ .									
L II c	Small form with longer-looking muzzle / heart-shaped (<i>L. t. grandis</i> -like) face ¹⁵ .									
L II d	(<i>L. gracilis zeylanicus</i> : synonym?) ^{2, 14} .									
L III	<i>Loris lydekkerianus</i> ²³³ . Groves 1998, 2001: species including all formerly known <i>Loris</i> subspecies except from the former <i>L. t. tardigradus</i> ^{64, 65, 233} .									

* According to Osman Hill, Wroughton's specimens described as *L. t. tardigradus* is from Mayor's Bombay collection and probably *L. t. nordicus*, a form still undescribed when Wroughton published his data ²³.

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	(Sub-)species, form, subpopulation	Ethmo-maxillary fissure	Skull height	Mandibular height	Orbits	Temporal lines	Temporal fossae			Other
L IV	Old name: <i>Loris tardigradus malabaricus</i> (Wroughton, 1917) ¹ Groves 1998, 2001: <i>L. lydekkerianus malabaricus</i> ^{64, 65, 233} .	Very narrow in its sagittal portion, wider in its transverse limb, and the two limbs united at a sharp angle with one another ^{14, 1} .			Orbital ring larger than in <i>tardigradus</i> ¹⁴ .	Similar to those of <i>L. t. tardigradus</i> , but stronger ^{1, 14} . As in <i>grandis</i> and <i>tardigradus</i> , but more heavily marked than in the latter ¹⁴ .	Slightly larger than in <i>tardigradus</i> ; and shaped as in <i>grandis</i> ¹⁴ .			Palate and choanae narrow ¹ ; palate and posterior nares narrow ¹⁴ . Frontals small ¹⁴ .
L V	Old name: <i>Loris tardigradus lydekkerianus</i> (Cabrera, 1908) ¹ . Groves 1998, 2001: <i>L. lydekkerianus lydekkerianus</i> ^{64, 65, 233} .	Large and tending to semilunar outline due to deficient ossification of its lateral edge and smoothing out of the angle of junction between its two limbs ^{1, 14} .								Skull shaped as in <i>L. t. nordicus</i> , but less compressed dorso-ventrally, more arched at vertex ^{1, 14} . Palate and choanae narrow ^{1, 14} .
L VI	Old name: <i>Loris tardigradus nordicus</i> (Osman Hill, 1933) ¹ . Groves 1998, 2001: museum specimens indistinguishable from / synonym of <i>L. lydekkerianus grandis</i> ^{64, 65, 233} . May turn out to be <i>L. lydekkerianus nordicus</i> in the future if further studies prove distinctness. .	Very large, due to the tendency for its lateral edge to be deficient, shape tending to triradiate, with the posterior radius large and wide ¹⁴ . Large from tendency to deficient ossification at its lateral margin; in form triradiate ¹ .			Orbital margin as in <i>grandis</i> ¹⁴ .	Temporal lines well-developed and running parallel to one another in the greater part of their course, not diverging so rapidly behind as in <i>tardigradus</i> and <i>grandis</i> ¹⁴ . Running parallel in major part of their extent ¹ .	Temporal fossae as in <i>L. t. grandis</i> , but larger still ¹ .			Cranium compressed dorso-ventrally ¹⁴ . Mandible more heavily built than in <i>grandis</i> ¹⁴ .

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L VII	Old name: <i>Loris tardigradus grandis</i> (Osman Hill and Phillips, 1932) ¹ Groves 1998, 2001: <i>L. lydekkerianus grandis</i> ^{64, 65, 233} .	Large, with wide sagittal portion and short rounded transverse limbs ^{1, 14} .	Skull height: holotype (female): 23 mm. Male L2: 24 mm; male L3 (paratype): 23.5 mm ²³ .		Orbital margin standing out more prominently than in <i>tardigradus</i> , especially above (depth of orbital rim here: 4.8 mm in the female type, 4.75 in adult male paratype and 4.0 in the Opalgalla specimen) ²³ .	Stronger but arranged as in <i>L. t. tardigradus</i> ^{1, 14} . Better developed than in <i>tardigradus</i> ²³ .	Roomy ^{1, 14} .			Skull height: holotype (female): 23 mm. Male L2: 24 mm; male L3 (paratype): 23.5 mm ²³ . Posterior nares narrower than in <i>tardigradus</i> ²³ . Mandibular height (at condyle): holotype (female): 10.5 mm. Male L2: 10 mm; male L3 (paratype): 9 mm ²³ . All muscular ridges and other markings better developed than in <i>tardigradus</i> ²³ . Because of apparently larger temporal muscle, the zygomatic arch is wider and of different shape than in <i>tardigradus</i> , forming a triangular passage with lateral side longest, the cavity of the arch extending further forward, overlapping laterally as far as the front edge of the last molar tooth ²³ .
L VIII	Old name: <i>L. tardigradus nycticeboides</i> (Osman Hill, 1942) ¹ . Groves 1998, 2001: <i>L. lydekkerianus nycticeboides</i> ^{64, 65, 233} .	Oval ¹ . Relatively larger than in <i>grandis</i> or <i>tardigradus</i> , almost oval in shape. The thin flange of bone forming the lateral boundary of this fossa is extremely attenuated and quite transparent, giving a free view into the maxillary antrum ¹⁶ .	Skull height: female: 22 mm; male: 21 mm. 1-year-old male ^{1, 14} .	Mandibular height at condyle: female: 11 mm; male: 10 mm ¹⁶ . Mandibular height at coronoid: female: 17 mm ¹⁶ .		Temporal ridges very prominent, approaching within 14 mm of one another on the frontal bone and then receding gradually until they are 25 mm apart where they join up with the lambdoid crest ¹⁶ .				A rather large median vertical occipital torus (exact description see ¹⁶ ; in <i>grandis</i> and <i>tardigradus</i> also present, but in a much reduced form) ^{1, 14, 16} .

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Nx	<i>Nycticebus</i> E. Geoffroy 1812 ²³³ . Genus <i>Nycticebus</i> in general, lesser slow lorises included or species not mentioned			Mandible deepest as compared to <i>Loris</i> , <i>Perodicticus</i> and <i>Arctocebus</i> ⁵ .						Mandible with ost markedly enlarged and expanded goneal region as compared to <i>Loris</i> , <i>Perodicticus</i> and <i>Arctocebus</i> . Rugose goneal region surmounted by a postcondylar rugosity which, in some specimens, is enlarged into a tubercle (located between mandibular condyle and gonion measuring point). This feature is unique among lorideds and apparently among primates in general with the exception of <i>Pongo</i> and <i>Sivapithecus</i> ⁵ .
Np	Lesser slow lorises									
Np I	<i>Nycticebus pygmaeus</i> (Bonhote, 1907) ³ , ¹ , ² , see also ³⁸ . (<i>N. intermedius</i> and other possible <i>pygmaeus</i> -like forms included).		Braincase height: 19.1 – 20.9, mean 20.4 mm (n=8) ² .							Occiput noticeably flattened ³ . In many skull characters intermediate between slow loris and slender loris ³ .
Np I b	<i>N. pygmaeus</i> (Bonhote, 1907) ⁴ , distinguished from <i>N. intermedius</i>).									Hind edge of palate on one level with middle or front edges of M3 ⁴ .
Np II	Synonym / proposed species: <i>Nycticebus intermedius</i> (Dao, 1960) ⁴ .									Occiput at occipito-parietal suture noticeably more flattened than in slow lorises and in <i>N. pygmaeus</i> ⁴ . Hind edge of palate on one level with hind edges of M3 ⁴ .
Np III	Proposed species: <i>Nycticebus sp.</i> New species proposed 1997, possibly corresponding to <i>N. intermedius</i> ⁴⁶ , ⁴⁷ .									
Np IV	(<i>Nycticebus chinensis</i> ? New species proposed? Based on newspaper reports) ⁹⁶ , ¹⁶¹ .									
N	Slow lorises (lesser slow lorises not included)		Braincase height: 20.7 – 27.2, mean 23.8 mm (n=39) ² .							Hind edge of palate on one level with middle or front edges of M3 ⁴ .

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N I	<i>Nycticebus bengalensis</i> ^{64, 65} , Old name: <i>N. c. bengalensis</i> . ²³³ . Includes N I b to N I d ^{2, 3} ; Osman Hill distinguished <i>tenasserimensis</i> from this form ¹ .									Slow lorises from Assam, Burma and Laos are distinguished from other slow lorises by presence of a distinctly deep nasal fossa ⁵ .
N I b	Synonym (subpopulation): <i>N. c. cinereus</i> (A. Milne-Edwards, 1867) ¹ .									
N I c	Synonym (subpopulation): <i>N. incanus</i> (Thomas 1921) ¹ .									
N I d	Synonym (subpopulation): <i>N. c. tenasserimensis</i> (variable population with <i>couang</i> -like features in some specimens, possibly including <i>bengalensis-couang</i> transition forms (Elliott, 1912) ²⁶⁵ .									
N II	<i>Nycticebus couang</i> (Boddaert, 1784) <i>N. bengalensis</i> no longer included ^{2, 64, 233} ..				Infralateral orbit margins conspicuously more laterally flared (feature shared with slow lorises from Java and Borneo, distinguishing them from other slow lorises) ⁵ .					
N III	<i>N. c. couang</i> (Boddaert, 1785) ² (includes Nc III b-e; compare with Nc III b).									
N III b	Synonym (subpopulation): <i>N. c. couang</i> (Boddaert, 1785) ¹ .									
N III c	Synonym (subpopulation): <i>N. c. hilleri</i> (Stone et Rehn, 1902) ¹ .					Temporal ridges form a crest in old specimens ¹ .				Auditory and mastoid bullae irregularly grooved and wrinkled ¹ .
N III d	Synonym (subpopulation): <i>N. c. insularis</i> (Robinson, 1917) ¹ .									

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N III e	Synonym (subpopulation): <i>N. c. natunae</i> (Stone et Rehn, 1902) ¹ .									Skull resembles that of <i>coucang</i> but interorbital septum less constricted and bullae less inflated ¹ .
N IV	<i>N. c. menagensis</i> (Lydekker, 1893) ² ; (including N IV b-d).									
N IV b	Synonym (subpopulation): <i>N. c. borneanus</i> (Nachtrieb, 1892; Lyon, 1908) ¹ .				Lateral rim of orbital margin higher, wider than in <i>bancanus</i> , 7-8 mm ¹ . Infralateral orbit margins conspicuously more laterally flared (feature shared with slow lorises from Java and Sumatra, distinguishing them from other slow lorises) ⁵ .	The temporal ridges never approach each other on the crown to form a sagittal crest, even in old animals ¹ .				Bullae not inflated ¹ . Height of coronoid process: males: 19.4; 20.0; 20.5 mm. Females: 19.1; 20.8 mm. Sex unrecorded: 14.7; 18.0; 20.8; 14.9; 19.7; 20.7 mm ⁶ .
N IV c	Synonym (subpopulation): <i>N. c. menagensis</i> (Lydekker, 1893) ⁶ (only from Tawitawi Archipelago; compare with N IV).									
N IV d	Synonym (subpopulation): <i>N. c. bancanus</i> (Lyon, 1906) ¹ .				Lateral rim of orbital margin narrower and lower than in <i>bancanus</i> , 3-4 mm ¹ .					Bullae more inflated than in <i>borneanus</i> ¹ .

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N V	<i>Nycticebus coucang javanicus</i> (E. Geoffroy, 1812) ^{1, 2, 3, 4, 233} . May turn out to be a distinct species, <i>Nycticebus javanicus</i> , in the future ^{64, 65, 233} .				Infralateral orbit margins conspicuously more laterally flared (feature shared with slow lorises from Sumatra and Borneo, distinguishing them from other slow lorises) ⁵ .	The temporal ridges meet in a sagittal crest in aged individuals ¹ .				Bullae not inflated ¹ .
African forms		Less forward-facing and tubular orbits than in the Asian forms ³ .								Less marked extension of the ectotympanic into a tubular meatus and a less angular auditory bulla than in the Asian forms ³ .
A I	Genus <i>Arctocebus</i> (formerly believed to consist of 1 species, <i>A. calabarensis</i> , compare with A II) ³³ .				Orbits smaller relative to skull size than in the similar-sized <i>Loris</i> ² .					
A II	<i>A. calabarensis</i> (J.A. Smith, 1863) ^{33, 1, 2} (formerly regarded as subspecies <i>A. c. calabarensis</i>).				Orbital rim not expanded ¹ .					Interorbital part of sagittal suture not raised on a crest ¹ .
A III	<i>A. aureus</i> De Winton, 1902 ^{33, 1, 2} .				Orbital rim expanded ¹ .					Interorbital part of sagittal suture raised on a crest ¹ . Incisive foramina very small ¹ . Angle of mandible truncated, condylar process projecting beyond it posteriorly
P I	Genus <i>Perodicticus</i> Bennett, 1831; <i>Perodicticus potto</i> (P. L. S. Müller, 1776) (possibly including unrecognized species such as the proposed new genus <i>Pseudopotto</i> ? See below).					More widely spaced temporal ridges than in <i>Nycticebus</i> ² . Min. temporal lines separation (all potential morphs and sexes combined): 10.4-19.3, mean 15.10 mm (n= 35) ⁵ .				Dorso-ventrally deeper facial region than in comparably-sized <i>Nycticebus</i> ² . Morph D of craniofacially distinguished "Zürich" group of museum skulls: inferior surface of mandibles flattened in the region of the symphysis (n = 2) ⁵ .

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P II	<i>P. p. potto</i> (P. L. S. Müller, 1766) ² (includes P II b - P II c).									
P II b	Synonym (subpopulation): <i>P. p. potto</i> (P. L. S. Müller, 1766) ¹ (not including P II c).									
P II c	Synonym (subpopulation): <i>P. p. juju</i> (Thomas, 1910) ¹ .				Postorbital bars in <i>edwardsi</i> , broader than in <i>potto</i> , narrower than in <i>ibeanus</i> ¹ .					
P III	<i>P. p. edwardsi</i> (Bouvier, 1879) ² (includes P III b - P III c). Possibly including other species.									
P III b	Synonym (subpopulation): <i>P. p. edwardsi</i> (Bouvier, 1879) ¹ .									
P III c	Synonym (subpopulation): <i>P. p. faustus</i> (Thomas, 1910) ¹ .									
P IV	<i>P. p. ibeanus</i> (Thomas, 1910) ² .									
Ps	<i>Pseudopotto martini</i> : new genus proposed in 1996 ³⁴ . Current data insufficient ⁶⁸ .									

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