CHECKLIST OF MURIDS (MAMMALIA: RODENTIA: MURIDAE) OF SOUTH ASIA

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Abstract

A checklist of 91 species of murids (Mammalia: Rodentia: Muridae) belonging to 33 genera in seven subfamilies known to occur in South Asia is provided.

Keywords

Checklist, Muridae, Rodentia, South Asia

Introduction

To date the most comprehensive taxonomic work on murids of India including its immediate neighbouring countries and Afghanistan is that of Ellerman (1961). The Rodentia volume of the *Fauna of India* (Ellerman, 1961) and the key for identification of Indian rodents (Ellerman, 1947a, b) remain an important source of information on rodents of the region of South Asia including Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka. Ellerman (1961) gave descriptive account of 260 subspecies of rodents under 128 species belonging to 46 genera from the Indian subcontinent.

Before Ellerman's monumental work, accounts of rodents of the region were available through the works of Blyth (1863), Jerdon (1874), Sterndale (1884) and Blanford (1888, 1891). In fact, Blanford (1888, 1891) provided the first comprehensive work on the rodents of the region including accounts of 93 species and 43 varieties. During the Mammal Survey of India, Burma (Myanmar) and Ceylon (Sri Lanka) by the Bombay Natural History Society between 1919 and 1928, the knowledge about rodents of the region increased manifold, and also resulted in addition of a numerous new species and subspecies from the region.

During recent times, the classification of this order has been subjected to numerous changes (Ellerman & Morrison-Scott, 1951; Ellerman, 1961; Marshall, 1977a; Carleton & Musser, 1984; Corbet & Hill, 1980, 1986, 1991, 1992; Musser & Carleton, 1993; Agrawal, 2000) due to an increased level of application of taxonomic parameters, awareness regarding taxonomic studies of diversified rodent species, and their intra- and inter-relationships throughout the world.

Although, Agrawal (2000) has provided a detailed account on the murids (along with hystricids) of India, the need of a comprehensive list of the murids belonging to South Asia is lacking and its need is inevitable at present. Through this review, an attempt has been made to put together one such list of murid species including information on their synonyms and subspecies.

Methods

Present work on the rodents of South Asia region is primarily based on Corbet and Hill (1992), Musser and Carleton (1993), Agrawal (2000) and a list prepared by Mike Jordan from United Kingdom. We reviewed major references like Ellerman (1947a, b; 1961), Ellerman and Morrison-Scott (1951, 1953), Roberts (1997), Phillips (1980), Corbet and Hill (1991, 1992), Musser and Carleton (1993), and Agrawal (2000) to compile this checklist. Besides these, we also referred to numerous other sources for information: Fry (1931), Roonwal (1948, 1949, 1950), Biswas and Tiwari (1969), Agrawal (1967a, b, 1970, 1973), Agrawal and Chakraborty (1971, 1976, 1981, 1982), Chakraborty (1975, 1983), Saha (1980), Biswas and Khajuria (1955, 1957), Pradhan (1979), Pradhan and Mithel (1981), Pradhan *et al.* (1989, 1993), and Pradhan *et al.* (communicated). Deriving information from various sources listed above, we have listed the species of murids known to occur in South Asia including India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka. For all practical purposes we consider the disputed land of Pakistan-occupied-Kashmir as a part of India, and species endemic to the disputed

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area have been included in this review as 'Endemic to the region known from disputed land of Pakistan-occupied-Kashmir'. For species with wider distribution in India and Pakistan we do not mention so presuming it to be understood, but 'Pakistan-occupied-Kashmir' is included for species that are restricted in distribution to either Pakistan or other parts of northern India, and the disputed land. For species restricted or distributed in other than the disputed land in India we mention 'Jammu & Kashmir in India'. As we are not aware of rodents of Maldive Islands, we are not taking that country into account under the present review. This list is based on the best of the present knowledge, on murid diversity of the region to date.

Table 1. Species diversity of Family Muridae in South Asia

Subfamily	Genus	No. of species	Remarks
Arvicolinae	*Alticola*	7	2 regional, 2 Indian endemics
	Ellobius	1	
	Eothenomys	1	
	Hyperacrius	2	2 regional endemics
	Microtus	3	including *Pitymys*
Calomyscinae	*Calomyscus*	2	1 Pakistan endemic
Cricetinae	*Cricetulus*	2	
Gerbillinae	*Gerbillus*	4	1 regional endemic
	Meriones	4	
	Rhombomys	1	
	Tatera	1	
Murinae	*Acomys*	1	
	Apodemus	5	1 Nepal endemic
	Bandicota	3	
	Berylmys	3	
	Chiropodomys	1	
	Cremnomys	3	1 regional, 2 Indian endemics
	Dacnomys	1	Monotypic
	Diomys	1	Monotypic; regional endemic
	Golunda	1	
	Hadromys	1	Monotypic
	Leopoldamys	2	
	Micromys	1	Monotypic
	Millardia	3	2 regional, 1 Indian endemic
	Mus	11	2 regional, 2 Indian, 2 Sri Lankan endemics
	Nesokia	1	
	Niviventer	6	1 regional endemic
	Rattus	13	1 regional, 4 Indian, 1 Sri Lankan endemic
	Srilankamys	1	Sri Lankan endemic
	Vandeleuria	2	1 Sri Lankan endemic
Platacanthomyinae	*Platacanthomys*	1	Monotypic; Indian endemic
Rhizomyinae	*Cannomys*	1	Monotypic
	Rhizomys	1	

Table 2. Insular endemic species belonging to Family Muridae in South Asia

Scientific name	Distribution	Remarks
Murinae		
Mus fernandoni	Sri Lanka	
Mus mayori	Sri Lanka	
Rattus burrus	Andaman & Nicobar Is.	only from Nicobar Isles
Rattus montanus	Sri Lanka	
Rattus palmarum	Andaman & Nicobar Is.	only from Nicobar Isles
Rattus stoicus	Andaman & Nicobar Is.	only from Andaman Isles
Srilankamys ohiensis	Sri Lanka	
Vandeleuria nolthenii	Sri Lanka	

Results

A total of 91 species of murids belonging to 33 genera and seven subfamilies are recorded from South Asia. Fourteen species belong to subfamily *Arvicolinae*, two species to *Calomyscinae*, two species to *Cricetinae*, 10 species to *Gerbillinae*, 60 species to *Murinae*, one species to *Platacanthomyinae*, and two species to *Rhizomyinae* (Table 1).

Of this diversity, 32 species (35 percent) are endemic to South Asia of which only 13 species are found in more than one country, while the rest are restricted in distribution to one country. India has 12, Sri Lanka has five, while Nepal and Pakistan have one endemic species each (Table 1). Further, it could be concluded that the following genera, namely, *Hyperacrius* Miller, 1896*, Cremnomys* Wroughton, 1912*, Diomys* Thomas, 1917*, Millardia* Thomas, 1911*, Srilankamys* Musser, 1981 and *Platacanthomys* Blyth, 1859 are endemic to the region. Among the endemics, eight species are insular in nature (Table 2) with five species from Sri Lanka and the rest from Andaman & Nicobar Islands.

The present known murid diversity on record from South Asia is listed below. The synonyms provided are those applicable for the South Asian region only. We have not listed extra-limital synonyms that may be valid for some taxon elsewhere.

Family: *Muridae*
Subfamily: *Arvicolinae*
Genus *Alticola* Blanford, 1881
Mountain Voles

This genus belongs to the subfamily *Arvicolinae* and is represented by seven species in the region. Two species each are endemic to the region and India. Ellerman (1961) has listed two species from the region. Corbet and Hill (1992) has made a brief reference about the species belonging to this genus.

1. *Alticola albicauda* (True, 1894)
1894. *Arvicola albicauda* True, Proc. U. S. nation. Mus., 17: 12.
Name: White-tailed Mountain Vole
Type locality: Braldu Valley, Baltistan, Jammu & Kashmir, India
Synonyms: *Arvicola albicauda* True, 1894
Alticola roylei albicauda (True, 1894)
Alticola acmaeus Schwarz, 1939
Alticola roylei acmaeus Schwarz, 1939
Subspecies: None
Distribution: Endemic to the region known from disputed land of Pakistan-occupied-Kashmir.
Comments: Ellerman (1961) opined that the skins that were accorded to *Alticola roylei albicauda* (True, 1894) by Hinton (1926) are closer to *Alticola roylei glacialis* (Miller, 1913) and goes on to remark that there exist only one specimen of *Alticola albicauda* (True, 1894). Musser and Carleton (1993) treat it as distinct species and synonymized the name *Alticola roylei acmaeus* Schwarz, 1939 with it. Agrawal (2000) has not offered any comment on this species.

2. *Alticola argentatus* (Severtzov, 1879)
1879. *Arvicola argentata* Severtzov, Izv. Soc. Nat. Anthrop. Etnogr., 8,2: 82.
Name: Silver Mountain Vole
Type locality: Mashat, Karatau Mtns., Chimkentskaia Obl., Kazakhstan
Synonyms: *Arvicola argentata* Severtzov, 1879
Alticola roylei argentata (Severtzov, 1879)
Subspecies: None
Distribution: Jammu & Kashmir in India, Pakistan-occupied-Kashmir and Pakistan.
Comments: Ellerman (1961) and Agrawal (2000) do not comment any thing significant about this species. Ellerman and Morrison-Scott (1951) included it under *Alticola roylei* (Gray, 1842). Musser and Carleton (1993) treat it as a distinct species.

3. *Alticola blanfordi* (Scully, 1880)
1880. *Arvicola blanfordi* Scully, Ann. Mag. nat. Hist. (5)6: 399.
Name: Scully's Vole
Type locality: Gilgit, Jammu & Kashmir, India
Synonyms: *Arvicola blanfordi* Scully, 1880
Alticola roylei blanfordi (Scully, 1880)
Alticola blanfordi lahulius Hinton, 1926
Subspecies: *Alticola blanfordi blanfordi* (Scully, 1880)
Distribution: Endemic to India. Pakistan-occupied-Kashmir and Himachal Pradesh in India.
Comments: Ellerman (1961) treated it as subspecies of *Alticola roylei* (Gray, 1842). Following Ellerman (1961), Agrawal (2000) synonymized *Alticola blanfordi lahulius* Hinton, 1926 with the nominate subspecies *Alticola blanfordi blanfordi* (Scully, 1880). Musser and Carleton (1993) treated *Alticola blanfordi* (Scully, 1880) as a subspecies of *Alticola argentatus* (Severtzov, 1879), while Agrawal (2000) retained it as a distinct species following Hinton (1926).

4. *Alticola montosa* (True, 1894)
1894. A*rvicola montosa* True, Proc. U. S. nation. Mus., 17: 11.
Name: True's Vole
Type locality: Central Jammu & Kashmir, India
Synonyms: *Arvicola montosa* True, 1894
Microtus imitator Bonhote, 1905
Subspecies: None
Distribution: Endemic to the region. Pakistan-occupied-Kashmir and Pakistan (Agrawal, 2000).
Comments: Ellerman (1961) treated it as a subspecies of *Alticola roylei* (Gray, 1842). Musser and Carleton (1993) treated it as a distinct species.

5. *Alticola roylei* (Gray, 1842)
1842. *Arvicola roylei* Gray, Ann. Mag. nat. Hist., (1)10: 265.
Name: Royle's Vole
Type locality: Kumaon, Uttaranchal, India
Synonyms: *Arvicola roylei* Gray, 1842
Alticola roylei cautus Hinton, 1926
Subspecies: *Alticola roylei roylei* (Gray, 1842)
Distribution: Himachal Pradesh and Uttaranchal in India. Agrawal (2000) opines that in the present form it is endemic to India.
Comments: Ellerman (1961) treated it as the one of the two *Alticola* species occurring in the region and listed five subspecies, namely *Alticola roylei roylei* (Gray, 1842), *Alticola roylei cautus* Hinton, 1926 - presently synonymized with the nominate subspecies of *Alticola roylei* (Gray, 1842), *Alticola roylei blanfordi* (Scully, 1880) - presently *Alticola blanfordi* (Scully, 1880), *Alticola roylei montosa* (True, 1894) - presently *Alticola montosa* (True, 1894), and *Alticola roylei glacialis* (Miller, 1913). *Alticola roylei albicauda* (True, 1894) was treated as a form of *Alticola roylei glacialis* (Miller, 1913) by Ellerman (1961) [See comments under *Alticola albicauda* (True, 1894)]. Agrawal (2000) could not remark on two subspecies of the *Alticola roylei* (Gray, 1842), namely *Alticola roylei albicauda* (True, 1894) and *Alticola roylei glacialis* (Miller, 1913) due to lack of specimens. Corbet (1978) treated *Alticola roylei argentatus* as occuring in Pakistan (Roberts, 1997), but this subspecies is now treated as a distinct species by Musser & Carlton (1993).

6. *Alticola stoliczkanus* (Blanford, 1875)
1875. *Arvicola stoliczkanus* Blanford, J. Asiatic Soc. Beng., 44(2): 107.

Name: Stoliczka's Vole
Type locality: Keunlun Mountains, North Ladhak, Jammu & Kashmir, India
Synonyms: *Arvicola stoliczkanus* Blanford, *1875*
Microtus acrophilus Miller, 1899
Alticola stoliczkanus acrophilus (Miller, 1899)
Subspecies: None
Distribution: Jammu & Kashmir and Sikkim in India, Nepal and probably Bhutan.
Comments: Ellerman (1961) listed two subspecies, namely *Alticola stoliczkanus stoliczkanus* (Blanford, 1875) and *Alticola stoliczkanus stracheyi* (Thomas, 1880). The latter subspecies has been raised to species level, and Agrawal (2000) considers them both as separate species.

7. *Alticola stracheyi* (Thomas, 1880)
1880. *Arvicola stracheyi* Thomas, Ann. Mag. nat. Hist., (5)6: 332.
Name: Thomas' Short-tailed Vole
Type locality: Ladhak, Jammu & Kashmir, India
Synonyms: *Arvicola stracheyi* Thomas, 1880
Microtus cricetulus Miller, 1899
Alticola bhatnagari Biswas & Khajuria, 1955
Subspecies: None
Distribution: Jammu & Kashmir, Himachal Pradesh, and Sikkim in India, and Nepal.
Comments: Schwarz (1939) and Ellerman (1961) included this species under *Alticola stoliczkanus* (Blanford, 1875). Feng *et al.* (1986) reinstated it as a species (Musser & Carleton, 1993). Biswas and Khajuria (1955) described new species of *Alticola*, named Bhatnagar's Vole *Alticola bhatnagari* Biswas & Khajuria, 1955 from type specimen collected from Mingbo, Lanmoche Valley, Khumbu, Nepal. Agrawal (2000) synonymized this species with *Alticola stracheyi* (Thomas, 1880) based on their similarities in body colour and measurements.

Genus *Ellobius* Fischer, 1814
Mole-voles

This genus belongs to the subfamily *Arvicolinae* and is represented by a single species in the region (Ellerman, 1961; Corbet & Hill, 1992).

8. *Ellobius fuscocapillus* (Blyth, 1842)
1842. *Georhychus fuscocapillus* Blyth, J. Asiatic Soc. Beng., 10: 928. [*nom. nud.* 1843, J. Asiatic Soc. Beng., 11: 887]
Name: Afghan Mole-vole
Type locality: Quetta, Baluchistan, Pakistan
Synonyms: *Georhychus fuscocapillus* Blyth, 1842
Subspecies: None
Distribution: Pakistan
Comments: Refer Roberts (1997) for morphological details.

Genus *Eothenomys* Miller, 1896
Voles

This genus belongs to the subfamily *Arvicolinae* and is represented by a single species in the region (Ellerman, 1961; Corbet & Hill, 1992).

9. *Eothenomys melanogaster* (Milne-Edwards, 1871)
1871. *Arvicola melanogaster* Milne-Edwards, in David Nouv. Arch. Mus. Hist. Nat. Paris, Bull., 7: 93 (footnote).
Name: Pere David's Vole
Type locality: Moupin, W. Sichuan, China
Synonyms: *Arvicola melanogaster* Milne-Edwards, 1871
Subspecies: *Eothenomys melanogaster libonotus* Hinton, 1923
Distribution: Arunachal Pradesh in India.
Comments: Ellerman (1961) included two subspecies, namely *Eothenomys melanogaster cachinus* (Thomas, 1921) and *Eothenomys melanogaster libonotus* Hinton, 1923. The former subspecies is not of our interest as it is reported from Myanmar. Corbet and Hill (1992) and Agrawal (2000) include only the latter subspecies for India.

Genus *Hyperacrius* Miller, 1896
Voles

This genus belongs to the subfamily *Arvicolinae* and is represented by two species in the region (Ellerman, 1961; Corbet and Hill, 1992). *Hyperacrius* was proposed by Miller (1896) as a subgenus, Hinton (1926) raised it to generic level. Both the species are endemic to the region.

10. *Hyperacrius fertilis* (True, 1894)
1894. *Arvicola fertilis* True, Proc. U.S. nation. Mus., 17: 10.
Name: True's Vole
Type locality: Pir Panjal Mt., Jammu & Kashmir, India
Synonyms: *Arvicola fertilis* True, 1894
Microtus (Hyperacrius) aitchisoni Miller, 1897
Microtus (Hyperacrius) brachelix Miller, 1899
Subspecies: *Hyperacrius fertilis zygomaticus* Phillips, 1969
Distribution: Endemic to the region. Jammu & Kashmir in India, Pakistan-occupied-Kashmir and Pakistan.
Comments: Ellerman (1961) listed two subspecies, namely *Hyperacrius fertilis fertilis* (True, 1894) and *Hyperacrius fertilis brachelix* (Miller, 1899). Regarding *Hyperacrius aitchisoni* Miller (1897), Ellerman (1961) remarked that "it is most likely a race of *fertilis*, but might perhaps be a race of *wynnei*". Corbet and Hill (1992) however synonymized *Hyperacrius aitchisoni* (Miller, 1897) with *Hyperacrius fertilis* (True, 1894). Agrawal (2000) synonymized *Microtus (Hyperacrius) brachelix* (Miller, 1899) with *Hyperacrius fertilis* (True, 1894) and does not mention anything about *Hyperacrius aitchisoni* (Miller, 1897). See Phillips (1969) for further details.

11. *Hyperacrius wynnei* (Blanford, 1881)
1881. *Arvicola wynnei* Blanford, J. Asiatic Soc. Beng., 49(1880): 244-245.
Name: Murree Vole

Type locality: Murree, Rawilpindi, Punjab, Pakistan
Synonyms: *Arvicola wynnei* Blanford, 1881

Subspecies: *Hyperacrius wynnei traubi* Phillips, 1969

Distribution: Endemic to the region. Pakistan-occupied-Kashmir and Pakistan.

Comments: Phillips (1969) restricts its range to N. Pakistan. However, Corbet and Hill (1992), and Agrawal (2000) opine that it also occurs in India based on Ellerman (1961) report of its presence from Sardalla in Kashmir.

Genus *Microtus* Schrank, 1798
Field Voles

This genus belongs to the subfamily *Arvicolinae* and is represented by three species in the region. Ellerman (1961) listed five species from the region. Corbet and Hill (1992) does not write in detail about the *Microtus* Schrank, 1798 species belonging to the subgenus *Pitymys* Mc.Murtrie, 1831. However, Musser and Carleton (1993) has synonymized *Pitymys* Mc.Murtrie, 1831 with *Microtus* Schrank, 1798, a trend that we have followed here.

12. *Microtus juldaschi* (Severtzov, 1879)
1879. *Neodon juldaschi* Severtzov, Sap. Turk. Otd. Obsh. Lubit. Estestv., 1: 63.
Name: Juniper Vole
Type locality: near Aksu, Karakul Lake basin, Kirghizia
Synonyms: *Neodon juldaschi* Severtzov, 1879
Pitymys juldaschi (Severtzov, 1879)
Microtus carruthersi Thomas, 1909
Pitymys carruthersi (Thomas, 1909)
Subspecies: None
Distribution: North Pakistan, and probably in Pakistan-occupied-Kashmir (Musser & Carleton, 1993).
Comments: It belongs to subgenus *Neodon* Hodgson, 1849. The status of the distinctive *Microtus carruthersi* Thomas, 1909 is unresolved (Musser & Carleton, 1993). This form was treated by some as a separate species (Ellerman and Morrison-Scott, 1951), while by others as a synonym of *Microtus juldaschi* (Severtzov, 1879) (Corbet, 1978). At present, following Musser and Carleton (1993), we include *Microtus carruthersi* Thomas, 1909 under *Microtus juldaschi* (Severtzov, 1879) with a question.

13. *Microtus leucurus* (Blyth, 1863)
1863. *Phaiomys leucurus* Blyth, J. Asiatic Soc. Beng., 32: 89.
Name: Blyth's Vole
Type locality: Lake Chomoriri (Tsomoriri), Ladakh, India
Synonyms: *Phaiomys leucurus* Blyth, 1863
Arvicola blythi Blanford, 1875
Microtus (*Phaiomys*) *waltoni petulans* Wroughton, 1911
Pitymys leucurus petulans (Wroughton, 1911)
Phaiomys everesti Thomas & Hinton, 1922
Pitymys leucurus everesti (Thomas & Hinton, 1922)
Subspecies: *Microtus leucurus leucurus* (Blyth, 1863)
Distribution: Jammu & Kashmir, and Himachal Pradesh in India, and Nepal.
Comments: Ellerman (1961) included this species under subgenus *Phiaomys* Blyth, 1863, and listed three subspecies *Pitymys leucurus leucurus* (Blyth, 1863), *Pitymys leucurus petulans* (Wroughton, 1911), and *Pitymys leucurus everesti* (Thomas & Hinton, 1922). Agrawal (2000) synonymized all the subspecies under the nominate species.

14. *Microtus sikimensis* (Hodgson, 1849)
1849. *Neodon sikimensis* Hodgson, Ann. Mag. nat. Hist., (2)3: 203.
Name: Sikkim Vole
Type locality: Sikkim, India
Synonyms: *Neodon sikimensis* Hodgson, 1849
Arvicola thricolis Gray, 1863
Subspecies: None
Distribution: Sikkim and West Bengal in India, Bhutan and Nepal (Biswas & Khajuria, 1957; Abe, 1971).
Comments: Ellerman (1961) included this under subgenus *Neodon* Hodgson, 1849.

Subfamily: *Calomyscinae*
Genus *Calomyscus* Schrank, 1798
Mouse-like Hamsters

This genus belongs to the subfamily *Calomyscinae* and is represented by two species in the region. Ellerman (1961) and Corbet and Hill (1992) listed this genus under subfamily *Cricetinae*. Musser and Carleton (1993) referring Vorontsov and Potapova (1979), and Carleton and Musser (1989) remark that the combination of distinctive features set these forms apart from the old world hamsters and close to cricetodontines, a group hitherto supposed extinct. Thus, to accommodate them, Vorontsov and Potapova (1979) erected subfamily *Calomyscinae*. Ellerman and Morrison-Scott (1951) considered this genus as monotypic, while Vorontsov *et al.* (1979) treated most of the subspecies of *Calomyscus bailwardi* Thomas, 1905 as distinct species. Commenting on this Musser and Carleton (1993) opine that this arrangement "should be tested with additional data". However, Corbet and Hill (1992) listed *baluchi* including *hotsoni* as subspecies of *Calomyscus bailwardi* Thomas, 1905. Presently, after Musser and Carleton (1993), *Calomyscus bailwardi* Thomas, 1905 is distributed in Iran and is not found in South Asian region.

15. *Calomyscus baluchi* Thomas, 1920
1920. *Calomyscus baluchi* Thomas, J. Bombay nat. Hist. Soc., 26: 939.
Name: Baluchi Mouse-like Hamster
Type locality: Jelat (or Kelat) dist., Baluchistan, Pakistan
Synonyms: *Calomyscus mustersi* Ellerman, 1948
Subspecies: None
Distribution: Baluchistan in Pakistan.
Comments: Ellerman (1961) synonymized *Calomyscus baluchi* Thomas, 1920 with *Calomyscus bailwardi bailwardi* Thomas,

1905 a trend also followed by Corbet and Hill (1992) who treated *baluchi* as a subspecies of *Calomyscus bailwardi* Thomas, 1905. Musser and Carleton (1993) quoting Vorontsov *et al.* (1979) remark that *Calomyscus baluchi* Thomas, 1920 includes *mustersi* (full name *Calomyscus mustersi* Ellerman, 1948), that was earlier treated as subspecies of *Calomyscus bailwardi* Thomas, 1905 by Corbet and Hill (1992). Wilson and Reeder (1993) consider this as a distinct species.

16. *Calomyscus hotsoni* Thomas, 1920

1920. C*alomyscus hotsoni* Thomas, J. Bombay nat. Hist. Soc., 26: 938.
Name: Hotson's Mouse-like Hamster
Type locality: Gwambuk Kaul, 50km SW Pangjur (26°30'N, 63°50'E), Baluchistan, Pakistan
Synonyms: *Calomyscus bailwardi hotsoni* (Thomas, 1920)
Subspecies: None
Distribution: Endemic to Pakistan. Baluchistan in Pakistan.
Comments: Ellerman (1961) synonymized *Calomyscus hotsoni* Thomas, 1920 with *Calomyscus bailwardi hotsoni* (Thomas, 1920). Corbet and Hill (1992) synonymized *hotsoni* with *baluchi* and treated the latter as a subspecies of *Calomyscus bailwardi* Thomas, 1905. Musser and Carleton (1993) quoting Vorontsov *et al.* (1979), and WIlson and Reeder (1993) recognize this as a distinct species and comment that it is known only from vicinity of type locality.

Subfamily: *Cricetinae*
Genus *Cricetulus* Milne-Edwards, 1871
Dwarf Hamsters

This genus belongs to the subfamily *Cricetinae* and is represented by two species in the region (Ellerman, 1961; Corbet and Hill, 1992).

17. *Cricetulus alticola* Thomas, 1917

1917. *Cricetulus alticola* Thomas, Ann. Mag. nat. Hist., (8)19: 455.
Name: Ladakh Hamster
Type locality: Shushul, Ladakh, Jammu & Kashmir, India
Synonyms: *Cricetulus alticola tibetanus* Thomas & Hinton, 1922
Subspecies: None
Distribution: Ladakh in India, and Nepal.
Comments: Ellerman (1961) synonymized the Tibetan race with the nominate *Cricetulus alticola* Thomas, 1917, about which Agrawal (2000) offers no comments. Feng *et al.* (1986) considered it a subspecies of *Cricetulus kamensis* (Satunin, 1903) which Ellerman and Morrison-Scott (1951) treated as *incertae sedis*. Corbet and Hill (1992), and Musser and Carleton (1993) treated it as a distinct species. However, Corbet and Hill (1992) do not write anything in detail about this taxon since their work is restricted to species reported from Indomalayan region only.

18. *Cricetulus migratorius* (Pallas, 1773)

1773. *Mus migratorius* Pallas, Reise Prov. Russ. Reichs., 2: 703.
Name: Little Grey Hamster
Type locality: Lower Ural river, W. Kazakhstan
Synonyms: *Mus migratorius* Pallas, 1773
Cricetus (Cricetulus) fulvus Blanford, 1875
Subspecies: *Cricetulus migratorius migratorius* (Pallas, 1773)
Cricetulus migratorius cinerascens (Wagner, 1848)
Cricetulus migratorius fulvus (Blanford, 1875)
Distribution: Jammu & Kashmir in India, Pakistan-occupied-Kashmir and Pakistan.
Comments: Ellerman (1961) listed two subspecies occurring from the region, while Corbet and Hill (1992) do not mention anything about the same. Ellerman and Morrison-Scott (1951) list *Cricetulus migratorius cinerascens* (Wagner, 1848) from Pakistan. Agrawal (2000) remarks that the subspecies listed by Ellerman (1961) resemble closely, hence do not warrant subspecific separation, but lists one subspecies *Cricetulus migratorius fulvus* (Blanford, 1875) occurring in the Indian range!

Subfamily: *Gerbillinae*
Genus *Gerbillus* Desmarest, 1804
Gerbils

This genus belongs to the subfamily *Gerbillinae* and is represented by four species in the region (Corbet and Hill, 1992). Ellerman (1961) included three species under two subgenera, *Dipodillus* Lataste, 1881 and *Gerbillus* Desmarest, 1804.

19. *Gerbillus aquilus* Schlitter & Stezer, 1972

1972. *Gerbillus aquilus* Schlitter & Stezer, Proc. Biol. Soc. Washington, 86: 167.
Name: Swarthy Gerbil
Type locality: 60 km W of Kerman, Iran
Synonyms: None
Subspecies: None
Distribution: Baluchistan in Pakistan.
Comments: It is included in subgenus *Gerbillus* Desmarest, 1804. Lay and Nadler (1975) and Lay (1983) treated *Gerbillus aquilus* Schlitter & Stezer, 1972 separate from *Gerbillus cheesmani* Thomas, 1919, but Corbet and Hill (1992) considered it a subspecies of the latter. Musser and Carleton (1993) treat it distinct too.

20. *Gerbillus cheesmani* Thomas, 1919

1919. *Gerbillus cheesmani* Thomas, J. Bombay nat. Hist. Soc., 26: 748.
Name: Cheesman's Gerbil
Type locality: near Basra, Lower Euphrates, Iraq
Synonyms: None
Subspecies: None
Distribution: Baluchistan in Pakistan.
Comments: It is included in subgenus *Gerbillus* Desmarest, 1804. Ellerman (1961) gives nothing more than a passing reference of this species. Musser and Carleton (1993) do not

record it from the region but treat it as a distinct species and mention that Lay and Nadler (1975); Lay (1983); and Harrison and Bates (1991) reviewed this species.

21. *Gerbillus gleadowi* Murray, 1886
1886. *Gerbillus gleadowi* Murray, Ann. Mag. nat. Hist., (5)17: 246.
Name: Little Hairy-footed Gerbil
Type locality: Beruto, 15 miles SW of Rehti, Rohri dist., Sind, Pakistan
Synonyms: None
Subspecies: None
Distribution: Endemic to the region. Rajasthan, Gujarat in India, and Pakistan.
Comments: Ellerman (1961) includes this species under the subgenus *Gerbillus* Desmarest, 1804.

22. *Gerbillus nanus* Blanford, 1875
1875. *Gerbillus nanus* Blanford, Ann. Mag. nat. Hist., (4)16: 312.
Name: Baluchistan Gerbil
Type locality: Gedrosia, Baluchistan, Pakistan
Synonyms: *Dipodillus indus* Thomas, 1920
Subspecies: *Gerbillus nanus nanus* Blanford, 1875
Distribution: Rajasthan and Gujarat in India, and Pakistan.
Comments: Ellerman (1961) include *Dipodillus indus* Thomas, 1920 as subspecies of *Gerbillus dasyurus* (Wagner, 1842). Subsequently after Harrison (1972), the *Dipodillus indus* Thomas, 1920 has been synonymized with *Gerbillus nanus* Blanford, 1875. Agrawal (2000) opines that the nominate species occurs in the region.

Genus *Meriones* Illiger, 1811
Jirds, Sand Rats

This genus belongs to the subfamily *Gerbillinae* and is represented by four species in the region (Corbet & Hill, 1992). Ellerman (1961) included four species under three subgenera, *Cheliones* Thomas, 1919, *Parameriones* Heptner, 1937, and *Pallasiomys* Heptner, 1933.

23. *Meriones crassus* Sundevall, 1842
1842. *Meriones crassus* Sundevall, K. Svenska Vetensk. Akad. Handl., Ser 3: 233.
Name: Sundevall's Jird
Type locality: Ain Musa, Sinai, Egypt
Synonyms: *Gerbillus swinhoei* Scully, 1881
Meriones crassus swinhoei (Scully, 1881)
Subspecies: *Meriones crassus crassus* Sundevall, 1842
Distribution: Pakistan.
Comments: Ellerman (1961) included this species in subgenus *Pallasiomys* Heptner, 1933, and listed one subspecies *Meriones crassus swinhoei* (Scully, 1881) from the region. Corbet and Hill (1992) synonymized *Gerbillus swinhoei* Scully, 1881 with *Meriones crassus* Sundevall, 1842 following observations made by Koffler (1972).

24. *Meriones hurrianae* (Jerdon, 1867)
1867. *Gerbillus hurrianae* Jerdon, Mamm. India, 186.
Name: Indian Desert Gerbil
Type locality: Hissar, Haryana, India
Synonyms: *Gerbillus hurrianae* Jerdon, 1867
Cheliones hurrianae collinus Thomas, 1919
Subspecies: None
Distribution: Haryana, Rajasthan and Gujarat in India, and Pakistan.
Comments: Ellerman (1961) included this species in subgenus *Cheliones* Thomas, 1919. Roberts (1997) reviewed the Pakistan population.

25. *Meriones libycus* Lichtenstein, 1823
1823. *Meriones libycus* Lichtenstein, Verz. Doubl. Zool. Mus. Univ. Berlin, 5.
Name: Libyan Jird
Type locality: near Alexandria, Egypt
Synonyms: *Gerbillus erythrourus* Gray, 1842
Meriones libycus eryhrourus (Gray, 1842)
Subspecies: None
Distribution: Pakistan.
Comments: Ellerman (1961) included this species in subgenus *Pallasiomys* Heptner, 1933, and listed one subspecies *Meriones libycus erythrourus* (Gray, 1842) - the Afghan Jird, from this region. Corbet and Hill (1992) synonymize *Gerbillus erythrourus* Gray, 1842 with *Meriones libycus* Lichtenstein, 1823. Musser and Carleton (1993) provide a detailed remark on different works on this species.

26. *Meriones persicus* (Blanford, 1875)
1875. *Gerbillus persicus* Blanford, Ann. Mag. nat. Hist., (4)16: 312.
Name: Persian Jird
Type locality: Kohrud, 150 miles N of Isfahan, Iran
Synonyms: *Gerbillus persicus* Blanford, 1875
Subspecies: *Meriones persicus persicus* Blanford, 1875,
Meriones persicus baptistae Thomas, 1920
Distribution: Pakistan.
Comments: Ellerman (1961) included this species in subgenus *Parameriones* Heptner, 1937, and listed two subspecies *Meriones persicus persicus* Blanford, 1875 and *Meriones persicus baptistae* Thomas, 1920. Roberts (1997) reviewed the Pakistan population.

Genus *Rhombomys* Wagner, 1841
Great Gerbil

This genus belongs to the subfamily *Gerbillinae* and is represented by a single species in the region (Corbet & Hill, 1992). Ellerman (1961) does not include this in his account.

27. *Rhombomys opimus* (Lichtenstein, 1823)
1823. *Meriones opimus* Lichtenstein, Naturh. Abh. Eversmann's Reise, 122.
Name: Great Gerbil

Type locality: between Orenburg and Bukhara, Uzbekistan
Synonyms: *Meriones opimus* Lichtenstein, 1823
Subspecies: None
Distribution: Pakistan.
Comments: Roberts (1997) reviewed the Pakistan population. Corbet and Hill (1992) inform that it occurs along the western border of Pakistan, and also provide in brief the characteristic features of the genus.

Genus *Tatera* Lataste, 1882
Large Gerbils

This genus belongs to the subfamily *Gerbillinae* and is represented by a single species in the region (Corbet & Hill, 1992).

28. *Tatera indica* (Hardwicke, 1807)
1807. *Dipus indicus* Hardwicke, Trans. Linn. Soc. London, 8: 279.
Name: Indian Gerbil (Antelope Rat)
Type locality: between Benaras (Varnasi) and Hardwar, Uttar Pradesh, India
Synonyms: *Dipus indicus* Hardwicke, 1807
Gerbillus otarius Cuvier, 1838
Gerbillus cuvieri Waterhouse, 1838
Gerbillus hardwickei Gray, 1843
Tatera indica hardwickei (Gray, 1843)
Tatera ceylonica Wroughton, 1906
Tatera indica ceylonica (Wroughton, 1906)
Tatera sherrini Wroughton, 1917
Tatera dunni Wroughton, 1917
Subspecies: *Tatera indica indica* (Hardwicke, 1807)
Tatera indica cuvieri (Waterhouse, 1838)
Distribution: Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Rajasthan, Gujarat, Madhya Pradesh, Chattisgarh, Maharashtra, Uttar Pradesh, Uttaranchal, Bihar, Jharkhand, West Bengal, Goa, Karnataka, Andhra Pradesh, Tamil Nadu and Kerala in India; Pakistan; Nepal; and Sri Lanka.
Comments: Ellerman (1961) listed four subspecies *Tatera indica indica* (Hardwicke, 1807), *Tatera indica hardwickei* (Gray, 1843), *Tatera indica ceylonica* (Wroughton, 1906), and *Tatera indica cuvieri* (Waterhouse, 1838) from the region. Agrawal and Chakraborty (1981); Bates (1988); Corbet and Hill (1992); and Agrawal (2000) list only two valid subspecies *Tatera indica indica* (Hardwicke, 1807) and *Tatera indica cuvieri* (Waterhouse, 1838) from this region.

Subfamily: *Murinae*

Genus *Acomys* Geoffroy, 1838
Spiny Mice

This genus belongs to subfamily *Murinae*. Only one species occurs in South Asia (Ellerman, 1961; Corbet & Hill, 1992).

29. *Acomys dimidiatus* (Cretzschmar, 1826)
1826. *Mus dimidiatus* Cretzschmar, in Rüppel, Atlas zu der Reise im Nördliche Africa, Saugeth. 13: 37
Name: Arabian Spiny Mouse
Type locality: Sinai, Egypt
Synonyms: *Mus dimidiatus* Cretzschmar, 1826
Acomys flavidus Thomas, 1917
Subspecies: None
Distribution: Pakistan.
Comments: Much confusion has arisen over the specific identity of species within the *Acomys cahirinus – dimidiatus* complex. Ellerman (1961) remarked that *Acomys cahirinus flavidus* (Thomas, 1917) was not distinguishable from *Acomys dimidiatus* (Cretzschmar, 1826). Musser and Carleton (1993) opined that the *cahirinus – dimidiatus* complex needed critical systematic revision. However, recently, Denys *et al.* (1994) cited dental characters to clearly separate a number of species within the complex including *Acomys dimidiatus* (Cretzschmar, 1826). Hence *Acomys dimidiatus* (Cretzschmar, 1826), here, has been considered as a valid species. Distribution in Pakistan was reviewed by Bates (1994) under *Acomys cahirinus* (Desmarest, 1819).

Genus *Apodemus* Kaup, 1829
Palaearctic Wood Mice

This genus belongs to subfamily *Murinae*. Currently there are five species recognized from South Asia. One species is endemic to Nepal (Gemmeke & Niethammer, 1982). All the species belong to subgenus *Sylvaemus* Ognev, 1924. Earlier all the forms were referred under two species, namely, *Apodemus sylvaticus* (Linnaeus, 1758) and *Apodemus flavicollis* (Melchoir, 1834) (Ellerman, 1961). *Apodemus flavicollis* (Melchoir, 1834) – an European species, is not a valid species for the region.

30. *Apodemus draco* (Barrett-Hamilton, 1900)
1900. *Mus sylvaticus draco* Barrett-Hamilton, Proc. zool. Soc. London, 1900: 418.
Name: South China Wood Mouse
Type locality: Kuatan, NW Fujian, S China
Synonyms: *Mus sylvaticus draco* Barrett-Hamilton, 1900
Apodemus sylvaticus draco (Barrett-Hamilton, 1900)
Subspecies: None
Distribution: Arunachal Pradesh (Corbet & Hill, 1992) and Assam (Musser & Carleton, 1993), India.
Comments: Ellerman and Morrison-Scott (1951), and Ellerman (1961) treated it as a subspecies of *Apodemus sylvaticus* (Linnaeus, 1758). Ellerman (1941); Corbet (1978); and Corbet and Hill (1991, 1992) treated it as distinct species.

31. *Apodemus gurkha* Thomas, 1924
1924. *Apodemus gurkha* Thomas, J. Bombay nat. Hist. Soc., 29(4): 888.
Name: Himalayan Wood Mouse
Type locality: Laprak, Gorkha, Nepal
Synonyms: *Apodemus flavicollis gurkha* (Thomas, 1924)

Subspecies: None
Distribution: Endemic to Nepal, restricted in distribution to Central Nepal.
Comments: Ellerman and Morrison-Scott (1951), and Ellerman (1961) considered it as a subspecies of *Apodemus flavicollis* (Melchior, 1834). Corbet and Hill (1992); Musser and Carleton (1993); and Agrawal (2000) considered it a distinct species.

32. *Apodemus latronum* (Thomas, 1911)
1911. *Apodemus speciosus latronum* Thomas, Abstr. Proc. zool. Soc. London, 100: 49; Proc. zool. Soc. London, 1912: 137.
Name: Sichuan Field Mouse
Type locality: Tatsienlu, W Szechwan, China
Synonyms: *Apodemus speciosus latronum* Thomas, 1911
Apodemus flavicollis latronum (Thomas, 1911)
Subspecies: None
Distribution: Arunachal Pradesh, India (Corbet & Hill, 1992).
Comments: Ellerman and Morrison-Scott (1951), and Ellerman (1961) considered it as a subspecies of *Apodemus flavicollis* (Melchoir, 1834). Feng *et al.* (1986) treated it as a subspecies of *Apodemus draco* (Barrett-Hamilton, 1900). Corbet (1978), and Corbet and Hill (1992) considered it as a distinct species.

33. *Apodemus orestes* (Thomas, 1911)
1911. *Apodemus speciosus orestes* Thomas, Abstr. Proc. zool. Soc. London, 100: 49; Proc. zool. Soc. London, 1912: 136.
Name: Chinese Wood Mouse
Type locality: Mt. Omei Shan, Szechwan, China
Synonyms: *Apodemus speciosus orestes* Thomas, 1911
Apodemus sylvaticus orestes (Thomas, 1911)
Subspecies: None
Distribution: Arunachal Pradesh, India (Corbet & Hill, 1992; Agrawal, 2000).
Comments: Ellerman (1961) treated *Apodemus orestes* (Thomas, 1911) as a subspecies of *Apodemus sylvaticus* (Linnaeus, 1758). Musser and Carleton (1993) synonymized this species with *Apodemus draco* (Barrett-Hamilton, 1900). However, Corbet and Hill (1992), and Agrawal (2000) treated it as a distinct species.

34. *Apodemus sylvaticus* (Linnaeus, 1758)
1758. *Mus sylvaticus* Linnaeus, Syst. Nat., 10th ed., 1: 62.
Name: Wood Mouse
Type locality: Uppsala, Sweden
Synonyms: *Mus sylvaticus* Linnaeus, 1758
Mus arianus griseus True, 1894
Micromys sylvaticus pentax Wroughton, 1908
Apodemus sylvaticus pentax (Wroughton, 1908)
Apodemus flavicollis rusiges Miller, 1913
Subspecies: *Apodemus sylvaticus wardi* (Wroughton, 1908)
Distribution: Nepal; Jammu & Kashmir, Himachal Pradesh, Haryana, and Uttaranchal in India; and Pakistan.
Comments: Ellerman (1961) included two subspecies, namely *Apodemus sylvaticus pentax* (Wroughton, 1908) from Pakistan and *Apodemus sylvaticus orestes* (Thomas, 1911) from China under this species. Agrawal (2000) lists only one subspecies, namely *Apodemus sylvaticus wardi* (Wroughton, 1908) and synonymised *Apodemus flavicollis rusiges* Miller, 1913 and *Apodemus sylvaticus pentax* (Wroughton, 1908) with this taxon based on overlapping morphometry and pelage colouration. Musser and Carleton (1993) treated *Apodemus orestes* (Thomas, 1911)as a synonym of *Apodemus draco* (Barrett-Hamilton, 1900), and considered *Apodemus sylvaticus wardi* (Wroughton, 1908) and *Apodemus flavicollis rusiges* Miller, 1913 as distinct species by themselves. However, we synonymized *Apodemus flavicollis rusiges* Miller, 1913 and included *Apodemus sylvaticus wardi* (Wroughton, 1908) as subspecies of *Apodemus sylvaticus* (Linnaeus, 1758) following Corbet and Hill (1992), and Agrawal (2000). Agrawal (2000) has provided detailed account based on fairly large sample size deposited in Zoological Survey of India collection before concluding on the taxonomic status of the subspecies and species.

Genus *Bandicota* Gray, 1873
Bandicoot-rats

This genus belongs to subfamily *Murinae*. Currently there are three species recognized from South Asia.

35. *Bandicota bengalensis* (Gray & Hardwicke, 1833)
1833. *Arvicola bengalensis* Gray (in Hardwicke, 1830-35), Illustr. Indian Zool., 2: pl. 21.
Name: Lesser Bandicoot-rat
Type locality: Bengal, India
Synonyms: *Arvicola bengalensis* Gray & Hardwicke, 1833
Mus kok Gray, 1837
Mus (Neotoma) providens Elliot, 1839
Mus dubius Kelaart, 1850
Mus deccaensis Tytler, 1854
Mus tarayensis Horsfield, 1855
Mus plurimammis Horsfield, 1855
Mus morungensis Horsfield, 1855
Mus (Nesokia) blythianus Anderson, 1878
Mus (Nesokia) barclayanus Anderson, 1878
Nesokia gracilis Nehring, 1902
Gunomys varius Thomas, 1907
Gunomys varillus Thomas, 1907
Gunomys lordi Wroughton, 1908
Gunomys sindicus Wroughton, 1908
Gunomys kok insularis Phillips, 1936
Subspecies: *Bandicota bengalensis bengalensis* (Gray & Hardwicke, 1833)
Bandicota bengalensis wardi (Wroughton, 1908)
Distribution: Almost throughout India; Pakistan; Nepal; Bangladesh.
Comments: Ellerman and Morrison-Scott (1951), and Ellerman (1961) listed five subspecies, namely, *Bandicota bengalensis bengalensis* (Gray & Hardwicke, 1833), *Bandicota bengalensis kok* (Gray, 1837), *Bandicota bengalensis gracilis* (Nehring, 1902), *Bandicota bengalensis varius* (Thomas, 1907), and *Bandicota bengalensis wardi* (Wroughton, 1908). Corbet and

Hill (1992) quoting Agrawal and Chakraborty (1976) included three subspecies from the Indo-Malayan region. For South Asia, only two subspecies, namely – *Bandicota bengalensis bengalensis* (Gray, 1835) and *Bandicota bengalensis wardi* (Wroughton, 1908) are valid. The latter subspecies is restricted in distribution to the Himalayan tracts of Jammu & Kashmir and Himachal Pradesh (Agrawal, 2000). Pradhan (1979) and Pradhan *et al.* (*Comm.*) have doubted the inclusion of *kok* and *lordi* populations in *Bandicota bengalensis* (Gray & Hardwicke, 1833) on the basis of morphological, osteomorphological and biochemical studies.

36. *Bandicota indica* (Bechstein, 1800)

1800. *Mus indicus* Bechstein, In Pennant, Allgemeine Ueber Vierf. Thiere., 2: 497.
Name: Large Bandicoot-rat
Type locality: Pondicherry, India
Synonyms: *Mus indicus* Bechstein, 1800
? *Mus bandicota* Bechstein, 1800
Mus malabarica Shaw, 1801
Mus perchal Shaw, 1801
Mus (*Rattus*) *nemorivagus* Hodgson, 1836
Mus macropus Hodgson, 1845
Mus (*Nesokia*) *elliotanus* Anderson, 1878
Subspecies: *Bandicota indica indica* (Bechstein, 1800)
Bandicota indica nemorivaga (Hodgson, 1836)
Bandicota indica malabarica (Shaw, 1801)
Distribution: India; Pakistan; Nepal; Bangladesh; Sri Lanka.
Comments: Ellerman (1961) listed three subspecies. Chakraborty and Chakraborty (1991), and Agrawal (2000) recognize two subspecies, namely – *Bandicota indica indica* (Bechstein, 1800) and *Bandicota indica nemorivaga* (Hodgson, 1836). The former subspecies is widespread including most of India, Pakistan, and Sri Lanka, while the latter subspecies is restricted in distribution to Nepal; Bangladesh and northeastern India including West Bengal, Meghalaya, Assam, and Manipur. However, Pradhan *et al.* (1993) while revising genus *Bandicota*, have reported third valid subspecies from Western Ghats in addition to the above mentioned two subspecies. *Bandicota indica malabarica* (Shaw, 1801) is restricted to, but, is widespread in distribution in the Western Ghats. The revisionary studies of genus *Bandicota* reported by Pradhan *et al.* (1993) and Pradhan *et al.* (*Comm.*) are based on the latest and widely accepted morpho/osteo-taxonomical, biochem-taxonomical, genetical and hair pattern analytical.techniques.

37. *Bandicota maxima* Pradhan *et al*., 1993

1993. *Bandicota maxima* Pradhan *et al.,* Rec. Zool. Surv. India, 93(1, 2): 175-200.
Name: Large Bandicoot-rat
Type locality: Nanapeth, Pune, India
Synonyms: *Mus giganteus* Hardwicke, 1804
Subspecies: None
Distribution: India; Nepal; Bangladesh.
Comments: Pradhan *et al.* (1989) proposed the population of the large-sized bandicoot rats from India as *Bandicota gigantea non* Hardwicke, which was not accepted by Corbet and Hill (1992). Later detailed revisionary studies of genus *Bandicota* reported by Pradhan *et al.* (1993) resulted in describing a new species, *Bandicota maxima* Pradhan *et al.*, 1993. But, while raising some doubts, Agrawal (2000) again tentatively kept *Bandicota maxima* Pradhan *et al.*, 1993 in *Bandicota indica* (Bechstein, 1800). However, the studies reported by Pradhan *et al.* (1993) were based on the latest and widely accepted morpho/osteo-taxonomical, biochem-taxonomical, genetical and hair pattern analytical techniques carried out on freshly collected adult specimens. While following the available keys they found it, rather, impossible at that time to merge the population of large sized bandicoot rats in *Bandicota indica* (Bechstein, 1800) due to distinct differences in number of key characters and treated it as distinct species. On the basis of the observations made by Pradhan *et al.* (1993) and Pradhan *et al.* (*Comm.*), we are retaining *Bandicota maxima* Pradhan *et al.*, 1993. For further details see Pradhan *et al.* (1993).

Genus *Berylmys* Ellerman, 1947
Rats

This genus belongs to subfamily *Murinae*. Earlier included as a subgenus under the genus *Rattus* Fischer, 1803. The species belonging to this genus were earlier listed under subgenera *Berylmys* [*Rattus* (*Berylmys*) *manipulus* (Thomas, 1916) and *Rattus* (*Berylmys*) *berdmorei* (Blyth, 1851)] and *Stenomys* [*Rattus* (*Stenomys*) *bowersi* (Anderson, 1879) including the subspecies *Rattus* (*Stenomys*) *bowersi mackenziei* (Thomas, 1916)]. Currently there are three species recognized from South Asia.

38. *Berylmys bowersi* (Anderson, 1879)

1879. *Mus bowersii* Anderson, Anat. Zool. Res. Yunnan, 304.
Name: Bower's Rat
Type locality: Hotha, Kakhyen Hills, Yunnan, China
Synonyms: *Mus bowersii* Anderson, 1879
Rattus bowersi (Anderson, 1879)
Subspecies: *Berylmys bowersi bowersi* (Anderson, 1879)
Distribution: Arunachal Pradesh, Meghalaya, Nagaland, Mizoram, and Manipur in India.
Comments: Ellerman (1961) included this species under *Rattus (Stenomys) bowersi* (Anderson, 1879) and included three subspecies, namely *Rattus bowersi bowersi* (Anderson, 1879); *Rattus bowersi mackenziei* (Thomas, 1916) and *Rattus bowersi feae* (Thomas, 1916). Later, Musser and Newcomb (1983) revised the species belonging to subgenera of *Rattus* Fischer, 1803 and proposed *Berylmys* genus as consisting of four species from the Indo-Malayan region, namely *Berylmys manipulus* (Thomas, 1916); *Berylmys berdmorei* (Blyth, 1851); *Berylmys mackenziei* (Thomas, 1916) and *Berylmys bowersi* (Anderson, 1879). Corbet and Hill (1992), and Agrawal (2000) also followed this scheme.

39. *Berylmys mackenziei* (Thomas, 1916)
1916. *Epimys mackenziei* Thomas, J. Bombay nat. Hist. Soc., 24(3): 410.
Name: Mackenzie's Rat
Type locality: 50 miles west of Kindat, Chin Hills, Burma (now Myanmar)
Synonyms: *Epimys mackenziei* Thomas, 1916
Rattus wellsi Thomas, 1921
Subspecies: None
Distribution: Arunachal Pradesh, Meghalaya, Nagaland, Mizoram, and Manipur in India.
Comments: Ellerman (1961) included this as a subspecies of *Rattus* (*Stenomys*) *bowersi* (Anderson, 1879). Later, following revision by Musser and Newcomb (1983) it was upgraded to species status (Corbet & Hill, 1992). Agrawal (2000) also considers it to be a distinct species.

40. *Berylmys manipulus (*Thomas, 1916)
1916. *Epimys manipulus* Thomas, J. Bombay nat. Hist. Soc., 24(3): 413.
Name: Manipur Rat
Type locality: Kampat, 20 mile west of Kindat, Kabaw Valley, C. Myanmar (now Myanmar)
Synonyms: *Epimys manipulus* Thomas, 1916
Rattus manipulus kekrimus Roonwal, 1948
Subspecies: *Berylmys manipulus manipulus* (Thomas, 1916)
Distribution: Assam, Nagaland, and Manipur in India.
Comments: Ellerman (1961) included this under the subgenus *Berylmys* Ellerman, 1947, and included two subspecies, namely, *Rattus manipulus manipulus* (Thomas, 1916) and *Rattus manipulus kekrimus* Roonwal, 1948. Corbet and Hill (1992) also indicate this fact. However, Agrawal (2000) synonymized the latter with the former based on the marked morphometric and morphological similarities between the two taxa.

Genus *Chiropodomys* Peters, 1868
Tree-Mouse
This genus belongs to subfamily *Murinae*. Currently only one species is recognized from South Asia.

41. *Chiropodomys gliroides* (Blyth, 1856)
1856. *Mus gliroides* Blyth, J. Asiat. Soc. Beng., 24: 721.
Name: Pencillate-tailed Tree-mouse
Type locality: Cherrapunji, Khasi Hills, Meghalaya, India
Synonyms: *Mus gliroides* Blyth, 1856
Mus peguensis Blyth, 1859
Subspecies: *Chiropodomys gliroides gliroides* (Blyth, 1856)
Distribution: Meghalaya, and Manipur in India.
Comments: Of the five subspecies recognized, the nominate form occurs in the region (Ellerman, 1961; Musser, 1979; Agrawal, 2000).

Genus *Cremnomys* Wroughton, 1912
Rats
This genus belongs to subfamily *Murinae*. Earlier included as a subgenus under the genus *Rattus* Fischer, 1803. The species belonging to this genus was earlier listed under subgenus *Cremnomys* Wroughton, 1912. Currently there are three species recognized from South Asia. One species is endemic to South Asia, while two are endemic to India.

42. *Cremnomys blanfordi* (Thomas, 1881)
1881. *Mus blanfordi* Thomas, Ann. Mag. nat. Hist., (5)7: 24.
Name: Blanford's Rat
Type locality: Kadapa (now Cuddapah), Madras (now Andhra Pradesh), India
Synonyms: *Mus blanfordi* Thomas, 1881
Subspecies: None
Distribution: Endemic to South Asia. Andhra Pradesh, Bihar, West Bengal, Chattisgarh, Madhya Pradesh, Orissa, Maharashtra, Karnataka, Goa, Kerala in India; and Sri Lanka.
Comments: Ellerman (1961) placed this species under the subgenus *Rattus* Fischer, 1803, while Misonne (1969) included it under subgenus *Cremnomys* Wroughton, 1912. Agrawal (2000) treated *Cremnomys* Wroughton, 1912 as genus, and reflected the views that it be treated as a genus by itself as suggested by Misonne (1969) and Mishra (1981) based on its morphology and lice fauna respectively.

43. *Cremnomys cutchicus* Wroughton, 1912
1912. *Cremnomys cutchicus* Wroughton, J. Bombay nat. Hist., 21: 340.
Name: Cutch Rock Rat
Type locality: Dhonsa, Kutch, Gujarat, India
Synonyms: *Rattus cutchicus* (Wroughton, 1912)
Rattus cutchicus cutchicus (Wroughton, 1912)
Cremnomys medius Thomas, 1916
Rattus cutchicus medius (Thomas, 1916)
Cremnomys medius caenosa Thomas, 1916
Cremnomys medius caenosus Thomas, 1916
Cremnomys medius rajput Thomas, 1916
Rattus cutchicus rajput (Thomas, 1916)
Cremnomys australis Thomas, 1916
Rattus cutchicus australis (Thomas, 1916)
Cremnomys australis siva Thomas 1916
Rattus cutchicus siva (Thomas, 1916)
Cremnomys cutchicus leechi Harrison, 1974
Subspecies: None
Distribution: Endemic to India. Gujarat, Karnataka, Bihar, Orissa, Rajasthan in India.
Comments: Ellerman (1961) included this under subgenus *Cremnomys* Wroughton, 1912 and recognized five subspecies, namely – *Rattus cutchicus cucthicus* (Wroughton, 1912), *Rattus cutchicus siva* (Thomas, 1916), *Rattus cutchicus australis* (Thomas, 1916), *Rattus cutchicus medius* (Thomas, 1916), and *Rattus cutchicus rajput* (Thomas, 1916). Corbet and Hill (1992)

list *Cremnomys medius caenosus* Thomas, 1916, *Cremnomys medius rajput* Thomas, 1916, *Cremnomys australis siva* Thomas, 1916, and *Cremnomys cutchicus leechi* Harrison, 1974. Agrawal (2000) considered all the subspecies listed by Ellerman (1961) not being different from one another based on studies carried out on the specimens present with Zoological Survey of India and Bombay Natural History Society and synonymized them with *Cremnomys cutchicus* Wroughton, 1912.

44. *Cremnomys elvira* (Ellerman, 1947)

1947. *Rattus* (*Cremnomys*) *elvira* Ellerman, Ann. Mag. nat. Hist., (11)13: 207.
Name: Large Rock Rat
Type locality: Kurumbpatti, Salem dist., Tamil Nadu, India
Synonyms: *Rattus* (*Cremnomys*) *elvira* Ellerman, 1947
Subspecies: None
Distribution: Endemic to India. Known only from type locality.
Comments: Ellerman (1961) treated it under subgenus *Cremnomys* Wroughton, 1912. This is an endemic rat from Eastern Ghats of Tamil Nadu, India. Musser and Carleton (1993) remark that this species is "still represented by a few specimens from the region of the type locality".

Genus *Dacnomys* Thomas, 1916
Large-toothed Rat

This genus belongs to subfamily *Murinae*. Monotypic genus characterized by unusually large maxillary tooth rows. One species recognized from South Asia.

45. *Dacnomys millardi* Thomas, 1916

1916. *Dacnomys millardi* Thomas, J. Bombay nat. Hist. Soc., 24(3): 405.
Name: Millard's Rat
Type locality: Gopaldhara, near Darjeeling, West Bengal, India
Synonyms: *Dacnomys wroughtoni* Thomas, 1922
Subspecies: *Dacnomys millardi millardi* Thomas, 1916
Dacnomys millardi wroughtoni Thomas, 1922
Distribution: West Bengal, Nagaland, Arunachal Pradesh in India; and Nepal.
Comments: Ellerman (1961) and Agrawal (2000) included two subspecies under this species. Musser (1981) reviewed this genus in detail.

Genus *Diomys* Thomas, 1917

This genus belongs to subfamily *Murinae*. Monotypic genus characterized by small body size and pro-odont incisors. One species recognized from South Asia.

46. *Diomys crumpi* Thomas, 1917

1917. *Diomys crumpi* Thomas, J. Bombay nat. Hist. Soc., 25: 204.
Name: Crump's Mouse
Type locality: Mt. Pasernath, Hazaribagh dist., Bihar (presently in Jharkhand), India
Synonyms: None
Subspecies: None
Distribution: Endemic to the region. Jharkhand, Manipur in India; and Nepal (Ingles *et al.*, 1980).
Comments: Ellerman (1961) mentions about a series of skulls from Frost Collection, Manipur. Although, Musser and Newcomb (1983) report its occurrence from North Myanmar, we retain this taxon as regional endemic considering the population as 'spilled'.

Genus *Golunda* Gray, 1837
Bush-Rats

This genus belongs to subfamily *Murinae*. One species recognized from South Asia.

47. *Golunda ellioti* Gray, 1837

1837. *Golunda ellioti* Gray, Charlesworth's Mag. nat. Hist., 1: 586.
Name: Indian Bush-Rat
Type locality: Dharwar, Karnataka, India
Synonyms: *Mus hirustus* Elliot 1839
Mus myothrix Hodgson, 1845
Golunda ellioti myothrix (Hodgson, 1845)
? *Golunda coffaeus* Kelaart, 1850
Mus newara Kelaart, 1850
Mus nuwara Kelaart, 1850
Golunda ellioti nuwara (Kelaart, 1850)
Pelomys watsoni Blanford, 1876
Golunda ellioti watsoni (Blanford, 1876)
Golunda newara Blanford, 1891
Golunda ellioti paupera Thomas, 1923
Golunda ellioti gujerati Thomas, 1923
Golunda ellioti bombax Thomas, 1923
Golunda ellioti coraginis Thomas, 1923
Golunda ellioti coenosa Thomas, 1923
? *Golunda ellioti limitaris* Thomas, 1923
Subspecies: *Golunda ellioti ellioti* Gray, 1837
Golunda ellioti nuwara (Kelaart, 1850)
Distribution: Jammu & Kashmir, Himachal Pradesh, Haryana, Uttaranchal, Rajasthan, Gujarat, Chattisgarh, Madhya Pradesh, Jharkhand, Orissa, Maharashtra, Andhra Pradesh, Karnataka, Tamil Nadu, West Bengal, Assam, in India; Sri Lanka; Pakistan, Nepal, Bhutan and Bangladesh.
Comments: Ellerman (1961) listed seven subspecies, namely – *Golunda ellioti ellioti* Gray, 1837, *Golunda ellioti gujerati* Thomas, 1923, *Golunda ellioti paupera* Thomas, 1923, *Golunda ellioti nuwara* (Kelaart, 1850), *Golunda ellioti myothrix* (Hodgson, 1845), *Golunda ellioti coenosa* Thomas, 1923, and *Golunda ellioti watsoni* (Blanford, 1876). Ellerman (1961) also opined that "apart from *nuwara*, the races of this species are doubtful and others retained might just as well be placed in the synonymy of the typical form". Corbet and Hill (1992) listed three subspecies, namely *Golunda ellioti ellioti* Gray, 1837, *Golunda ellioti gujerati* Thomas, 1923, and *Golunda ellioti nuwara* (Kelaart, 1850), based on the review by Agrawal and

Chakraborty (1982). However, Agrawal (2000) synonymized *Golunda ellioti gujerati* Thomas, 1923 with the nominate form *Golunda ellioti ellioti* Gray, 1837.

Genus *Hadromys* Thomas, 1911
Bush Rat

This genus belongs to subfamily *Murinae*. Monotypic genus characterized by concave anterior border of the zygomatic plate and broad upper incisors.

48. *Hadromys humei* (Thomas, 1886)
1886. *Mus humei* Thomas, Proc. zool. Soc. Lond., 1886: 63.
Name: Hume's Rat
Type locality: Moirang, Manipur, India
Synonyms: *Mus humei* Thomas, 1886
Subspecies: *Hadromys humei humei* (Thomas, 1886)
Distribution: Manipur, and Assam in India.
Comments: Corbet and Hill (1992) mention about *Hadromys humei yunanensis* Yang & Wang, 1987 from West Yunnan.

Genus *Leopoldamys* Ellerman, 1947
Long-tailed Giant Rats

This genus belongs to subfamily *Murinae*. Earlier included under the genus *Rattus* Fischer, 1803. *Leopoldamys* was erected and treated as a subgenus of *Rattus* by Ellerman (1947). However, Musser (1981) treated it as a distinct genus. Currently there are two species recognized from South Asia.

49. *Leopoldamys edwardsi* (Thomas, 1882)
1882. *Mus edwardsi* Thomas, Proc. zool. Soc. Lond., 1882: 587.
Name: Edward's Rat
Type locality: Kuatan (probably), Mtns of W Fujian, China
Synonyms: *Mus edwardsi* Thomas, 1882
Epimys listeri Thomas, 1916
Epimys listeri garonum Thomas, 1921
Subspecies: *Leopoldamys edwardsi edwardsi* (Thomas, 1882)
Distribution: West Bengal, Arunachal Pradesh, Meghalaya and Nagaland in India. Probably also in Bhutan.
Comments: Ellerman (1961) concluded that there is no significant variation in *listeri* and *edwardsi* and hence synonymised with the latter. Corbet and Hill (1992) recognize *Rattus listeri garonum* Thomas, 1921, while Agrawal (2000) synonymized it with type species. Musser and Carleton (1993) consider the species is in need of taxonomic revision and that samples from Indochina may represent a different species from those from the Malay Peninsula and Sumatra.

50. *Leopoldamys sabanus* (Thomas, 1887)
1887. *Mus sabanus* Thomas, Ann. Mag. nat. Hist., (5)20: 269.
Name: Noisy rat
Type locality: Gunung Kinabalu, Sabah (N Borneo), Malaysia
Synonyms: *Mus sabanus* Thomas, 1887 (many from its range in SE Asia)
Subspecies: None
Distribution: Bangladesh.
Comments: Ellerman (1961) listed two subspecies, namely *Rattus sabanus vociferans* (Miller, 1900) and *Rattus sabanus garonum* (Thomas, 1921) [originally as *Epimys listeri garonum* Thomas, 1921]. *Leopoldamys sabanus* (Thomas, 1887) reported from Meghalaya is a misidentification of *Leopoldamys edwardsi* (Thomas, 1882), as such it does not occur in India (Musser, 1981; Agrawal, 2000). The latter subspecies listed by Ellerman (1961) is presently synonymized with *Leopoldamys edwardsi* (Thomas, 1882)

Genus *Micromys* Dehne, 1841
Pygmy Mouse

This genus belongs to subfamily *Murinae*. Monotypic genus characterized by small size and prehensile tail. One species recognized from South Asia.

51. *Micromys minutus* (Pallas, 1771)
1771. *Mus minutus* Pallas, Reise. Prov. Russ. Reichs., 1: 454.
Name: Harvest Mouse
Type locality: Simbrisk (now Ulyanousk), Ulyanousk, Russia
Synonyms: *Mus minutus* Pallas, 1771
Mus erythrotis Blyth, 1855
Mus pygmaeus Milne-Edwards, 1874
Subspecies: *Micromys minutus erythrotis* (Blyth, 1855)
Distribution: Meghalaya and Nagaland in India.
Comments: Ellerman (1961) and Agrawal (2000) recognize *Micromys minutus erythrotis* (Blyth, 1855) from India. Musser and Carleton (1993) consider that critical revision is required to determine whether this widespread species represents one or more species. Specimens from Asia are morphologically very distinct from European specimens (Mike Jordan, *pers. comm.*).

Genus *Millardia* Thomas, 1911
Soft-furred Rats

This genus belongs to subfamily *Murinae*. Ellerman (1961) treated *Millardia* as a subgenus under *Rattus* Fischer, 1803. But based on its unique characters it was raised to the generic level by Misonne (1969) and Agrawal (1970). Three species recognized from South Asia of which one species is endemic to India, while other two are endemic to the region.

52. *Millardia gleadowi* (Murray, 1885)
1885. *Mus gleadowi* Murray, Proc. zool. Soc. Lond., 1885: 809.
Name: Sand-coloured Metad
Type locality: Karachi, Sind, Pakistan
Synonyms: *Mus gleadowi* Murray, 1885
Subspecies: None
Distribution: Endemic to the region. Gujarat and Rajasthan in India, and Pakistan.
Comments: Possesses four plantar pads. Ellerman (1961) included this species under the genus *Rattus* Fischer, 1803.

53. *Millardia kondana* Mishra & Dhanda, 1975
1975. *Millardia kondana* Mishra & Dhanda, J. Mammal., 56: 76.

Name: Large Metad
Type locality: Sinhgarh (18^{0}23'N, 73^{0}42'E), Poona dist., Maharashtra, India
Synonyms: None
Subspecies: None
Distribution: Endemic to India. Known only from type locality.
Comments: Large-sized metad unique in possessing six plantar pads. Corbet and Hill (1992) remark that "in describing *M. kondana* the authors did not mention the presence or absence of *M. meltada* in the same or adjacent localities, although the latter has been recorded from Pune and from Dharwar where they are of normal size, much smaller than *M. kondana*". One of the survey parties of ZSI, WRS, Pune, has also collected *Millardia kondana* Mishra & Dhanda, 1975 from the type locality during a survey conducted in 1990.

54. *Millardia meltada* (Gray, 1837)
1837. *Golunda meltada* Gray, Charlesworth's Mag. nat. Hist., 1: 586.
Name: Soft-furred Metad
Type locality: Dharwar, S. Mahratta (now Karnataka), India
Synonyms: *Golunda meltada* Gray, 1837
Rattus meltada meltada (Gray, 1837)
Mus lanuginosus Elliot, 1839
Mus comberi Wroughton, 1907
Mus listoni Wroughton, 1907
Millardia meltada pallidor Ryley, 1914
Rattus meltada pallidor (Ryley, 1914)
Millardia meltada dunni Thomas, 1917
Subspecies: *Millardia meltada meltada* (Gray, 1837)
Millardia meltada singuri Mandal & Ghosh, 1981
Distribution: Endemic to the region. Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Rajasthan, Gujarat, Uttar Pradesh, Maharshtra, Madhya Pradesh, Karnataka, Tamil Nadu, Andhra Pradesh, Chattisgarh, Jharkhand, Bihar, and West Bengal in India, Pakistan, Nepal, and Sri Lanka.
Comments: Possesses five plantar pads. Ellerman (1961) included this species under the genus *Rattus* Fischer, 1803 and recognized two subspecies, namely *Rattus meltada meltada* (Gray, 1837) and *Rattus meltada pallidor* (Ryley, 1914). Corbet and Hill (1992) listed three subspecies, namely, *Millardia meltada pallidor* Ryley, 1914, *Millardia meltada dunni* Thomas, 1917and *Millardia meltada singuri* Mandal & Ghosh, 1981. Agrawal (2000) synonymized *Millardia meltada pallidor* Ryley, 1914 and *Millardia meltada singuri* Mandal & Ghosh, 1981 with the nominate subspecies. However, *Milardia meltada singuri* Mandal & Ghosh, 1981 has been retained here as a valid subspecies following Pradhan *et al.* (*Comm.*).

Genus *Mus* Linnaeus, 1758
Mice

This genus belongs to subfamily *Murinae*. One of the most complicated group of murids the world over as its classification remains unstable. Marshall's work (Marshall, 1977a,b, 1986) provides valuable clarifications regarding forms belonging to this genus in the Indo-Malayan region (Corbet & Hill, 1992). Agrawal (2000) opines that though Marshall (1977b) overcame the anomalies in the taxonomy of *platythrix*-complex of species, but the problems in taxonomy of *booduga - cervicolor* still remains unresolved. Ellerman (1961) listed only two subgenera, *Mus* Linnaeus, 1758 and *Coelomys* Thomas, 1915. However, Asian forms have been classified under three subgenera, namely *Mus* Linnaeus, 1758, *Pyromys* Thomas, 1911, and *Coelomys* Thomas, 1915 (Corbet & Hill, 1992). Eleven species are recognized from South Asia. Two species each are endemic to India and Sri Lanka.

55. *Mus booduga* (Gray, 1837)
1837. *Leggada booduga* Gray, Charlesworth's Mag. nat. Hist., 1: 586.
Name: Common/Little Indian Field Mouse
Type locality: S. Mahratta (now probably somewhere in Karnataka), India
Synonyms: *Leggada booduga* Gray, 1837
Mus lepidus Elliot, 1839
Mus terricolor Blyth, 1851
Mus albidiventris Blyth, 1852
Mus beavanii Peters, 1866
Leggada dunni Wroughton, 1912
?*Gatamyia weragami* Deraniyagala, 1965
Subspecies: None
Distribution: Jammu & Kashmir, Himachal Pradesh, Haryana, Uttaranchal, Uttar Pradesh, Madhya Pradesh, Maharashtra, Bihar, Jharkhand, Orissa, West Bengal, Karnataka, Tamil Nadu, Kerala, and parts of Rajasthan, Gujarat, Andhra Pradesh in India; Pakistan; Nepal; Sri Lanka and Bangladesh (Posamentier, 1989).
Comments: This species belongs to subgenus *Mus* Linnaeus, 1758. Ellerman (1961) provisionally lists only two subspecies, namely *Mus booduga booduga* (GRay, 1837) and *Mus booduga lepidoides* (Fry, 1931). The former including the races *'lepida', 'terricolor',* and *'dunni'*. However, chromosomal evidence presented by Sharma *et al.* (1986) supports the specific status of both *Mus booduga* (Gray, 1837) and *Mus terricolor* Blyth, 1851, including *Mus dunni* (Wroughton, 1912). Still confusion persists regarding races and overlap of characters in the representative taxon belonging to the subgenus *Mus*. Hence to avoid confusions regarding forms akin to *Mus booduga* (Gray, 1837), Agrawal (2000) synonymized *Mus dunni* (Wroughton, 1912) and *Mus terricolor* Blyth, 1851 with *Mus booduga* (Gray, 1837), a trend earlier followed by Ellerman and Morrison-Scott (1951).

56. *Mus cervicolor* Hodgson, 1845
1845. *Mus cervicolor* Hodgson, Ann. Mag. nat. Hist., (1)15: 268.
Name: Fawn-coloured Mouse
Type locality: Nepal
Synonyms: *Mus fulvidiventris* Blyth, 1852

Mus strophiatus Hodgson, 1845
? *Mus cunicularius* Blyth, 1855
Leggada nagarum imphalensis Roonwal, 1948
Subspecies: *Mus cervicolor cervicolor* Hodgson, 1845
Mus cervicolor fulvidiventris (Blyth, 1852)
Distribution: Jammu & Kashmir (Chakraborty, 1983), Uttaranchal, West Bengal, Meghalaya, Manipur, Andaman & Nicobar Islands, in India; Nepal, Pakistan (Taber *et al.,* 1967); Sri Lanka and probably Bhutan.
Comments: This species belongs to subgenus *Mus* Linnaeus, 1758. Ellerman (1961) lists seven subspecies, namely *Mus cervicolor phillipsi* (Wroughton, 1912), *Mus cervicolor fulvidiventris* (Blyth, 1852), *Mus cervicolor palnica* (Thomas, 1923) - presently a synonym of *Mus cookii* Ryley, 1914, *Mus cervicolor cervicolor* Hodgson, 1845, *Mus cervicolor nitidulus* (Blyth, 1859), *Mus cervicolor nagarum* Thomas, 1921) - presently a synonym of *Mus cookii* Ryley, 1914, and *Mus cervicolor imphalensis* (Roonwal, 1948). Corbet and Hill (1992) and Agrawal (2000) synonymized the last subspecies listed by Ellerman (1961) with the nominate *Mus cervicolor cervicolor* Hodgson, 1845.

57. *Mus cookii* Ryley, 1914
1914. *Mus cookii* Ryley, J. Bombay nat. Hist. Soc., 22: 664.
Name: Ryley's Spiny Mouse
Type locality: Gokteik, Shan States, N. Burma (now Myanmar)
Synonyms: *Mus famulus cooki* (sic) (Ryley, 1914)
Leggada nagarum Thomas, 1921
Mus cervicolor nagarum (Thomas, 1921)
Leggada palnica Thomas, 1924
Mus cervicolor palnica (Thomas, 1924)
Subspecies: *Mus cookii cookii* Ryley, 1914
Mus cookii nagarum (Thomas, 1921)
Distribution: Arunachal Pradesh, Assam, Meghalaya, Manipur, Nagaland, West Bengal, Maharashtra, Karnataka, Tamil Nadu and Kerala in India; Nepal, Bangladesh and Bhutan.
Comments: This species belongs to subgenus *Mus* Linnaeus, 1758. Ellerman and Morrison-Scott (1951), and Ellerman (1961) listed *Leggada nagarum* Thomas, 1921 and *Leggada palnica* Thomas, 1924 under *Mus cervicolor* Hodgson, 1845 as *Mus cervicolor nagarum* (Thomas, 1921) and *Mus cervicolor planica* (Thomas, 1924). They treated *Mus cookii* Ryley, 1914 as the subspecies of *Mus famulus* Bonhote, 1898, mainly because a number of characters overlap. Marshall (1977b) shifted them to *Mus cookii* Ryley, 1914. Agrawal (2000) validates only two subspecies, namely *Mus cookii cookii* Ryley, 1914 and *Mus cookii nagarum* (Thomas, 1921).

58. *Mus famulus* Bonhote, 1898
1898. *Mus famulus* Bonhote, J. Bombay nat. Hist. Soc., 12: 99.
Name: Bonhote's Mouse
Type locality: Coonoor, Nilgiri Hills, Tamil Nadu, India
Synonyms: None
Subspecies: None
Distribution: Endemic to India. Known only from two localities in the Nilgiri Hills, South India.
Comments: This species belongs to subgenus *Coelomys* Thomas, 1915. Ellerman (1961) listed three subspecies, namely *Mus famulus famulus* Bonhote, 1898, *Mus famulus cooki* (sic) (Ryley, 1914) and *Mus famulus popaeus* (Thomas, 1919). *Mus famulus cooki* (sic) (Ryley, 1914) is now considered as a separate species *Mus cookii* Ryley, 1914, and *Mus famulus popaeus* (Thomas, 1919) - earlier reported as *Leggada nitidula popaea* Thomas, 1919, has been proposed to be a subspecies of *Mus cervicolor* by Corbet and Hill (1992). Thus, presently only *Mus famulus* Bonhote, 1898 is a valid name from the region.

59. *Mus fernandoni* (Phillips, 1932)
1932. *Leggadilla fernandoni* Phillips, Spolia Zeylan., 16: 325.
Name: Ceylon Spiny Mouse
Type locality: Kubalgamuwa, Mulhalkelle Dist., Sri Lanka
Synonyms: *Leggadilla fernandoni* Phillips, 1932
Subspecies: None
Distribution: Endemic to Sri Lanka.
Comments: This species belongs to subgenus *Pyromys* Thomas, 1911. Phillips (1980) provides detailed information on this species.

60. *Mus mayori* (Thomas, 1915)
1915. *Coelomys mayori* Thomas, J. Bombay nat. Hist. Soc., 23: 3 (415).
Name: Mayor's Mouse
Type locality: Pattipola, Central Mountains, Sri Lanka
Synonyms: *Coelomys mayori* Thomas, 1915
Coelomys bicolor Thomas, 1915
Subspecies: *Mus mayori mayori* (Thomas, 1915)
Mus mayori pococki Ellerman, 1947
Distribution: Endemic to Sri Lanka.
Comments: This species belongs to subgenus *Coelomys* Thomas, 1915. Ellerman (1961) listed two subspecies, namely *Mus mayori mayori* (Thomas, 1915) and *Mus mayori pococki* Ellerman, 1947.

61. *Mus musculus* Linnaeus, 1758
1758. *Mus musculus* Linnaeus, Syst. nat. 10th ed., 1: 62.
Name: House Mouse
Type locality: Uppsala, Sweden
Synonyms: *Mus nipalensis* Hodgson, 1841 (*nom. nud.*)
Mus manei Gray, 1843
Mus bactrianus Blyth, 1846
Mus humourus Hodgson, 1845
Mus urbanus Hodgson, 1845
Mus dubius Hodgson, 1845
Mus darjilingensis Hodgson, 1849
Mus manei Kelaart, 1852
Mus gerbillinus Blyth, 1853
? *Mus theobaldi* Blyth, 1853
Mus tytleri Blyth, 1859
Mus musculus pygmaeus Biswas & Khajuria, 1955

Mus musculus khumbuensis Biswas & Khajuria, 1968

Subspecies: *Mus musculus praetextus* (Brants, 1827)
Mus musculus homourus (Hodgson, 1845)
Mus musculus castaneus (Waterhouse, 1843)

Distribution: Throughout the range in South Asia including indoors and outdoors in India, Pakistan, Nepal, Bhutan, Bangladesh, and Sri Lanka.

Comments: This species belongs to subgenus *Mus* Linnaeus, 1758. Ellerman (1961) listed six subspecies, namely *Mus musculus bactrianus* (Blyth, 1846), *Mus musculus humourus* (Hodgson, 1845), *Mus musculus castaneus* (Waterhouse, 1843), *Mus musculus urbanus* (Hodgson, 1845), *Mus musculus tytleri* (Blyth, 1859), and *Mus musculus pygmaeus* Biswas & Khajuria, 1955. Agrawal (2000) listed three subspecies, namely *Mus musculus praetextus* (Brants, 1827), *Mus musculus humourus* (Hodgson, 1845), and *Mus musculus castaneus* (Waterhouse, 1843). It is also possible that *Mus musculus domesticus* (Rutty, 1772) too may be spreading in the region through transportation. There is a potentially very confusing situation regarding *Mus domesticus* Schwarz & Schwarz, 1943 which is generally regarded as the species occupying the western part of the Palearctic range. If this species occurs in Asia presumably it is introduced. However, the subspecies *praetextus* is attributed to this species (*Mus domesticus* Schwarz & Schwarz, 1943), therefore its presence in Asia is confusing (Mike Jordan, *Pers. Comm.*)!

62. *Mus pahari* Thomas, 1916

1916. *Mus pahari* Thomas, J. Bombay nat. Hist. Soc., 24(3): 415.

Name: Sikkim Mouse

Type locality: Batasia, Sikkim, India

Synonyms: *Leggada jacksoniae* Thomas, 1921
Mus pahari jacksoniae (Thomas, 1921)

Subspecies: *Mus pahari pahari* Thomas, 1916

Distribution: Sikkim, West Bengal, Arunachal Pradesh, Assam, Nagaland, Meghalaya and Mizoram in India; and Bhutan.

Comments: This species belongs to subgenus *Coelomys* Thomas, 1915. Ellerman (1961) listed two subspecies, namely *Mus pahari pahari* Thomas, 1916 and *Mus pahari jacksoniae* (Thomas, 1921). However, Agrawal (2000) synonymized the latter with the former and validated only the nominate race.

63. *Mus phillipsi* Wroughton, 1912

1912. *Mus phillipsi* Wroughton, J. Bombay nat. Hist. Soc., 21: 772.

Name: Wroughton's Small Spiny Mouse

Type locality: Asirgarh, Nimar, C. Province (now Madhya Pradesh), India

Synonyms: *Leggadda* (sic) *surkha* Wroughton & Ryley, 1913
Leggada siva Thomas & Ryley, 1913

Subspecies: None

Distribution: Endemic to the region. Rajasthan, Gujarat, Madhya Pradesh, Chattisgarh, Maharashtra, Andhra Pradesh, Karnataka, and Tamil Nadu in India; and Nepal.

Comments: This species belongs to subgenus *Pyromys* Thomas, 1911. Ellerman (1961) treated it as a subspecies of *Mus cervicolor* Hodgson, 1845. Marshall (1977b) restored it to specific level as earlier. Abe (1977) report its occurrence in Nepal, but list it as *Mus cervicolor phillipsi* (Wroughton, 1912).

64. *Mus platythrix* Bennett, 1832

1832. *Mus platythrix* Bennett, Proc. zool. Soc. Lond., 1832: 121.

Name: Brown Spiny Mouse

Type locality: Dhukun, Peninsular India

Synonyms: *Leggada bahadur* Wroughton & Ryley, 1913
Leggada grahami Ryley, 1913
Leggada hannyngtoni Ryley, 1913

Subspecies: *Mus platythrix platythirx* Bennett, 1832

Distribution: Endemic to India, and recorded from a number of localities in Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, Madhya Pradesh, Rajasthan and West Bengal.

Comments: This species belongs to subgenus *Pyromys* Thomas, 1911. Ellerman (1961) listed six subspecies, namely *Mus platythrix platythrix* Bennett, 1832, *Mus platythrix sadhu* (Wroughton, 1911), *Mus platythrix ramnadensis* (Bentham, 1908), *Mus platythrix bahadur* (Wroughton & Ryley, 1913), *Mus platythrix gurkha* (Thomas, 1914), and *Mus platythrix shortridgei* (Thomas, 1914). However, Marshall (1977b) has rearranged *Mus platythrix c*omplex under three species namely *Mus platythrix* Bennett, 1832, *Mus saxicola* Elliot, 1839 and *Mus shortridgei* (Thomas, 1914). The last species does not occur in South Asia.

65. *Mus saxicola* Elliot, 1839

1839. *Mus saxicola* Elliot, Madras J. Litt. Sci., 10: 215.

Name: Elliot's Spiny Mouse

Type locality: Madras, India

Synonyms: *Mus spinulosus* Blyth, 1854
Mus (Leggada) ramnadensis Bentham, 1908
Mus platythrix ramnadensis (Bentham, 1908)
Leggada platythrix sadhu Wroughton, 1911
Mus platythrix sadhu (Wroughton, 1911)
Leggada cinderella Wroughton, 1912
Leggadilla gurkha Thomas, 1914
Mus platythrix gurkha (Thomas, 1914)

Subspecies: *Mus saxicola saxicola* Elliot, 1839
Mus saxicola sadhu (Wroughton, 1911)
Mus saxicola gurkha (Thomas, 1914)

Distribution: Endemic to the region. Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, Rajasthan, Gujarat, Madhya Pradesh, Himachal Pradesh, Uttaranchal, Jharkhand, and West Bengal in India; Pakistan; Nepal and Bangladesh.

Comments: This species belongs to subgenus *Pyromys* Thomas, 1911. Ellerman (1961) included the forms under *Mus platythrix* Bennett, 1832. See comments under *Mus platythrix* Bennett, 1832. Agrawal (2000) listed three subspecies, namely *Mus saxicola saxicola* Elliot, 1839, *Mus saxicola sadhu* (Wroughton, 1911), and *Mus saxicola gurkha* (Thomas, 1914).

Genus *Nesokia* Gray, 1842
Palaearctic Bandicoot-rat

This genus belongs to subfamily *Murinae*. One species recognized from South Asia.

66. *Nesokia indica* (Gray & Hardwicke, 1832)

1832. *Arvicola indica* Gray (in Hardwicke, 1830-35), Illustr. Indian Zool., 1, pl. xi.
Name: Short-tailed Bandicoot-rat
Type locality: (Uncertain), India
Synonyms: *Arvicola indica* Gray & Hardwicke, 1832
Mus hardwickei Gray, 1837
Mus huttoni Blyth, 1846
Nesokia griffithi Horsfield, 1851
? *Spalacomys indicus* Peters, 1860
Nesokia beaba Wroughton, 1908
Subspecies: *Nesokia indica indica* (Gray & Hardwicke, 1832)
Distribution: Punjab, Haryana, Delhi, Uttaranchal, Uttar Pradesh, Rajasthan, Bihar and West Bengal in India; Nepal; Bangladesh (Posamentier, 1989); and Pakistan.
Comments: Ellerman (1961) included two subspecies, namely *Nesokia indica indica* (Gray & Hardwicke, 1832), and *Nesokia indica huttoni* (Blyth, 1846). The latter form is distributed from Afghanistan and westward. Corbet and Hill (1992) opine that *Nesokia indica chitralensis* Schlitter and Setzer, 1976 could not be a discrete subspecies. Agrawal (2000) reported only the nominate subspecies from India. Musser and Carleton (1993) cite that substantial morphological variation is present among geographic samples and that careful systematic revision is required to determine whether this variation represents one or more species.

Genus *Niviventer* Marshall, 1977
White-bellied Rats

This genus belongs to subfamily *Murinae*. Ellerman (1961) included the forms representing this genus under the subgenus *Maxomys* Sody, 1936 of the genus *Rattus* Fischer 1803. Misonne (1969) included these under the Genus *Maxomys* Sody, 1936. Marshall (1977a) erected a new genus *Niviventer* to accommodate the species that differed from the true *Maxomys* Sody, 1936 species. Refer Marshall (1977a) for further details. Six species are recognized from South Asia.

67. *Niviventer brahma* (Thomas, 1914)

1914. *Epimys brahma* Thomas, J. Bombay nat. Hist. Soc., 23(2): 232.
Name: Thomas' Chestnut Rat
Type locality: Anzong Valley in Mishmi Hills, N. Assam (now Arunachal Pradesh), India
Synonyms: *Epimys brahma* Thomas, 1914
Rattus fulvescens brahma (Thomas, 1914)
Subspecies: None
Distribution: Arunachal Pradesh in India.
Comments: Ellerman & Morrison-Scott (1951), and Ellerman (1961) treated this as a subspecies under *Rattus fulvescens* (Gray, 1847), but Musser (1970) restored it to the specific level under the genus *Niviventer* Marshall, 1977 and commented that the species is represented by only a few specimens.

68. *Niviventer eha* (Wroughton, 1916)

1916. *Epimys eha* Wroughton, J. Bombay nat. Hist. Soc., 24: 428.
Name: Little Himalayan Rat
Type locality: Lachen, Sikkim, India
Synonyms: *Epimys eha* Wroughton, 1916
Rattus eha (Wroughton, 1916)
Rattus eha eha (Wroughton, 1916)
Subspecies: *Niviventer eha eha* (Wroughton, 1916)
Distribution: Sikkim and West Bengal in India; and Nepal (Abe, 1971).
Comments: Ellerman (1961) included this species under genus *Rattus* and listed two subspecies, namely *Rattus eha eha* (Wroughton, 1916) and *Rattus eha ninus* (Thomas, 1922). According to Agrawal (2000), the nominate species occurs in South Asia.

69. *Niviventer fulvescens* (Gray, 1847)

1847. *Mus fulvescens* Gray, Cat. Hodgson Coll. Br. Mus., 18.
Name: Chestnut Rat
Type locality: Nepal
Synonyms: *Mus fulvescens* Gray, 1847
Rattus fulvescens (Gray, 1847)
Mus caudatior Hodgson, 1849
Leggada jerdoni Blyth, 1863
Mus octomammis Gray, 1863
Subspecies: *Niviventer fulvescens fulvescens* (Gray, 1847)
Distribution: Himachal Pradesh, Uttaranchal, West Bengal, Sikkim, Assam, Meghalaya, Manipur and Arunachal Pradesh in India; Pakistan; Nepal; and also probably in Bhutan and Bangladesh.
Comments: Ellerman (1961) treated this under genus *Rattus (Maxomys)* Fischer, 1803, and listed two subspecies, namely *Rattus fulvescens brahma* (Thomas, 1914) and *Rattus fulvescens fulvescens* (Gray, 1847). Niethammer and Martens (1975) considered *fulvescens* as a synonym of *niviventer*. Agrawal (2000) mentioned that there are no valid subspecies under *Niviventer fulvescens* (Gray, 1847) from Indian region.

70. *Niviventer langbianis* (Robinson & Kloss, 1922)

1922. *Rattus langbianis* Robinson & Kloss, Ann. Mag. nat. Hist., (9)9: 96.
Name: Dark-tailed Rat
Type locality: Langbian Peak, S. Vietnam
Synonyms: *Rattus langbianis* Robinson & Kloss, 1922
Rattus cremoriventer langbianis (Robinson & Kloss, 1922)
Rattus indosinicus Osgood, 1932
Rattus cremoriventer indosinicus (Osgood, 1932)
Subspecies: None

Distribution: Assam in India.
Comments: Ellerman (1961) treated this under *Rattus cremoriventer* (Miller, 1900). Musser (1981) treated *Rattus langbianis* Robinson & Kloss, 1922 as a full species being distinct from *Rattus cremoriventer* (Miller, 1900) and assigned it to the genus *Niviventer* Marshall, 1977, and further, also synonymized *Rattus indosinicus* Osgood, 1932 with *Niviventer langbianis* (Robinson & Kloss, 1922). Agrawal (2000) synonymized *Rattus cremoriventer indosinicus* (Osgood, 1932) with this species and opines that there are no subspecies for this taxon.

71. *Niviventer niviventer* (Hodgson, 1836)
1836. *Mus (Rattus) niviventer* Hodgson, J. Asiatic Soc. Bengal, 5: 234.
Name: Himalayan White-bellied Rat
Type locality: Katmandu, Nepal
Synonyms: *Mus (Rattus) niviventer* Hodgson, 1836
Mus niveiventer Blanford, 1891
Epimys lepcha Wroughton, 1916
Rattus niviventer lepcha (Wroughton, 1916)
Subspecies: *Niviventer niviventer lepcha* (Wroughton, 1916)
Niviventer niviventer niviventer (Hodgson, 1836)
Distribution: Endemic to the region. Himachal Pradesh, Uttaranchal, West Bengal, Sikkim, Assam, Nagaland, Arunachal Pradesh, Meghalaya and Manipur in India; Nepal (Abe, 1977); Bhutan and probably in Pakistan.
Comments: Ellerman (1961) treated this under subgenus *Maxomys* Sody, 1936, and listed four subspecies, namely *Rattus niviventer niviventer* (Hodgson, 1836), *Rattus niviventer lepcha* (Wroughton, 1916), *Rattus niviventer bukit* (Bonhote, 1903), and *Rattus niviventer mentosus* (Thomas, 1916). Ghose (1964) proposed a subspecies *Rattus niviventer monticola* that Agrawal (2000) synonymised with *Niviventer niviventer lepcha* (Wroughton, 1916), one of the two subspecies occurring in South Asia.

72. *Niviventer tenaster* (Thomas, 1916)
1916. *Epimys tenaster* Thomas, Ann. Mag, nat. Hist., (8)17: 425.
Name: Tenasserim Long-tailed Rat
Type locality: Mt. Mulaiyit, Tenasserim, Burma (now Myanmar)
Synonyms: *Epimys tenaster* Thomas, 1916
Rattus cremoriventer tenaster (Thomas, 1916)
Subspecies: None
Distribution: Assam in India.
Comments: Ellerman (1961) treated this as a subspecies under *Rattus cremoriventer* (Miller, 1900), while Musser (1973) treated it as a form of *Rattus niviventer* (Hodgson, 1836) but later (Musser, 1981) considered it to be either a southern montane outlier of *Niviventer confucianus* (Milne-Edwards, 1872) or a distinct species. Agrawal (2000) does not list this species. Confusion about the status of this species still exists.

Genus *Rattus* Fischer, 1803
House Rats

This genus belongs to subfamily *Murinae*. Thirteen species occur in the region. Among the four endemic species in India, two are insular species. Two species of this genus are endemic to Sri Lanka.

73. *Rattus burrus* (Miller, 1902)
1902. *Mus burrus* Miller, Proc. U. S. nation. Mus., 24: 768.
Name: Miller's Nicobar Rat
Type locality: Trinkut Island, Nicobar Isles, Andaman & Nicobar Islands, India
Synonyms: *Mus burrus* Miller, 1902
Mus burrulus Miller, 1902
Mus burrescens Miller, 1902
Subspecies: None
Distribution: Endemic to India. Nicobar group of Islands, Andaman & Nicobar Islands.
Comments: Ellerman (1961) treated this species along with *Rattus burrulus* (Miller, 1902) and *Rattus burrescens* (Miller, 1902) as conspecific. Corbet and Hill (1992) synonymized all the three species under *Rattus tiomanicus* (Miller, 1900) with doubtful status, and further commented that the "inclusion of the forms on the Andaman Islands is tentative, although the three forms described from there, *burrus, burrulus* and *burrescens*, are very similar to each other and probably conspecific". Agrawal (2000) remarks this being close to *Rattus rattus* (Linnaeus, 1758) and also mentions that the recent study by Musser and Heaney (1985) shows its affinity to *Rattus tiomanicus* (Miller, 1900).

74. *Rattus exulans* (Peale, 1848)
1848. *Mus exulans* Peale, Mammalia, in Repts. U. S. Explor. Surv., 8: 47.
Name: Polynesian Rat
Type locality: Tahiti Island, Society Islands (France)
Synonyms: *Mus exulans* Peale, 1848
Mus concolor Blyth, 1859
Subspecies: None
Distribution: Bangladesh.
Comments: Ellerman (1961) included this species under subgenus *Rattus* Fischer, 1803 and mentions about the *Rattus exulans concolor* (Blyth, 1859) from Myanmar region. Corbet and Hill (1992), and Musser and Carleton (1993) include Bangladesh in its distribution range in South Asia. This species does not occur in Indian limits (Agrawal, 2000).

75. *Rattus montanus* Phillips, 1932
1932. *Rattus montanus* Phillips, Ceylon Jour. Sci, Sec. B, 16: 323.
Name: Nillu Rat
Type locality: Ohiya, West Haputale, Sri Lanka
Synonyms: None
Subspecies: None
Distribution: Endemic to Sri Lanka. Known only from type

locality.
Comments: Ellerman (1961) included this species under subgenus *Rattus* Fischer, 1803. Corbet and Hill (1992) remark that "it has been suggested that this name might be based upon a 'sample of extremely large *Rattus rattus kelaarti* males' (McKay, 1984) but the teeth are very distinctive and preclude that possibility, a conclusion supported by Musser (1986)". Phillips (1980) gives a detailed account of this species.

76. *Rattus nitidus* (Hodgson, 1845)
1845. *Mus nitidus* Hodgson, Ann. Mag. nat. Hist., (1)15: 267.
Name: Himalayan Rat
Type locality: Nepal
Synonyms: *Mus nitidus* Hodgson, 1845
Mus horeites Hodgson, 1845
Mus pyctoris Hodgson, 1845
Mus aequicaudalis Hodgson, 1849
Mus guhai Nath, 1952
Subspecies: *Rattus nitidus nitidus* (Hodgson, 1845)
Distribution: Uttaranchal, Sikkim, West Bengal, Arunachal Pradesh, Meghalaya, Tripura, Mizoram, and Manipur in India; Nepal; Bhutan; and Bangladesh.
Comments: Ellerman (1961) included this species under subgenus *Rattus* Fischer, 1803, and listed two subspecies, namely *Rattus nitidus nitidus* (Hodgson, 1845) and *Rattus nitidus obsoletus* Hinton, 1919. Corbet and Hill (1992) retained *Rattus nitidus obsoletus* Hinton, 1919, while Agrawal (2000) synonymized it with *Rattus nitidus nitidus* (Hodgson, 1845) based on overlap of characters. Marshall (1977a) synonymised *Mus guhai* Nath (1952) with this species as the description of *Mus guhai* Nath (1952) was based upon a litter of *Rattus nitidus* (Hodgson, 1845).

77. *Rattus norvegicus* (Berkenhout, 1769)
1769. *Mus norvegicus* Berkenhout, Outlines nat. Hist. Gt. Britain and Ireland, 1: 5.
Name: Norway / Brown Rat
Type locality: Great Britain
Synonyms: *Mus norvegicus* Berkenhout, 1769
Mus decumanoides Hodgson, 1814 (*nom. nud.*)
Subspecies: *Rattus norvegicus norvegicus* (Berkenhout, 1769)
Distribution: India, Pakistan and Sri Lanka
Comments: Ellerman (1961) included this species under subgenus *Rattus* Fischer, 1803. Ellerman (1961), Spillet (1968), Phillips (1980), Pradhan (1975), Corbet and Hill (1992), and Agrawal (2000) opine that this species has been introduced by human agencies through transportation, and it is restricted to large cities only. The species is ground dwelling in habit.

78. *Rattus palmarum* (Zelebor, 1869)
1869. *Mus palmarum* Zelebor, Reise der Oesterr., Fregatte Novara, Zool. Th. I, Wirbelth., 1, Saugeth., 26.
Name: Zelebor's Nicobar Rat / Palm Rat
Type locality: Car Nicobar (probably), Andaman & Nicobar Islands, India
Synonyms: *Mus palmarum* Zelebor, 1869
Subspecies: None
Distribution: Endemic to India. Nicobar Islands, Andaman and Nicobar Islands.
Comments: Corbet and Hill (1992), Musser and Carleton (1993) and Agrawal (2000) following Musser and Heaney (1985), and Musser and Newcomb (1983) remark that it is most closely related to *Rattus tiomanicus* (Miller, 1900). It is known from only very few specimens in the original series.

79. *Rattus ranjiniae* Agrawal & Ghosh, 1969
1969. *Rattus ranjiniae* Agrawal & Ghosh, Proc. zool. Soc. Calcutta, 22: 41-45.
Name: Ranjini's Field Rat
Type locality: Trivandrum, Kerala, India
Synonyms: None
Subspecies: None
Distribution: Endemic to India. Reported from Thrissur, Alleppey, and Thiruvananthapuram districts of Kerala.
Comments: Corbet and Hill (1992) opined that its inclusion as a member of subgenus *Rattus* Fischer, 1803 is open to question. This distinctive species is known from very few specimens.

80. *Rattus rattus* (Linnaeus, 1758)
1758. *Mus rattus* Linnaeus, Syst. Nat., 10th ed., 1: 61.
Name: Common House Rat
Type locality: Uppsala, Sweden
Synonyms: *Mus rattus* Linnaeus, 1758
Rattus rattus alexandrinus (Geoffroy, 1803)
Mus indicus Desmarest, 1832
Mus rufescens Gray, 1837
? *Mus asiaticus* Gray, 1837
Mus flavescens Elliot, 1839
Mus brunneus Hodgson, 1845
Mus kandianus Kelaart, 1850
Mus ceylonus Kelaart, 1850
Rattus rattus ceylonus (Kelaart, 1850)
Mus tetragonurus Kelaart, 1850
Mus arboreus Horsfield, 1851
Mus nemoralis Blyth, 1851
? *Mus crassipes* Blyth, 1859
Mus (Leggada) andamensis Blyth, 1860
Rattus rattus andamensis (Blyth, 1860)
Mus infralineatus Blyth, 1863 (*nom. nud.*)
Mus kandiyanus Kelaart, 1867 (*emend.*)
? *Mus flebilis* Miller, 1902
Rattus ? *rattus flebilis* (Miller, 1902)
? *Mus pulliventer* Miller, 1902
Mus atratus Miller, 1902
Mus atridorsum Miller, 1903
Epimys kelaarti Wroughton, 1915
Rattus rattus girensis Hinton, 1918
Subspecies: *Rattus rattus rattus* (Linnaeus, 1758)
Rattus rattus rufescens (Gray, 1837)

Rattus rattus brunneus (Hodgson, 1845)
Rattus rattus kandianus (Kelaart, 1850)
Rattus rattus arboreus (Horsfield, 1851)
Rattus rattus kelaarti (Wroughton, 1915)
Rattus rattus tistae Hinton, 1918
Rattus rattus bhotia (Hinton, 1918)
Rattus rattus narbadae Hinton, 1918
Rattus rattus satarae Hinton, 1918
Rattus rattus wroughtoni Hinton, 1919
Rattus rattus gangutrianus Hinton, 1919
Rattus rattus khyensis Hinton, 1919
Rattus rattus tikos Hinton, 1919
Rattus rattus bullocki Roonwal, 1948

Distribution: India, Pakistan, Nepal, Bhutan, Bangladesh, and Sri Lanka.

Comments: Ellerman (1961) included 22 subspecies under this species. Out of these *Rattus rattus alexandrinus* (Geoffroy, 1803)*; Rattus rattus ceylonus* (Kelaart, 1850)*;* and *Rattus rattus andamensis* (Blyth, 1860) have been synonymized under *Rattus rattus* (Linnaeus, 1758) by Corbet and Hill (1992). In all 15 above mentioned subspecies have been retained by Corbet and Hill (1992) on the basis of extremely generalised trend of variations and superficial sampling of the main collection. Further, Corbet and Hill (1992) doubtfully synonymized *Rattus rattus macmillani* Hinton, 1914 with *Rattus remotus* (Robinson & Kloss, 1914). *Rattus rattus rattus* (Linnaeus, 1758) [Corbet and Hill (1992) do not include this name], an European Black Rat, is a valid subspecies and has been introduced in the port cities like Mumbai, Kolkata etc. through transportation by human agencies (Pradhan and Hemkar, 1986); *Rattus rattus bullocki* Roonwal, 1948 has been retained as a subspecies by Corbet and Hill (1992), while *Rattus rattus khumbuensis* Biswas & Khajuria, 1955 has been treated as *Rattus turkestanicus khumbuensis* (Biswas & Khajuria, 1955) by Agrawal, (2000). Phillips (1980) listed five subspecies of *Rattus rattus* (Linnaeus, 1758) from Sri Lanka, of which *Rattus rattus rattus* Linnaeus, 1758)*, Rattus rattus rufescens* (Gray, 1837)*,* and *Rattus rattus kelaarti* (Wroughton, 1915) are currently considered as valid subspecies, while *Rattus rattus alexandrinus* (Geofroy, 1803) has been synonymized by Corbet and Hill (1992). Furthermore, Corbet and Hill (1992), include a few other subspecies names from the region, like, *Rattus rattus girensis* Hinton, 1918 [we synonymized this with *Rattus rattus* (Linnaeus, 1758) following Ellerman & Morrison-Scott (1951)]; and ?*Rattus rattus holchu* Chaturvedi, 1966. The status of the latter subspecies needs confirmation. Corbet and Hill (1992) has been followed in this particular species while listing the above mentioned subspecies of *Rattus rattus* (Linnaeus, 1758)*,* since Agrawal, (2000) has not dealt with *Rattus rattus* (Linnaeus, 1758) at subspecies level. But, Musser and Carleton (1993), and Mike Jordan (*pers. comm.*) opine that the subspecies *wroughtoni, tistae, bhotia, bullocki, khyensis* and *tickos,* which all belong to the 2n=42 chromosome group of *Rattus rattus* (Linnaeus, 1758) are subspecies of *Rattus tanezumi* (Temminck, 1844) [also see comments under *Rattus tanezumi* (Temminck, 1844)]. However, Raman and Sharma (1977) have reported chromosome number 2n=38 or 42 in *Rattus rattus* (Linnaeus, 1758) too (Agrawal, 2000). Remarking on the subspecies variation under *Rattus rattus* (Linnaeus, 1758)*,* Agrawal (2000) opined that "it is not possible, at present, to correctly classify all the subspecies of *Rattus rattus,* due to lack of sufficient fresh specimen for study, of all the described subspecies from India and adjoining countries". Therefore, it is clear that to understand subspecies variation of *Rattus rattus* (Linnaeus, 1758) needs thorough revisionary studies based on karyological, biochem-taxonomical, morphological, osteological, genetic relationship, geographical distribution, is needed.

81. *Rattus sikkimensis* Hinton, 1919

1919. *Rattus rattus sikkimensis* Hinton, J. Bombay nat. Hist. Soc., 26: 394.

Name: Sikkim Rat

Type locality: Pashok, Sikkim, India

Synonyms: *Mus brunneusculus* Hodgson, 1845
Rattus rattus brunneusculus (Hodgson, 1845)
Rattus rattus sikkimensis Hinton, 1919

Subspecies: None

Distribution: Sikkim, West Bengal, Meghalaya, Nagaland, Arunachal Pradesh and Manipur in India; and Nepal (Musser and Heaney, 1985).

Comments: Ellerman (1961) synonymized *Rattus rattus sikkimensis* Hinton, 1919 with *Rattus rattus brunneusculus* (Hodgson, 1845). Musser and Heaney (1985) suggested that *Rattus remotus* (Robinson & Kloss, 1914) is 'really an insular population of *Rattus sikkimensis*'. However, Corbet and Hill (1992) synonymized *Rattus rattus sikkimensis* Hinton, 1919 with *Rattus remotus* (Robinson & Kloss, 1914) based on the argument that latter name is prior to the former. However, Musser and Carleton (1993), and Agrawal (2000) treat it as a distinct species.

82. *Rattus stoicus* (Miller, 1902)

1902. *Mus stoicus* Miller, Proc. U. S. nation. Mus., 24: 759.

Name: Andaman Rat / Miller's Long-footed Rat

Type locality: Henry Lawrence Island, Andaman Isles, Andaman & Nicobar Islands, India

Synonyms: *Mus stoicus* Miller, 1902
Mus taciturnus Miller, 1902
Mus rogersi Thomas, 1907
Rattus rogersi (Thomas, 1907)

Subspecies: None

Distribution: Endemic to India. Andaman Islands, Andaman and Nicobar Islands.

Comments: Ellerman (1961) opined that it "possibly represents *Rattus palmarum*; possibly a member of *sabanus* group, or perhaps a representative of *mulleri* group". Musser and Heaney (1985) redescribed this species. Corbet and Hill (1992), and Agrawal (2000) consider it as a distinct species.

83. *Rattus tanezumi* (Temminck, 1844)

1844. *Mus tanezumi* Temminck, In Seibold, Temminck, & Schlegel, Fauna Japonica, Arnz et Socii, Lugduni Batavorum, 51, pl. 15, figs. 5-7.

Name: Tanezumi Rat

Type locality: Probably near Nagasaki on Kyushu Island, Japan

Synonyms: *Mus tanezumi* Temminck, 1844

Subspecies: None

Distribution: According to Musser and Carleton (1993), Pakistan; North India; Nepal; probably Bhutan; Andaman Isles., some of the Nicobar Isls. and also S.W. peninsular India.

Comments: Musser and Carleton (1993) opine that this species varies from *Rattus rattus* (Linnaeus, 1758) (2N=38/40) by chromosomal (2N=42), morphological and biochemical traits. The indigenous range of this species is generally north Pakistan to northeast India in South Asia (Musser & Carleton, 1993). Six of the subspecies attributed to *Rattus rattus* (Linnaeus, 1758) (*sensu stricto*) would be attributable to this species [see comments under *Rattus rattus* (Linnaeus, 1758)] including the one southern subspecies '*wroughtoni*' (2N=42) having this chromosomal character. Thus, they may all possibly belong to *Rattus tanezumi* (Temminck, 1844), rather than to *Rattus rattus* (Linnaeus, 1758) as accepted. If this is accepted, then *Rattus rattus wroughtoni* Hinton, 1919 will become *Rattus tanezumi wroughtoni* (Hinton, 1919) so as the rest of the subspecies with 2N=42 (Mike Jordan, *pers. comm.*). However, Raman and Sharma (1977) have reported chromosome number 2n=38 or 42 in *Rattus rattus* (Linnaeus, 1758) too (Agrawal, 2000). Moreover, Corbet and Hill (1992), and Agrawal (2000) do not mention anything about this species. Therefore, a *status quo* has been retained in this particular case.

84. *Rattus turkestanicus* (Satunin, 1903)

1903. *Mus turkestanicus* Satunin, Ann. Mus. Zool. Acad. Imp. Sci., St. Petersburg, 7: 588.

Name: Turkestan Rat

Type locality: Arslanbob, Oshkaya, Kirghizia

Synonyms: *Mus turkestanicus* Satunin, 1903
Mus rattoides Hodgson, 1845
? *Mus pyctoris* Hodgson, 1845
Epimys rattus shigarus Miller, 1913
Rattus rattus shigarus (Miller, 1913)

Subspecies: *Rattus turkestanicus turkestanicus* (Satunin, 1903)
Rattus turkestanicus khumbuensis Biswas & Khajuria, 1955
Rattus turkestanicus gilgitianus Akhtar, 1959

Distribution: Jammu & Kashmir, Himachal Pradesh, Uttaranchal, West Bengal, Sikkim in India (Agrawal, 2000); Nepal (Abe, 1971); Pakistan; Bhutan and Bangladesh

Comments: Ellerman (1961) included this species under *Rattus rattoides* (Hodgson, 1845) and listed *Rattus rattoides rattoides* (Hodgson, 1845) and *Rattus rattoides turkestanicus* (Satunin, 1903). The name *Rattus rattoides* (Hodgson, 1845) [earlier *Mus rattoides* Hodgson, 1845] was found to be preoccupied by *Mus rattoides* Pictet & Pictet, 1844 from Brazil, hence Schlitter and Thonglongya (1971) replaced it with the next available name *Mus turkestanicus* Satunin 1903 [later *Rattus turkestanicus* (Satunin, 1903)]. Corbet and Hill (1992) synonymized *Rattus rattus khumbuensis* Biswas & Khajuria 1955 with *Rattus turkestanicus* (Satunin, 1903). Agrawal (2000) dealt in detail about the existing overlaps of published information regarding forms of this species reported from Nepal, and opined that to accommodate Nepal specimens earlier named *Rattus rattoides rattoides* (Hodgson, 1845) be replaced by the name *Rattus turkestanicus khumbuensis* Biswas & Khajuria, 1955. Roberts (1997) has made a reference of a distinct subspecies, *Rattus turkestanicus gilgitianus* Akhtar, 1955 occurring in Gilgit (Pakistan). This species may include two or more taxa and requires revision. Musser and Carleton (1993) point out that the oldest name for the complex is *pyctoris* (Hodgson, 1845); incorrectly listed as a synonym of *Rattus nitidus* (Hodgson, 1845) by Ellerman, 1961 and would replace *turkestanicus* if all samples represent a single species, or would identify the Nepal and Sikkim populations if not conspecific.

85. *Rattus vicerex* (Bonhote, 1903)

1903. *Mus vicerex* Bonhote, Ann. Mag. nat. Hist., 11: 473.

Name: Short-tailed Turkestan Rat

Type locality: Shimla, North India

Synonyms: *Mus vicerex* Bonhote, 1903

Subspecies: None

Distribution: Endemic to the region. Jammu & Kashmir, Himachal Pradesh in India; and Pakistan.

Comments: Ellerman (1961) synonymized *Mus vicerex* Bonhote, 1903 with *Rattus rattoides turkestanicus* (Satunin, 1903), a trend also followed by Corbet and Hill (1992), and Musser and Carleton (1993). However, Chakraborty (1983) restored *Rattus vicerex* (Bonhote, 1903) on the basis of tail characters, and later Agrawal (2000) maintained the same stand and treated it as full species. See Agrawal (2000) for further details.

Genus *Srilankamys* Musser, 1981

This genus belongs to subfamily *Murinae*. Musser (1981) erected this genus *Srilankamys* to accommodate *Rattus ohiensis* Phillips, 1929 - an unique Sri Lankan endemic Rat that was in past been assigned to different subgenera by different authors.

86. *Srilankamys ohiensis* (Phillips, 1929)

1929. *Rattus ohiensis* Phillips, Ceylon. J. Sci., Sec. B, 15: 167.

Name: Ohiya Rat

Type locality: West Haputale, Ohiya, Sri Lanka

Synonyms: *Rattus ohiensis* Phillips, 1929

Subspecies: None

Distribution: Endemic to Sri Lanka.

Comments: Ellerman (1961) listed it as *Rattus ohiensis* Phillips, 1929. Corbet and Hill (1992) remark that this species was included

with considerable reservations, in *Rattus (Apomys)* by Ellerman (1949), in *Rattus (Lenothrix)* by Ellerman (1961), and in *Rattus* (*Leopoldamys*) by Misonne (1969). Subsequently, Musser (1981) erected the genus *Srilankamys* to accommodate this very distinctive species.

Genus *Vandeleuria* Gray, 1842
Long-tailed Tree Mice

This genus belongs to subfamily *Murinae*. Ellerman (1961) listed one species, namely *Vandeleuria oleracea* (Bennett, 1832) including seven subspecies. This genus differs from others in not possessing claws on the fifth finger and toe (Agarwal & Chakraborty, 1980). Two species are recognized from South Asia, of which one is endemic to Sri Lanka.

87. *Vandeleuria nolthenii* (Phillips, 1929)

1929. *Vandeleuria nilagirica nolthenii* Phillips, Ceylon J. Sci., Sec. B, 15: 165.
Name: Ceylon Highland Tree Mouse
Type locality: West Haputale, Ohiya, Sri Lanka
Synonyms: *Vandeleuria nilagirica nolthenii* Phillips, 1929
Vandeleuria oleracea nolthenii (Phillips, 1929)
Subspecies: None
Distribution: Endemic to Sri Lanka.
Comments: Ellerman (1961) and Agrawal and Chakraborty (1980) included this form under *Vandeleuria oleracea* (Bennett, 1832). Corbet and Hill (1992) quoting Musser (1979) treated it as a species by itself separate from *Vandeluria oleracea* (Bennett, 1832), a trend also accepted by Musser and Carleton (1993) by virtue of its distinct montane distribution, pelage colouration, external and cranial traits.

88. *Vandeleuria oleracea* (Bennett, 1832)

1832. *Mus oleraceus* Bennett, Proc. Zool. Soc. London, 1832: 121.
Name: Indian Long-tailed Tree Mouse
Type locality: Deccan, India
Synonyms: *Mus oleraceus* Bennett, 1832
Mus dumeticola Hodgson, 1845
Mus povensis Hodgson, 1845
Mus nilagiricus Jerdon, 1867
Vandeleuria wroughtoni Ryley, 1914
Vandeleuria oleracea spadicea Ryley, 1914
Vandeleuria rubida Thomas, 1914
Vandeleuria oleracea rubida Thomas, 1914
Vandeleuria oleracea modesta Thomas, 1914
Vandeleuria oleracea marica Thomas, 1914
Subspecies: *Vandeleuria oleracea oleracea* (Bennett, 1832)
Vandeleuria oleracea dumeticola (Hodgson, 1845)
Distribution: Punjab, Haryana, Rajasthan, Uttaranchal, Himachal Pradesh, Jharkhand, West Bengal, Orissa, Assam, Meghalaya, Nagaland, Mizoram, Manipur, Arunachal Pradesh, Gujarat, Madhya Pradesh, Chattisgarh, Andhra Pradesh, Maharashtra, Karnataka, and Tamil Nadu in India; Nepal, Bhutan, Bangladesh, and Sri Lanka.
Comments: As mentioned above Ellerman (1961) listed seven subspecies. Corbet and Hill (1992) list three probable subspecies, namely *Vandeleuria oleracea spadicea* Ryley, 1914, *Vandeleuria oleracea modesta* Thomas, 1914 and *Vandeleuria oleracea marica* Thomas, 1914 from this region. The last subspecies was synonymized earlier by Ellerman (1961) to *Vandeluria oleracea dumeticola* (Hodgson, 1845). Recently, Agrawal (2000), while synonymizing most of the earlier mentioned subspecies, retained only two valid subspecies, namely *Vandeluria oleracea oleracea* (Bennett, 1832) and *Vandeleuria oleracea dumeticola* (Hodgson, 1845) from the region.

Subfamily: *Platacanthomyinae*
Genus *Platacanthomys* Blyth, 1859
Spiny Dormouse

This genus belongs to the subfamily *Platacanthomyinae*. Ellerman (1961) and Agrawal (2000) opine that this genus is monotypic and endemic to India.

89. *Platacanthomys lasiurus* Blyth, 1859

1859. *Platacanthomys lasiurus* Blyth, J. Asiat. Soc. Beng., 28: 289.
Name: Malabar Spiny Dormouse
Type locality: Alipi (now Allepey), Malabar (now Kerala), southern India
Synonyms: None
Subspecies: None
Distribution: Endemic to India. Kerala, Karnataka and Tamil Nadu in India.
Comments: Ellerman (1961), Corbet and Hill (1992), and Agrawal (2000) have not offered any comment on the taxonomic status of this species.

Subfamily: *Rhizomyinae*
Genus *Cannomys* Blyth, 1859
Bamboo Rat

This genus belongs to the subfamily *Rhizomyinae* that includes two genera in the region. Ellerman (1961), Corbet and Hill (1992), and Agrawal (2000) opine that this genus is monotypic.

90. *Cannomys badius* (Hodgson, 1841)

1841. *Rhizomys badius* Hodgson, Calcutta J. nat. Hist., 2: 60.
Name: Bay Bamboo Rat
Type locality: Nepal.
Synonyms: *Rhizomys badius* Hodgson, 1841
Subspecies: None
Distribution: West Bengal, Assam, Meghalaya, Manipur, Nagaland, Mizoram in India; Nepal and probably also in Bhutan and Bangladesh
Comments: Ellerman (1961) listed three subspecies, namely *Cannomys badius badius* (Hodgson, 1841), *Cannomys badius*

castaneus (Blyth, 1843), and *Cannomys badius pater* (Thomas, 1911). Corbet and Hill (1992) also list *Cannomys badius plumbescens* (Thomas, 1915), a subspecies that was earlier synonymized to *Cannomys badius castaneus* (Blyth, 1843) by Ellerman (1961). Agrawal (2000) synonymized all the three subspecies, namely *Cannomys badius castaneus* (Blyth, 1843), *Cannomys badius plumbescens* (Thomas, 1915) and *Cannomys badius pater* (Thomas, 1911) with the nominate subspecies *Cannomys badius badius* (Hodgson, 1841).

Genus *Rhizomys* Blyth, 1859
Bamboo Rat

This genus belongs to the subfamily *Rhizomyinae* and is represented by a one species in the region (Ellerman, 1961; Corbet & Hill, 1992; Agrawal, 2000). Ellerman (1961) listed it under the subgenus *Rhizomys* Gray, 1831.

91. *Rhizomys pruinosus* Blyth, 1851

1851. *Rhizomys pruinosus* Blyth, J. Asiat. Soc. Bengal, 20: 519.
Name: Hoary Bamboo Rat
Type locality: Cherrapunji, Khasi Hills, Meghalaya, India
Synonyms: None for the region
Subspecies: None
Distribution: Meghalaya, Nagaland, and Manipur in India.
Comments: Ellerman (1961), Corbet and Hill (1992), and Agrawal (2000) do not offer any comment on the taxonomic status of this species.

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