

CHECKLIST OF SCIURIDS (MAMMALIA: RODENTIA: SCIURIDAE) OF SOUTH ASIA

C. Srinivasulu¹, S. Chakraborty² and M.S. Pradhan³

¹ *Wildlife Biology Section, Department of Zoology, Osmania University, Hyderabad, Andhra Pradesh 500007, India.*

² *Zoological Survey of India, 'M' Block, New Alipore, Kolkata, West Bengal 700053, India.*

³ *Western Regional Station, Zoological Survey of India, Vidyanagar, Sector 29, Rawat Road, PCNTDA Post, Pune, Maharashtra 411044, India.
Email: ¹ hyd2_masawa@sancharnet.in; ² anindita3000@yahoo.co.in; ³ zsipune@mah.nic.in*

Abstract

A checklist of 28 species of sciurids belonging to 12 genera in two subfamilies known to occur in South Asia including India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka is provided.

Keywords

Checklist, Sciuridae, Rodentia, Mammalia, synonyms, distribution, South Asia

Introduction

Ellerman (1940), and Ellerman (1961), with descriptive accounts of 260 subspecies under 128 species belonging to 46 genera of rodents from India, her immediate neighbours and Afghanistan, still remain the most comprehensive taxonomic works on rodents of the Indian subcontinent. Earlier, Blyth (1863), Gray (1867), Jerdon, (1874), Sterndale (1884), Blanford (1891), Wroughton (1905, 1916), Thomas (1908), Robinson and Kloss (1918), Phillips (1980) and others provided accounts of sciurids of South Asia. Due to numerous taxonomic advances in the last few decades, many taxonomic alterations and extension of geographical range pertaining to sciurids of South Asia has been witnessed (Ellerman & Morrison-Scott, 1951; Moore & Tate, 1965; Saha, 1977; Agrawal & Chakraborty, 1979; Corbet & Hill, 1980, 1986, 1991, 1992; Chakraborty, 1985; Hoffmann *et al.*, 1993). Recent checklists on Indian mammals (Nameer, 1998; Alfred *et al.*, 2002) do not include all the South Asian taxa. Keeping this in view and the upcoming Conservation Assessment and Management Plan (CAMP) workshop for non-volant mammals of South Asia, we present an updated checklist on sciurids of South Asia, with information on their synonyms, subspecies and broad distribution.

Methods

This work relies heavily on Corbet and Hill (1992), Hoffmann *et*

al. (1993) and a list prepared by Dr. Mike Jordan. Major works by Pocock (1923), Ellerman (1940, 1947a,b, 1961), Ellerman and Morrison-Scott (1951, 1953); Agrawal and Chakraborty (1979), Phillips (1980), Corbet and Hill (1991, 1992), Hoffmann *et al.* (1993), Roberts (1997) and Nowak (1999) have been reviewed to gain insights on the current taxonomic status and distribution of sciurids occurring in the region. Besides these, we also referred to numerous sources for information including Selater (1891), Bonhote (1901a,b,c), Robinson and Wroughton (1911), Thomas (1915), Zahn (1942), Abdulali and Daniel (1952), Moore (1956, 1958a,b, 1959, 1960), Prasad (1957), McKenna (1962), Gromov *et al.* (1965), Moore and Tate (1965), Kurup (1968), Agrawal and Chakraborty (1970), Chakraborty (1975, 1981, 1985), Chakraborty and Agrawal (1977), Saha (1977, 1980), Corbet (1978), Agrawal and Bhattacharyya (1979), Mitchell (1979), Ghose and Saha (1981), Tehsin (1981), Emry and Thorington (1982), Heaney (1985), Aswathanarayana (1987), Raman *et al.* (1995), Pasha and Suhail (1997), Nameer (1998), and, Alfred *et al.* (2002).

Deriving information from the above sources, we have listed the species of sciurids known to occur in South Asia including Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka. Species of sciurids from Maldiv Islands are not listed as we do not have any published information on the same. For India, an attempt has been made to provide detailed state-wise distribution, while for others only the names of the regions, wherever applicable, has been mentioned. This list is based on the best of the present knowledge on sciurid diversity of the region to date.

Other details on valid names, synonymy and distribution are as per Srinivasulu and Pradhan (2003).

Results

A total of 28 species of sciurids belonging to 12 genera of two subfamilies are recorded from South Asia. Sixteen species

Table 1. Species diversity of Family Sciuridae in South Asia

Scientific name	No. of species	Remarks
Sciurinae		
<i>Callosciurus</i>	2	
<i>Dremomys</i>	3	
<i>Funambulus</i>	5	2 regional endemics 1 Indian endemic 1 Sri Lankan endemic
<i>Marmota</i>	2	
<i>Ratufa</i>	3	1 regional endemic 1 Indian endemic
<i>Tamiops</i>	1	
Pteromyinae		
<i>Belomys</i>	1	
<i>Biswamoyopterus</i>	1	Indian endemic
<i>Eupetaurus</i>	1	
<i>Hylopetes</i>	3	1 regional endemic
<i>Petaurista</i>	5	1 regional endemic
<i>Petinomys</i>	1	Regional endemic

belong to subfamily Sciurinae Hemprich, 1820, and 12 species to subfamily Pteromyinae Brandt, 1855 (Table 1).

Of this diversity, 10 species (36%) are endemic to South Asia with three species endemic to India and one species endemic to Sri Lanka.

Corbet and Hill (1992) included all the known squirrels under two families namely, Sciuridae Gray, 1821 including non-flying squirrels (with subfamilies Ratufinae Moore, 1959; Funambulinae Pocock, 1923, Callosciurinae Moore, 1959; and Marmotinae Pocock, 1923) and Pteromyidae Brandt, 1855 including flying squirrels. Hoffmann *et al.* (1993) included all the known taxon of squirrels in one family Sciuridae Hemprich, 1820, which contains two subfamilies, namely, Sciurinae Hemprich, 1820 and Pteromyinae Brandt, 1855. The former subfamily includes all the non-flying squirrels and the latter the flying ones. We follow Hoffmann *et al.* (1993) in this review.

Family: Sciuridae Hemprich, 1820
Subfamily: Sciurinae Hemprich, 1820
Genus *Callosciurus* Gray, 1867
Beautiful Squirrels

Corbet and Hill (1992) treated this genus under subfamily Callosciurinae Moore, 1959. This genus is restricted to Oriental region from the Himalaya to Southeast Asia. It is represented

by two species in the region.

1. *Callosciurus pygerythrus* (I. Geoffroy Saint-Hilaire, 1831)

1831. *Sciurus pygerythrus* I. Geoffroy Saint-Hilaire, In: Belanger Voy. Inde Orient. Zool., 145. Mag. Zool. Paris, p.5. Pl. 4-6.

Name: Irrawady Squirrel, Hoary-bellied Squirrel

Type locality: Syriam, near Pegu, Burma (now Myanmar)

Synonyms: *Sciurus pygerythrus* I. Geoffroy Saint-Hilaire, 1831
Sciurus lokroides Hodgson, 1836
Sciurus assamensis Gray ex M'Clelland, 1843 (*nom. nud.*)

Macroxus similis Gray, 1867

Sciurus blythi Tytler, 1845

Sciurus stevensi Thomas, 1908

Subspecies: *Callosciurus pygerythrus lokroides* (Hodgson, 1836)

Callosciurus pygerythrus blythi (Tytler, 1854)

Callosciurus pygerythrus stevensi (Thomas, 1908)

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

Comments: Ellerman (1961) included seven subspecies and Chakraborty (1985) lists six subspecies under this taxon. For South Asia only three subspecies are valid (Corbet & Hill, 1992).

2. *Callosciurus erythraeus* (Pallas, 1799)

1799. *Sciurus erythraeus* Pallas, Nova. Spec. Quad. Glir. Ord., 377.

Name: Pallas' Squirrel, Red-bellied Squirrel

Type locality: Garo Hills, Assam (now in Meghalaya), India

Synonyms: *Sciurus erythraeus* Pallas, 1799
Sciurus erythrogaster Blyth, 1842

Sciurus caniceps Gray, 1842

Callosciurus caniceps (Gray, 1842)

Macroxus punctatissimus Gray, 1867

Sciurus gordonii var. *intermedia* Anderson, 1879

Callosciurus erythraeus bhutanensis Bonhote, 1901

Callosciurus erythraeus nagarum Thomas, 1916

Callosciurus crumpi Wroughton, 1916

Callosciurus erythraeus wellsii Wroughton, 1921

Callosciurus castaneoventis aquilo

Wroughton, 1921

Subspecies: *Callosciurus erythraeus erythraeus* (Pallas, 1779)

Callosciurus erythraeus erythrogaster (Blyth, 1842)

Callosciurus erythraeus intermedia

(Anderson, 1879)

Distribution: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura in India; Bangladesh; Bhutan.

Comments: Ellerman (1961) included nine subspecies that also included forms from Myanmar. Chakraborty (1985) reviewed genus *Callosciurus* Gray, 1867 in detail. Ellerman and Morrison-Scott (1951), and Ellerman (1961) included *Callosciurus crumpi* Wroughton, 1916 under *Callosciurus caniceps* (Gray, 1842) that later on the basis of its intergradation was synonymized

with *Callosciurus erythraeus* (Pallas, 1779) by Corbet and Hill (1992). Corbet and Hill (1992) includes in detail all probable and possible names of this species and indicates that forms from Bhutan and northeastern India belong to *Callosciurus erythraeus erythraeus* (Pallas, 1779).

Genus *Dremomys* Heude, 1898

Plain Long-nosed Squirrel

This genus is restricted to Oriental region from the Himalaya to South East Asia. It is represented by three species in the region.

3. *Dremomys lokriah* (Hodgson, 1836)

1836. *Sciurus lokriah* Hodgson, J. Asiatic Soc. Bengal, 5: 232.

Name: Orange-bellied Himalayan Squirrel

Type locality: North and Central regions of Nepal

Synonyms: *Sciurus lokriah* Hodgson, 1836

Sciurus subflaviventris Gray, 1843

Dremomys lokriah subflaviventris (Gray, 1843)

Sciurus locriah Blanford, 1891

Dremomys lokriah bhotia Wroughton, 1916

Dremomys macmillani Thomas, 1916

Dremomys lokriah garonum Thomas, 1922

Subspecies: *Dremomys lokriah lokriah* (Hodgson, 1836)

Dremomys lokriah macmillani Thomas, 1916

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

Comments: Ellerman and Morrison-Scott (1951) recognised two subspecies, namely *Dremomys lokriah lokriah* (Hodgson, 1836) and *Dremomys lokriah macmillani* Thomas, 1916, while Ellerman (1961) added *Dremomys lokriah pagus* Moore, 1956 to the list. The last subspecies does not occur in South Asian region. Moore and Tate (1965) recognised along with the three listed above *Dremomys lokriah garonum* Thomas, 1922 too. Corbet and Hill (1992) comment in detail on the intergradation of all these races and indicate that only *Dremomys lokriah lokriah* (Hodgson, 1836) and *Dremomys lokriah macmillani* (Thomas, 1916) are distinct enough to be considered as valid subspecies following Agrawal and Chakraborty (1979).

4. *Dremomys pernyi* (Milne-Edwards, 1867)

1867. *Sciurus pernyi* Milne-Edwards, Rev. Mag. Zool. (Paris) ser. 2, 19: 230, pl. 19.

Name: Perny's Long-nosed Squirrel

Type locality: Moupin, Sichuan, China

Synonyms: *Sciurus pernyi* Milne-Edwards, 1867

Subspecies: *Dremomys pernyi pernyi* (Milne-Edwards, 1867)

Distribution: Arunachal Pradesh, Assam, Manipur and Nagaland in India.

Comments: Ellerman (1961) maintained two subspecies, namely *Dremomys pernyi pernyi* (Milne-Edwards, 1867) and *Dremomys pernyi imus* Thomas, 1922, which does not occur in South Asia. Corbet and Hill (1992) listed numerous subspecies names of which only *Dremomys pernyi howelli* Thomas, 1922

reported from Assam as valid for the region. But following Ellerman (1961) who treated it as synonym of the nominate race, we do not list it as distinct subspecies.

5. *Dremomys rufigenis* (Blanford, 1878)

1878. *Sciurus rufigenis* Blanford, J. Asiatic Soc. Bengal, 47(2): 156.

Name: Red-cheeked Squirrel

Type locality: Mt. Mulaiyit, Tenasserim, S. Burma (Myanmar)

Synonyms: *Sciurus rufigenis* Blanford, 1878

Subspecies: *Dremomys rufigenis rufigenis* (Blanford, 1878)

Distribution: Arunachal Pradesh and Nagaland in India.

Comments: Ellerman (1961) included two subspecies, namely *Dremomys rufigenis rufigenis* (Blanford, 1878) and *Dremomys rufigenis adamsoni* Thomas, 1914, which does not occur in South Asia.

Genus *Funambulus* Lesson, 1835

Striped Squirrels

This genus is more or less restricted to South Asia, with an exception of a species that extends in range up to Iran. The genus *Funambulus* Lesson, 1835 was treated by Corbet and Hill (1992) under the subfamily Funambulinae Pocock, 1923 in Family Sciuridae Gray, 1821 following Prasad (1957). This genus is represented by five species in the region (Ellerman, 1961; Corbet & Hill, 1992) in two subgenera – *Funambulus* Lesson, 1835 and *Prasadsciurus* Moore and Tate, 1965. Two species are endemic to South Asia, and one each are endemic to India and Sri Lanka.

6. *Funambulus layardi* (Blyth, 1849)

1849. *Sciurus layardi* Blyth, J. Asiatic Soc. Bengal, 18: 602.

Name: Layard's Striped Squirrel

Type locality: Ambigamoa Hills, Central Province, Sri Lanka

Synonyms: *Sciurus layardi* Blyth, 1849

Funambulus layardi dravidianus Robinson, 1917

Tamoides layardi layardi Phillips, 1935

Tamoides layardi signatus Phillips, 1935

Subspecies: *Funambulus layardi layardi* (Blyth, 1849)

Funambulus layardi signatus Thomas, 1924

Distribution: Endemic to Sri Lanka.

Comments: Belongs to subgenus *Funambulus* Lesson, 1835. Ellerman (1961) opined that *Funambulus layardi signatus* Thomas, 1924 could not be regarded as a race due to paucity of specimens, while *Funambulus layardi dravidianus* Robinson, 1917 should not be treated as a distinct race as it was described only from a juvenile specimen. Phillips (1981) retained two subspecies from Sri Lanka.

7. *Funambulus palmarum* (Linnaeus, 1766)

1766. *Sciurus palmarum* Linnaeus, Syst. Nat. 12th ed., 1: 86.

Name: Indian Palm Squirrel, Three-striped Palm Squirrel, Common Palm Squirrel.

Type locality: Madras, India

Synonyms: *Sciurus palmarum* Linnaeus, 1766
Sciurus pencillatus Leach, 1814
Sciurus indicus Lesson, 1835
Sciurus brodei Blyth, 1849
Funambulus palmarum brodei (Blyth, 1849)
Sciurus kelaarti Layard, 1851
Funambulus palmarum comorinus Wroughton, 1905
Funambulus palmarum favonicus Thomas & Wroughton, 1915
Funambulus palmarum olympius Thomas & Wroughton, 1915
Funambulus bengalensis Wroughton, 1916
Funambulus robertsoni Wroughton, 1916
Funambulus palmarum robertsoni (Wroughton, 1916)
Funambulus gossei Wroughton & Davidson, 1919

Subspecies: *Funambulus palmarum palmarum* (Linnaeus, 1766)
Funambulus palmarum matugamensis Lindsay, 1926
Funambulus palmarum bellaricus Wroughton, 1916
Funambulus palmarum kelaarti (Layard, 1851)

Distribution: Endemic to South Asia. Andhra Pradesh, Chattisgarh, Jharkhand, Karnataka, Kerala, Maharashtra, Orissa, Tamil Nadu and West Bengal in India; Sri Lanka

Comments: Belongs to subgenus *Funambulus* Lesson, 1835. Ellerman (1961) listed six subspecies of *Funambulus palmarum* from the region – *Funambulus palmarum kelaarti* (Layard, 1851) (including ‘*olympius*’ and ‘*favonicus*’), *Funambulus palmarum brodei* (Blyth, 1849), *Funambulus palmarum robertsoni* (Wroughton, 1916), *Funambulus palmarum matugamensis* Lindsay, 1926, *Funambulus palmarum bellaricus* Wroughton, 1916, and *Funambulus palmarum palmarum* (Linnaeus, 1766) (including ‘*comorinus*’, ‘*gossei*’, and ‘*bengalensis*’). Phillips (1981) listed four subspecies from Sri Lanka – *Funambulus palmarum brodei* (Blyth, 1849), *Funambulus palmarum kelaarti* (Layard, 1851), *Funambulus palmarum olympius* Thomas & Wroughton, 1915, and *Funambulus palmarum favonicus* Thomas & Wroughton, 1915 (including junior synonym *Funambulus palmarum matugamensis* Lindsay, 1926). Corbet and Hill (1992) propose the following subspecies from the region: *Funambulus palmarum comorinus* Wroughton, 1905, *Funambulus palmarum favonicus* Thomas and Wroughton, 1915, *Funambulus palmarum olympius* Thomas and Wroughton, 1915, *Funambulus palmarum bellaricus* Wroughton, 1916, and *Funambulus palmarum matugamensis* Lindsay, 1926. We retain only four forms owing to character overlaps with two Indian forms – *Funambulus palmarum palmarum* (Linnaeus, 1766) and *Funambulus palmarum bellaricus* Wroughton, 1916; and two Sri Lankan forms – *Funambulus palmarum matugamensis* Lindsay, 1924 and *Funambulus palmarum kelaarti* (Layard, 1851).

8. *Funambulus pennantii* Wroughton, 1905

1905. *Funambulus pennantii* Wroughton, J. Bombay nat. Hist. Soc., 16(3): 411.

Name: Northern Palm Squirrel

Type locality: Mandavi, Surat dist., Bombay Presidency (now Gujarat), India

Synonyms: *Funambulus pennantii* Wroughton, 1905
Funambulus pennantii argentescens Wroughton, 1905
Funambulus pennantii lutescens Wroughton, 1905

Subspecies: *Funambulus pennantii pennantii* Wroughton, 1905

Distribution: Andaman & Nicobar Islands (introduced), Andhra Pradesh, Assam, Bihar, Chattisgarh, Delhi, Uttaranchal, Punjab, Gujarat, Haryana, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Sikkim, Uttar Pradesh and West Bengal in India; Nepal; Bangladesh; Pakistan.

Comments: Belongs to the subgenus *Prasadsciurus* Moore and Tate, 1965. Ellerman (1961) synonymized *Funambulus pennantii argentescens* Wroughton, 1905 and *Funambulus pennantii lutescens* Wroughton, 1905 with the nominate race. Corbet and Hill (1992) followed the same trend. It has been introduced in northeastern India and Andaman & Nicobar Islands by humans (Kurup, 1968; Saha, 1980).

9. *Funambulus sublineatus* (Waterhouse, 1838)

1838. *Sciurus sublineatus* Waterhouse, Proc. zool. Soc. London, 1838: 19.

Name: Dusky-striped Squirrel

Type locality: Nilgiri Hills, Madras (now Tamil Nadu), India

Synonyms: *Sciurus sublineatus* Waterhouse, 1838
Sciurus delesserti Gervais, 1841
Sciurus trilineatus Kelaart, 1852
Sciurus palmarum var. *obscura* Pelzeln & Kohl, 1886
Funambulus kathleenae Thomas & Wroughton, 1915

Subspecies: *Funambulus sublineatus sublineatus* (Waterhouse, 1838)
Funambulus sublineatus obscurus (Pelzeln & Kohl, 1886)

Distribution: Endemic to South Asia. Western Ghats of Karnataka, Kerala and Tamil Nadu in India; Sri Lanka.

Comments: Belongs to subgenus *Funambulus* Lesson, 1835. Ellerman (1961) and Corbet and Hill (1992) recognised above mentioned two subspecies from the region.

10. *Funambulus tristriatus* (Waterhouse, 1837)

1837. *Sciurus tristriatus* Waterhouse, Charlseworth's Mag. nat. Hist., 1: 499.

Name: Jungle Striped Squirrel, Western Ghats Striped Squirrel

Type locality: Western Ghats, India

Synonyms: *Sciurus (Tamias) dussumieri* Milne-Edwards, 1867

Funambulus wroughtoni Ryley, 1913
Funambulus tristriatus numarius Wroughton, 1916
Funambulus tristriatus annandalei Robinson, 1917
Funambulus thomasi Wroughton & Davidson, 1919

Subspecies: *Funambulus tristriatus tristriatus*
 (Waterhouse, 1837)

Funambulus tristriatus wroughtoni (Ryley, 1913)

Distribution: Endemic to India. Western Ghats of Karnataka, Kerala, Maharashtra and Tamil Nadu in India.

Comments: Belongs to subgenus *Funambulus* Lesson, 1835. We follow Ellerman (1961) in retaining *Funambulus tristriatus tristriatus* (Waterhouse, 1837) and *Funambulus tristriatus wroughtoni* (Ryley, 1913). However, Corbet and Hill (1992) retained the subspecies *Funambulus tristriatus numarius* Wroughton, 1916 and *Funambulus tristriatus annandalei* Robinson, 1917. Following Ellerman and Morrison-Scott (1951) we do not treat the later taxon as distinct due to similarities between them and two accepted subspecies.

Genus *Marmota* Blumenbach, 1779

Marmots

This genus is widespread in the Northern Hemisphere above the Tropic of Capricorn. It is represented by two species in the region.

11. *Marmota caudata* (Geoffroy, 1844)

1844. *Arctomys caudatus* Geoffroy, In Jacquemont, Voy. dans l'Inde 4, Zool., p. 66.

Name: Long-tailed Marmot, Golden Marmot

Type locality: Hombhur (Gombhur), Upper reaches of Indus, Kashmir, India

Synonyms: *Arctomys caudatus* Geoffroy, 1844
Arctomys aurea Blanford, 1875
Arctomys aureus Blanford, 1875
Arctomys littedalei Thomas, 1909
Marmota stirlingi Thomas, 1916

Subspecies: *Marmota caudata caudata* (Geoffroy, 1844)
Marmota caudata aurea (Blanford, 1875)

Distribution: Jammu & Kashmir in India; Pakistan.

Comments: Ellerman (1961) maintained two subspecies, *Marmota caudata caudata* (Geoffroy, 1844) and *Marmota caudata aurea* (Blanford, 1875) based on characteristics of saddle patch from the region. Corbet and Hill (1992) does not include this taxon in their work. We follow Ellerman and Morrison-Scott (1951), Ellerman (1961), Hoffmann *et al.* (1993) and Roberts (1997) to retain both the subspecies.

12. *Marmota himalayana* (Hodgson, 1841)

1841. *Arctomys himalayanus* Hodgson, J. Asiatic Soc. Bengal, 10: 777.

Name: Himalayan Marmot

Type locality: Nepal

Synonyms: *Arctomys himalayanus* Hodgson, 1841

Marmota bobak himalayana (Hodgson, 1841)
Arctomys hemachalanus Hodgson, 1843
Arctomys hemachalana (Hodgson, 1843)
Arctomys tibetanus Gray, 1847.

Subspecies: None.

Distribution: Himachal Pradesh, Jammu & Kashmir, Sikkim and Uttaranchal in India; Pakistan; Nepal.

Comments: Ellerman and Morrison-Scott (1951), Ellerman (1961) and Corbet (1978) treated it as a subspecies of *Marmota bobak* (Muller, 1776). Hoffmann *et al.* (1993) indicates that Gromov *et al.* (1965) elevated the taxon 'himalayana' to specific level. Pakistan population was treated as *Marmota himalayana himalayana* (Hodgson, 1841) by Roberts (1997).

Genus *Ratufa* Gray, 1867

Giant Squirrels

This genus is represented by three species in the region. The genus *Ratufa* Gray, 1867 was treated by Corbet and Hill (1992) under the subfamily Ratufinae Moore, 1959 in Family Sciuridae Gray, 1821. Two species are endemic to South Asia of which one is restricted to India.

13. *Ratufa bicolor* (Sparman, 1778)

1778. *Sciurus bicolor* Sparman, Göthenborg Samhalle Hand. (Wet. Afd.), 1: 70.

Name: Black Giant Squirrel, Malayan Giant Squirrel

Type locality: Anjer, W Java, Indonesia

Synonyms: *Sciurus bicolor* Sparman, 1778
Sciurus giganteus McClelland, 1839
Sciurus macruroides Hodgson, 1849 (*nom. nud.*)
Ratufa gigantea stigmata Thomas, 1923

Subspecies: *Ratufa bicolor gigantea* (McClelland, 1839)

Distribution: Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura and West Bengal in India; Probably also in parts of Bangladesh, Bhutan and Nepal.

Comments: Ellerman and Morrison-Scott (1951) listed eight subspecies, while Ellerman (1961), Moore and Tate (1965), and Corbet and Hill (1992) have listed five subspecies of which only one is valid for the region.

14. *Ratufa indica* (Erxleben, 1777)

1777. *Sciurus indicus* Erxleben, Syst. Regn. Anim., 1: 420.

Name: Indian Giant Squirrel, Malabar Giant Squirrel

Type locality: Bombay Presidency, India

Synonyms: *Sciurus indicus* Erxleben, 1777
Sciurus purpureus Zimmerman, 1777
Sciurus maximus Schreber, 1784
Sciurus maxima (Schreber, 1784)
Sciurus bombayus Boddaert, 1785
Sciurus bombaya (Boddaert, 1785)
Sciurus malabaricus Scopoli, 1786
Sciurus malabarica (Scopoli, 1786)

Sciurus elphinstonei Sykes, 1831
Sciurus elphinstoni (Sykes, 1831)
Sciurus indicus var. *dealbatus* Blanford, 1897
Ratufa indicus var. *bengalensis* Blanford, 1897
Ratufa indica var. *bengalensis* (Blanford, 1897)
Ratufa indica superans Ryley, 1913

Subspecies: *Ratufa indica indica* (Erxleben, 1777)
Ratufa indica maxima (Schreber, 1784)
Ratufa indica centralis Ryley, 1913

Distribution: Endemic to India. Andhra Pradesh, Chattisgarh, Goa, Gujarat, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa and Tamil Nadu.

Comments: Abdulali and Daniel (1952) reported eight colour forms of this taxon from its range in India. Ellerman (1961) listed five subspecies - *Ratufa indica indica* (Erxleben, 1777), *Ratufa indica superans* Ryley, 1913, *Ratufa indica bengalensis* (Blanford, 1897), *Ratufa indica centralis* Ryley, 1913, and *Ratufa indica maxima* (Schreber, 1784). Corbet and Hill (1992) following Moore and Tate (1965) recognised four subspecies including *Ratufa indica dealbata* (Blanford, 1897) a pale coloured population from Gujarat. However, recent surveys have yielded no sightings of this taxon in its range in Gujarat.

15. *Ratufa macroura* (Pennant, 1769)

1769. *Sciurus macrourus* Pennant, Ind. Zool., 1: pl 1.

Name: Grizzled Giant Squirrel
Type locality: Highlands of Central and Uva Provinces, Sri Lanka
Synonyms: *Sciurus zeylanicus* Ray, 1693
Sciurus macrourus Pennant, 1769
Sciurus ceylonicus Erxleben, 1777
Sciurus ceylonica (Erxleben, 1777)
Sciurus ceilonensis Boddaert, 1785
Sciurus tennentii Blyth, 1849

Sciurus macrourus var. *montanus* Kelaart, 1852
Sciurus macrourus var. *montana* (Kelaart, 1852)
Ratufa macrourus albipes Blyth, 1859
Sciurus macrura Blanford, 1891
Ratufa macroura sinhala Phillips, 1931

Subspecies: *Ratufa macroura macroura* (Pennant, 1769)
Ratufa macroura melanochra Thomas & Wroughton, 1915
Ratufa macroura dandolena Thomas & Wroughton, 1915

Distribution: Endemic to South Asia. Tamil Nadu and Kerala in India and many localities in Sri Lanka.

Comments: Ellerman (1961) listed three subspecies that were accepted later by Moore and Tate (1965), Phillips (1981) and Corbet and Hill (1992). *Ratufa macroura dandolena* is the taxon occurring in India (Ellerman, 1961).

Genus *Tamiops* Allen, 1906 Asiatic Striped Squirrels

The Genus *Tamiops* Allen, 1906 was earlier treated as subgenus under the Genus *Callosciurus* Gray, 1867 (Ellerman, 1940; Moore, 1959). Moore and Tate (1965) treated it as a distinct genus. This genus is restricted to Oriental region from the Himalaya to South East Asia and is represented by a species in the region.

16. *Tamiops macclellandi* (Horsfield, 1840)

1840. *Sciurus macclellandi* Horsfield, Proc. zool. Soc. London, 1840: 152.

Name: Himalayan Striped Squirrel
Type locality: Assam, India
Synonyms: *Sciurus macclellandi* Horsfield, 1840
Sciurus macclellandii (Horsfield, 1840)
Sciurus pembertonii Blyth, 1842
Sciurus macclellandii manipurensis Bonhote, 1900

Subspecies: *Tamiops macclellandi macclellandi* (Hodgson, 1840)

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

Comments: Ellerman (1940, 1961) and Moore (1959) treated the genus *Tamiops* Allen, 1906 as one of the subgenus of *Callosciurus* Gray, 1867. Later, Moore and Tate (1965) elevated it to the generic level. Ellerman (1961) included three subspecies, namely *Callosciurus macclellandi macclellandi* (Horsfield, 1840), *Callosciurus macclellandi barbei* (Blyth, 1847) and *Callosciurus macclellandi collinus* (Moore, 1958), while Corbet and Hill (1992) included six subspecies from the Indo-Malayan region. Of these only *Tamiops macclellandi macclellandi* (Horsfield, 1840) is found within the range of South Asia.

Subfamily: *Pteromyinae* Brandt, 1855

Genus *Belomys* Thomas, 1908 Hairy-footed Flying Squirrel

The genus *Belomys* Thomas, 1908 (= *Trogopterus* Heude, 1898) was treated by Corbet and Hill (1992) under family Pteromyidae Brandt, 1855. This genus is restricted to the Himalayas in South Asia and South China. It is represented by single species in the region.

17. *Belomys pearsonii* (Gray, 1842)

1842. *Sciuropterus pearsonii* Gray, Ann. Mag. nat. Hist., (1)10: 263.

Name: Hairy-footed Flying Squirrel
Type locality: Darjeeling, Assam (now West Bengal), India
Synonyms: *Sciuropterus pearsonii* Gray, 1842
Trogopterus pearsonii (Gray, 1842)
Sciuropterus villosus Blyth, 1847
Belomys trichotis Thomas, 1908
Belomys pearsonii trichotis (Thomas, 1908)
Trogopterus pearsonii trichotis (Thomas, 1908)

Subspecies: *Belomys pearsonii pearsonii* (Gray, 1842)

Distribution: Assam, Arunachal Pradesh and Sikkim in India; Bhutan; Nepal.

Comments: Ellerman (1940, 1961) and Hoffmann *et al.* (1993) included this taxon under *Belomys* Thomas 1908, while Corbet and Hill (1992) included it under *Trogopterus* Heude, 1898.

Genus *Biswamoyopterus* Saha, 1981
Namdapha Flying Squirrel

Corbet and Hill (1992) treated it under family Pteromyidae Brandt, 1855. This monotypic genus is known only from type locality and its vicinity in the Himalaya in Arunachal Pradesh, India.

18. *Biswamoyopterus biswasi* Saha, 1981

1981. *Biswamoyopterus biswasi* Saha, Bull. Zool. Surv. India, 4: 333.

Name: Namdapha Flying Squirrel

Type locality: Deban, Namdapha, Tirap dist. (now in Chanlang dist.), Arunachal Pradesh in India

Synonyms: None

Subspecies: None

Distribution: Endemic to India, known only from type locality (East of Miao, Changlang dist.) and its vicinity in India.

Comments: No sightings after the type description by Saha (1981). However, recently, three specimens were seen at Deban and one at Haldibari on 23 and 24 December 2002 by a Swiss birdwatcher in Namdapha (Ritschard, 2003).

Genus *Eupetaurus* Thomas, 1888
Woolly Flying Squirrel

Corbet and Hill (1992) included this monotypic genus under family Pteromyidae Brandt, 1855. The Genus *Eupetaurus* Thomas, 1888 is sometimes also treated under a family Eupetauridae Schaub, 1953 (Hoffmann *et al.*, 1993). This genus is restricted to Himalayan tracts of South Asia, Tibet and Yunan in South China.

19. *Eupetaurus cinereus* Thomas, 1888

1888. *Eupetaurus cinereus* Thomas, J. Asiatic Soc. Bengal, 57: 258.

Name: Woolly Flying Squirrel

Type locality: Gilgit Valley, Kashmir, India

Synonyms: None

Subspecies: None

Distribution: Pakistan-occupied-Kashmir and Sikkim in India; Pakistan.

Comments: Schaub (1953) erected a separate family Eupetauridae to accommodate this taxon. Later, McKenna (1962) retained it to Sciuridae based on its affinity with *Petaurista* genus, especially *Petaurista xanthotis* (Milne-Edwards, 1872).

Genus *Hylopetes* Gray, 1867
Arrow-tailed Flying Squirrels

Corbet and Hill (1992) included this genus under Family Pteromyidae Brandt, 1855. This genus is restricted to Oriental region from the Himalaya to South East Asia. Two subgenera,

namely *Hylopetes* Thomas, 1908 and *Eoglaucomys* Howell, 1915 are recognised. The present review has listed three species from the region, out of which one is endemic to South Asia. Ellerman and Morrison-Scott (1951) recognised another species of the genus, namely, *Hylopetes phayrei* (Blyth, 1859) from Manipur India. However, Hoffmann *et al.* (1993) excludes it from South Asia. We exclude this species from this checklist for want of a confirmed locality in the region.

20. *Hylopetes alboniger* (Hodgson, 1836)

1836. *Sciuropterus alboniger* Hodgson, J. Asiatic Soc. Bengal, 5: 231.

Name: Parti-coloured Flying Squirrel

Type locality: Central and northern regions of Nepal

Synonyms: *Sciuropterus alboniger* Hodgson, 1836
Sciuropterus turnbulli Gray, 1837
? *Pteromys leachii* Gray, 1837

Subspecies: *Hylopetes alboniger alboniger* (Hodgson, 1836)

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

Comments: Belongs to subgenus *Hylopetes* Thomas, 1908. Ellerman (1961) included two subspecies – *Hylopetes alboniger alboniger* (Hodgson, 1936) and *Hylopetes alboniger leonardi* (Thomas, 1921) of which the latter does not occur in South Asia. However, Corbet and Hill (1992) synonymized *Hylopetes alboniger leonardi* with the nominate race and list two extralimital races, namely, *Hylopetes alboniger orinus* Allen, 1940 and *Hylopetes alboniger chiangfengensis* Wang and Lu, 1966.

21. *Hylopetes baberi* (Blyth, 1847)

1847. *Sciuropterus baberi* Blyth, J. Asiatic Soc. Bengal, 16: 866.

Name: Small Afghan Flying Squirrel

Type locality: Nizrow, Kohistan, Afghanistan

Synonyms: *Sciuropterus baberi* Blyth, 1847
Hylopetes fimbriatus baberi (Blyth, 1847)

Subspecies: None.

Distribution: Jammu & Kashmir in India; Pakistan.

Comments: Belongs to subgenus *Eoglaucomys* Howell, 1915. Ellerman (1940, 1961), and Ellerman and Morrison-Scott (1951) treated this taxon as subspecies of *Hylopetes fimbriatus* (Gray, 1837). Chakraborty (1981) elevated it to species rank, a trend that was accepted by Corbet and Hill (1992) and Hoffmann *et al.* (1993).

22. *Hylopetes fimbriatus* (Gray, 1837)

1837. *Sciuropterus fimbriatus* Gray, Ann. Mag. nat. Hist., 1: 584.

Name: Small Kashmir Flying Squirrel

Type locality: Simla, Himachal Pradesh, India

Synonyms: *Sciuropterus fimbriatus* Gray, 1837
? *Sciuropterus fimbriata* Gray, 1837

Subspecies: *Hylopetes fimbriatus fimbriatus* (Gray, 1837)

Distribution: Endemic to South Asia. Jammu & Kashmir, and Uttaranchal (Pasha & Suhail, 1997) in India; Pakistan.

Comments: Belongs to subgenus *Eoglaucomys* Howell,

1915. Ellerman (1940, 1961) included two subspecies – *Hylopetes fimbriatus fimbriatus* (Gray, 1837) and *Hylopetes fimbriatus baberi* (Blyth, 1847). The latter taxon was elevated to specific level by Chakraborty (1981).

Genus *Petaurista* Link, 1795
Giant Flying Squirrels

The genus *Petaurista* Link, 1795 was treated by Corbet and Hill (1992) under family Pteromyidae Brandt, 1855. This genus is widespread in Asia ranging from South to East Asia. It is represented by five species in the region. One species is endemic to South Asia.

23. *Petaurista caniceps* (Gray, 1842)

1842. *Sciuropterus caniceps* Gray, Ann. Mag. nat. Soc., 10: 262.

Name: Grey-headed Flying Squirrel

Type locality: Nepal

Synonyms: *Sciuropterus caniceps* Gray, 1842
Petaurista elegans caniceps (Gray, 1842)
Sciuropterus senex Hodgson, 1844
Sciuropterus gorkhali Lindsay, 1929
Petaurista elegans gorkhali (Lindsay, 1929)

Subspecies: None for the region.

Distribution: Arunachal Pradesh, Sikkim Uttaranchal, and West Bengal in India; Bhutan; Nepal.

Comments: Ellerman (1940, 1961), and, Ellerman and Morrison-Scott (1951) included this taxon under *Petaurista elegans* (Müller, 1840). Corbet and Hill (1992) treated it as a distinct species, which is sympatric with *Petaurista elegans* (Müller, 1840) in western Yunnan. However, Hoffmann *et al.* (1993) treated *Petaurista caniceps* (Gray, 1842) and other synonyms listed above under *Petaurista elegans* (Müller, 1840). We follow Corbet and Hill (1992).

24. *Petaurista magnificus* (Hodgson, 1836)

1836. *Sciuropterus magnificus* Hodgson, J. Asiatic Soc. Bengal, 5: 231.

Name: Hodgson's Flying Squirrel

Type locality: Central and Northern regions of Nepal

Synonyms: *Sciuropterus magnificus* Hodgson, 1836

Subspecies: *Petaurista magnificus magnificus* (Hodgson, 1836).
Petaurista magnificus hodgsoni Ghose & Saha, 1981

Distribution: Arunachal Pradesh, Sikkim and West Bengal in India; Nepal.

Comments: Ellerman (1940, 1961) and, Ellerman and Morrison-Scott (1951) Considered *Sciuropterus nobilis* Gray, 1842 and *Sciuropterus chrysotrix* Hodgson, 1844 as synonyms of the present species. But see comments under *Petaurista nobilis* (Gray, 1842). One record of this species from southern Tibet adjoining Nepal border by Feng *et al.* (1986) needs taxonomic confirmation.

25. *Petaurista nobilis* (Gray, 1842)

1842. *Sciuropterus nobilis* Gray, Ann. Mag. nat. Hist., 10: 263.

Name: Noble Giant Flying Squirrel, Gray's Giant Flying Squirrel

Type locality: Darjeeling, West Bengal, India

Synonyms: *Sciuropterus nobilis* Gray, 1842
Sciuropterus chrysotrix Hodgson, 1844.

Subspecies: *Petaurista nobilis nobilis* (Gray, 1842).
Petaurista nobilis singhei Saha, 1977

Distribution: Endemic to South Asia. Sikkim and West Bengal in India; Bhutan; Nepal.

Comments: Ellerman (1940, 1961) and, Ellerman and Morrison-Scott (1951) included this taxon under *Petaurista magnificus* (Hodgson, 1836). Ghose and Saha (1981) basing on its distinctness considered *nobilis* as a separate species and kept *Sciuropterus chrysotrix* Hodgson, 1844 as synonym under it. Corbet and Hill (1992) and Hoffmann *et al.* (1993) also maintain *nobilis* as a distinct species.

26. *Petaurista petaurista* (Pallas, 1766)

1766. *Sciurus petaurista* Pallas, Misc. Zool., 54.

Name: Red Giant Flying Squirrel, Common Giant Flying Squirrel

Type locality: Western Java, Indonesia

Synonyms: *Sciurus petaurista* Pallas, 1766
Pteromys albiventer Gray, 1834
Petaurista petaurista albiventer (Gray, 1834)
Pteromys inornatus Geoffroy, 1844
Pteromys birrelli Wroughton, 1911
Pteromys fulvinus Wroughton, 1911

Subspecies: *Petaurista petaurista albiventer* (Gray, 1834)

Distribution: Arunachal Pradesh, Jammu & Kashmir, Meghalaya, Sikkim and Uttaranchal in India; Nepal; Pakistan.

Comments: Ellerman (1940, 1961) and, Ellerman and Morrison-Scott (1951) included *Petaurista philippensis* (Elliot, 1839) as one of the many subspecies of *Petaurista petaurista* (Pallas, 1766) as *Petaurista petaurista philippensis* (Elliot, 1839). Ellerman (1961) dealt in detail on nine subspecies of this taxon. Corbet and Hill (1992) revised this taxon and separated many forms either as synonyms or subspecies of *Petaurista philippensis* (Elliot, 1839).

27. *Petaurista philippensis* (Elliot, 1839)

1839. *Pteromys philippensis* Elliot, Madras J. Litt. and Sci., 10: 217.

Name: South Indian Giant Flying Squirrel, Large Brown Flying Squirrel

Type locality: Near Madras*, India

Synonyms: *Pteromys philippensis* Elliot, 1839
Petaurista petaurista philippensis (Elliot, 1839)
Pteromys oral Tickell, 1842
?Pteromys griseiventer Gray, 1843
Petaurista cindrella Wroughton, 1911
Petaurista lanka Wroughton, 1911

Subspecies: *Petaurista philippensis philippensis* (Elliot, 1839).
Distribution: Andhra Pradesh, Goa, Gujarat, Jharkhand, Karnataka, Kerala, Maharashtra, Orissa, Rajasthan, Tamil Nadu and West Bengal in India; Sri Lanka.

Comments: *No exact location was given but the paper in which it was dealt was about Mammals of South Mahratta Country. Ellerman (1961) and, Ellerman and Morrison-Scott (1951) included this taxon under *Petaurista petaurista* (Pallas, 1766) as its subspecies. Phillips (1981) described the Sri Lankan taxon under *Petaurista petaurista lanka* Wroughton, 1911 following Ellerman and Morrison-Scott (1951). Corbet and Hill (1992) reviewed and revised *Petaurista petaurista* (Pallas, 1766) forms and elevated 'philippensis' forms to specific level under *Petaurista philippensis* (Elliot, 1839).

Genus *Petinomys* Thomas, 1908 Dwarf Flying Squirrel

The genus *Petinomys* Thomas, 1908 was treated by Corbet and Hill (1992) under family Pteromyidae Brandt, 1855. This genus is restricted to Oriental region from the Peninsular India and Sri Lanka to South East Asia. It is represented by an endemic species in the region.

28. *Petinomys fuscocapillus* (Jerdon, 1847)

1847. *Sciuropterus fuscocapillus* Jerdon, J. Asiatic Soc. Bengal, 16: 867.

Name: Travancore Flying Squirrel
Type locality: Travancore (now southern Kerala), India
Synonyms: *Sciuropterus fuscocapillus* Jerdon, 1847
Sciuropterus layardi Kelaart, 1850
Petinomys fuscocapillus layardi (Kelaart, 1850)

Subspecies: *Petinomys fuscocapillus fuscocapillus* (Jerdon, 1847)
Distribution: Endemic to South Asia. Kerala and Tamil Nadu in India (Kurup, 1989; Rajamani, 2001); Sri Lanka.

Comments: Ellerman (1940, 1961) included two subspecies, namely *Petinomys fuscocapillus fuscocapillus* (Jerdon, 1847) and *Petinomys fuscocapillus layardi* (Kelaart, 1850). Phillips (1981) gave a detailed account of *Petinomys fuscocapillus layardi* (Kelaart, 1850). Corbet and Hill (1992) synonymized the latter taxon with the nominate race.

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