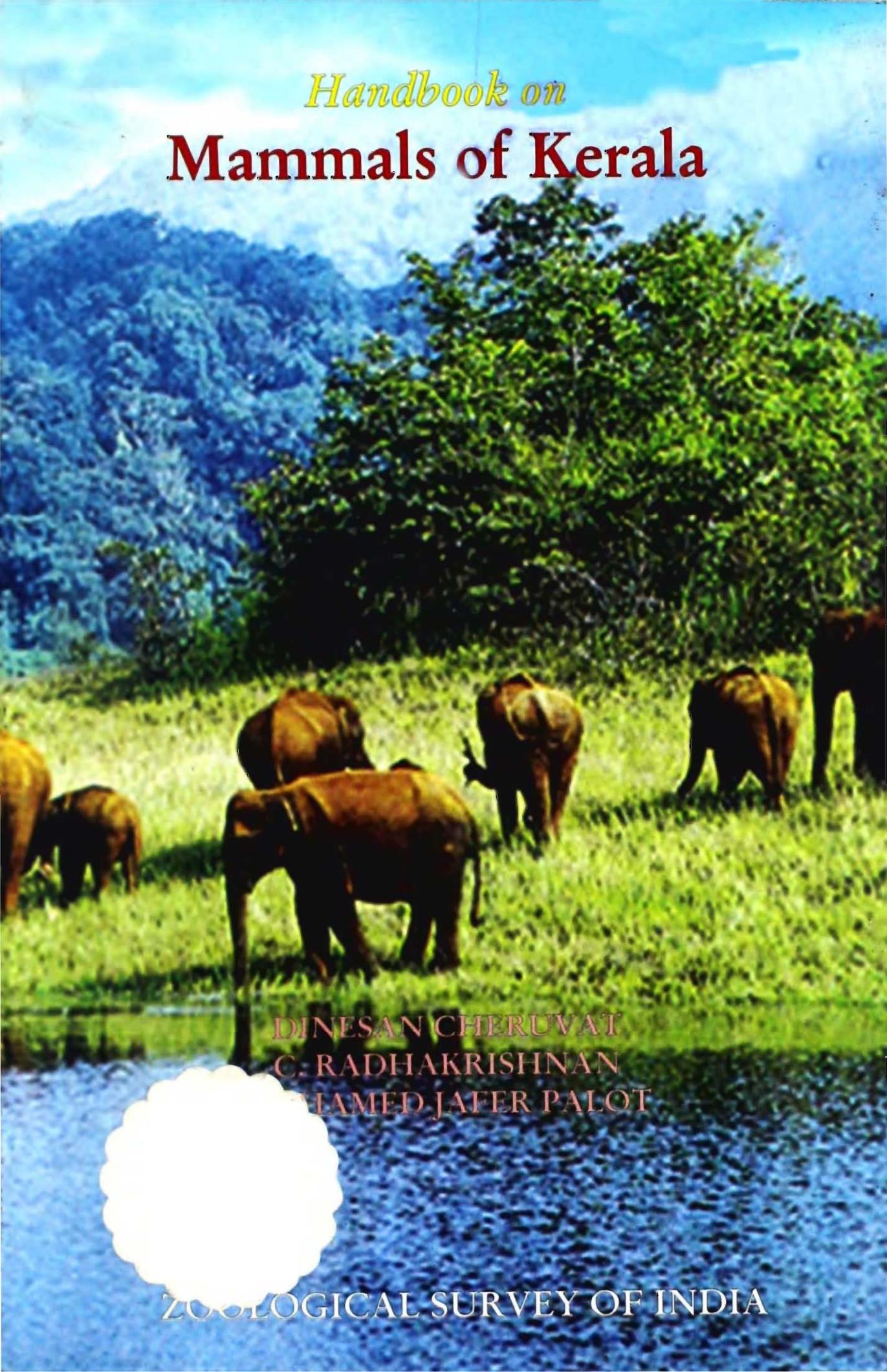


Handbook on
Mammals of Kerala



DINESAN CHERUVAT
C. RADHAKRISHNAN
MAHAMED JAFER PALOT

ZOOLOGICAL SURVEY OF INDIA

Handbook on
MAMMALS OF KERALA

**DINESAN CHERUVAT
C. RADHAKRISHNAN
MUHAMED JAFER PALOT**

*Western Ghats Field Research Station, Zoological Survey of India,
Calicut 673 002 (Kerala)*

Edited by the Director, Zoological Survey of India, Kolkata



**Zoological Survey of India
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PREFACE

Mammals are the animals that man knows best, perhaps, since the primeval period of his hunter-gatherer-status. They are the most advanced of all the other groups (classes) of animals of the world today. The members have a worldwide distribution living in diverse eco-habitats like marine and fresh water systems, glaciers, forests and deserts.

The mammalian diversity reported from the world is about 4629 species, of which 408 species are recorded from India, with 44 of them endemic to the country.

In proportion to the land area, the country's richness in mammalian diversity and endemism is very high. Kerala, a small state geographically well integrated with the biodiversity-rich Western Ghats, also reflects the country's mammalian diversity richness, with 110 species, including the marine ones.

Field guides on fauna/flora are user-friendly, quick-reference-database works, and are immensely useful to field biologists, students and amateurs. One may be familiar with the Prater's volume: 'The Book of Indian Animals' (1948), an authentic and exemplary handbook/field guide that deals with the common mammals of India and the adjoining countries, with apt descriptions/illustrations of the species. 'Mammals of India' authored by Vivek Menon (2003) is also a useful field guide, provided with the photographs of most of the Indian mammals.

We have had a few good handbooks on birds of Kerala. There is as yet dearth of such handbooks/field guides that deal with the actual diversity of mammalian species known and reported from Kerala. The only one field guide already available is in the vernacular language (Malayalam), entitled "Keralathile Sasthanangal" (Sadasivan, 1987). But, it deals with only 47 species of terrestrial mammals of Kerala. A handbook incorporated with

all available species of mammals known from the state was therefore reckoned as a necessity. The scope for the same became furthermore clear once collation/compilation of data of all available/known species representing the state was attempted. And, this handbook is in result of that idea and effort.

In the present work, 109 species of mammals reported so far from Kerala are dealt with, including the illustrations for 94 of them. Two species, representing Wolf and Striped Hyena, as mammals recorded from Kerala, and referred by Sadasivan in his work, have been omitted from this document for want of the authentic reports/evidences confirming their occurrence in Kerala. The vernacular names of the species used by local and tribal people—except for some of the lesser-known groups of mammals, like bats, that do not have separate vernacular names—have been adopted and added in this work.

**DINESAN CHERUVAT
C. RADHAKRISHNAN
MUHAMED JAFER PALOT**

*Western Ghats Field Research Station, Zoological Survey of India,
Calicut - 673 002 (Kerala)*

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We are extremely grateful to Dr. J.R.B. Alfred, Director, Zoological Survey of India, Kolkata whose insightful idea of publishing popular series of handbooks and scientific documents on fauna of the country, spurred our inspiration for presenting this work. His constant encouragement and generous support including the facilities extended are gratefully acknowledged.

It is our duty to express our sincere gratitude to the Centre for Environment Education, Ahmedabad, India for providing us with their esteemed publication, "Copy right free illustration series-1: Mammals of India" from which we have reproduced several drawings pertaining to the mammals found in Kerala.

We are indeed extremely indebted to Sri, Sathyan Meppayur, Naturalist, Malabar Natural History Society, Kozhikode, for his exemplary skill as an artist that made us include in this book, several additional drawings that he readily volunteered to provide us.

Author's

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INTRODUCTION

Mammals are the marvels of animal life in nature. Mammalia, the most advanced class of vertebrata, comprises the most evolved animals of the world today. They are perhaps the most amazing as well as fascinating forms of life on earth. From giant whales in the oceans and awesome wild lives like elephant and tiger to tiny shrews and true-flying bats, the mammals exhibit wider variations in size and shape. The members have a worldwide distribution living in diverse eco-habitats like marine and fresh water systems, glaciers, forests and deserts.

Mammalia has originated from a reptilian subclass Synapsida, in the Triassic period of Mesozoic era, about 230 million years ago. The class Mammalia includes 4,629 recognized species (Wilson & Reeder, 1993) under 26 orders, distributed in various continents of the globe. They are warm blooded animals that form one of the highly specialized groups of animals adapted to terrestrial (on land), arboreal (on trees), aquatic (in water) and aerial (in air) modes of life. Some members are fast runners while others are burrowers, climbers, flyers or swimmers.

All mammals, except the monotremes (the Platypus and Echidna of Australian region), give birth to their young ones. The mother mammal suckles her young by the milk secreted by the mammae (mammary glands), hence the name Mammalia to the class. Mammals have their body sparsely or densely covered with hairs; skin bearing sweat, oil and scent glands; and always with external ears or pinnae. Animals invariably have seven cervical vertebrae (vertebrae of neck), even in the long neck of a giraffe. Lower jaw is formed of a single bone called dentary. Teeth are of different kinds (incisors, canines, premolars and molars) fixed in the sockets of the jaw; two sets of teeth develop during the animal's growth, initially the milk teeth in young, replaced by the permanent ones in adult stage. A

kneecap is present on each hind leg. Brain and sensory organs, compared to those of other animals, are well developed.

The Indian biogeography is very characteristic for its varied ecosystems endowed with rich and diverse biota. This feature is well reflected in the species diversity and abundance of mammals in the country. 408 species of mammals, including 44 endemic species, are currently known to exist in India (Nameer, P. O, 1998). In proportion to the land area, the country's richness in mammalian diversity and endemism is indeed very high. Among the Indian states, Kerala is very rich for its diversity of mammalian species. The state has the representation of about 109 species of mammals, including the marine species that visit to the state's continental shelf waters, but excluding the domestic ones. The importance of conservation of mammals and their habits in Kerala is all the more relevant when we realize that out of 26 orders of mammals distributed worldwide, 12 are represented here (Table-I). Unfortunately, 89 species of mammals are threatened in India (Paul Massicot, 2002), and Kerala shares 24 of them (Dinesan Cheruvat *et al.*, 2002).

Kerala state occupying an area of about 38,855 sq.km, with a coastline of about 590 km long, is, geographically, a small territory in the southwestern extremity of Peninsular India. But in biogeographic perspectives, its location, physiography and environmental characteristics render it biogeographic significance. The state is endowed with the best remaining rain forests in the whole of Peninsular India, supporting rich and diverse fauna and flora. Physiographically, the land is divisible into three divisions, viz., the lowlands of coastal areas, undulating midlands of small to medium hills and the highlands occupying forested tracts of Southern Western Ghats.

The dense rain forests of Western Ghats, which is believed to have extended earlier far up to the coastal areas of the state, are no longer in their prime glory of the past. Most of the earlier forest wealth are destroyed and gone, and the existing stock are in a highly degraded and fragmented

state, primarily owing to human interferences. Large scale logging, expansion of commercial plantations, establishment of settlements, construction of hydroelectric projects and other associated developmental activities of man have been contributing to the causes of degradation and destruction of natural forest ecosystems/habitats. One devastating impact of these processes has been the drastic depletion, or even loss of biodiversity of the heavily ravaged natural habitats. Many of the mammals of this biodiversity-rich tract became highly localized in their distribution, thereby threatened in their natural habitats. Several such endangered mammals, some of them endemic to the Western Ghats, with their much-restricted populations, are now seen concentrated and sheltered only in the remaining forested areas falling in the Southern Western Ghats, especially in the forest tracts of Kerala. Some of such threatened mammals sheltered in the forested environs of Kerala are the Lion-tailed Macaque, Nilgiri Langur, Nilgiri Marten, Malabar Civet, Brown Palm Civet and the Nilgiri Tahr.

This book deals with 109 species of mammals reported from Kerala. The scheme of classification followed is after Wilson and Reeder (1993). Status of species are given in accordance with the schedules of Indian Wildlife Protection Act, 1972 [WL. (P) Act, 72], appendices of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) and also based on the observations made by the authors.

The following abbreviations are used in the book :

Mal. Name : Malayalam Name.

HBL : Head and body length.

HTL : Head to Tail length.

TL : Tail length.

Ht : Height at Shoulder.

Wt : Weight.

FA : Fore arm length.

Table-I. Living Orders of Mammals
 (After Wilson, D.E & D.M, Reeder, 1993)

Sl. No.	Orders	Animal groups
1.	MONOTREMATA*	Egg laying mammals- Echidna, Platypus
2.	DIDELPHIMORPHIA*	American Opossums
3.	PAUCITUBERCULATA*	Shrew Opossums
4.	MICROBIOTHERIA*	Chiloe Opossum
5.	DASYUROMORPHIA*	Tasmanian wolf, Australian Spotted Cat
6.	PERAMELEMORPHIA*	Marsupial Bandicoots
7.	NOTORYCTEMORPHIA*	Marsupial Moles
8.	DIPROTODONTIA*	Kangaroos, Wallabies, Wombats, Cuscuses
9.	XENARTHRA*	Sloths, Armadillos, Hairy Anteaters.
10.	INSECTIVORA	Ground shrews, Moles**, Hedge hogs
11.	SCANDENTIA	Tree Shrews
12.	DERMOPTERA*	Flying Lemur
13.	CHIROPTERA	Bats
14.	PRIMATES	Lemurs*, Tarsiers*, Lorises, Monkeys, Apes**, Man

Sl. No.	Orders	Animal groups
15.	CARNIVORA	Flesh eaters- Cats, Dogs, Mongooses etc
16.	CETACEA	Whales, Dolphins.
17.	SIRENIA	Sea cows
18.	PROBOSCIDEA	Elephants
19.	PERISSODACTYLA**	Odd- toed Ungulates- Horses, Tapirs etc.
20.	HYRACOIDEA*	Hyraxes
21.	TUBULIDENTATA*	Aardvarks
22.	ARTIODACTYLA	Even-toed Ungulates - Cattle, Deers, Antelopes etc.
23.	PHOLIDOTA	Scaly anteaters or Pangolins.
24.	RODENTIA	Rodents - Bandicoots, Rats, Mice, Squirrels, Porcupines etc.
25.	LAGOMORPHA	Hares, Rabbits*, Pikas*
26.	MACROSCELIDEA*	Elephant Shrews

* Not represented in India,

** Represented in India but not in Kerala

Order : INSECTIVORA
Ground Shrews, Moles, Hedgehogs**

Insectivora, meaning insect eaters, include small nocturnal, terrestrial, burrowing animals. They are very characteristic for their feature of long, pointed and flexible snout projecting beyond the lower jaw. Limbs are short with 5 digits having claws. Gait is plantigrade. Teeth are almost similar with pointed cusps, adapted to insect feeding. The group has some of the primitive mammalian characters such as small and smooth cerebral hemisphere, absence of scrota and the abdominal position of the testes.

***Not represented in Kerala*

Family ERINACEIDAE
Hedgehogs & Moon rats*

The family, comprising of 17 species belonging to 8 genera, is distributed in Europe, Africa and Asia. The members of the group possess prominent features like comparatively large head, pointed snout, well-developed eyes and ears, and presence of spines on the body. Limbs are pentadactylus with claws. Tail is short in some species and long in others. Hedgehog can curl up into a ball when threatened. They eat a variety of food, like, insects, worms, millipedes, mollusks, frogs, lizards, and even birds and their eggs. In addition, seeds and fruits are also eaten. Recent classification treat this family as a separate order of Erinaceomorpha.

**Not represented in India.*

1. THE PALE HEDGEHOG OR THE SMALL FOOTED HEDGEHOG

Hemiechinus nudiventris (Horsefield)

Mal. Name : *Mulleli, Itbil Panni*

Range : South India.



Hemiechinus nudiventris (Horsefield)

Habitat : Scrub Jungles and dry arid regions.

Size : HBL : 14-25 cm. TL : 1-3 cm, Wt : 310-435 gm.

The animal is only about the size of a bandicoot, but has a stout body, with a stumpy tail concealed in hairs. Limbs are short, with claws. Muzzle is sharp, like that of pig's. Body is covered with short spines on back and sides, and the spines are coloured like dark brown and whitish rings. Belly has yellowish hairs. Body colour is generally light brown. Head and the well-developed ear lobes are nude and sooty-coloured.

This solitary and nocturnal animal lives in a fixed territory, sheltered in holes under scrubs or grass. It feeds mainly on invertebrates and small vertebrates. When alarmed, the animal can roll itself into a ball with erect spines, in self-protection.

4-6 young ones are born after a gestation period of 35-39 days, and delivered in holes lined with grass and leaves. Sexual maturity is attained in ten months.

Status : Endemic to India. Near threatened.

Distribution in Kerala : Kottayam and Palakkad district.

Family SORICIDAE

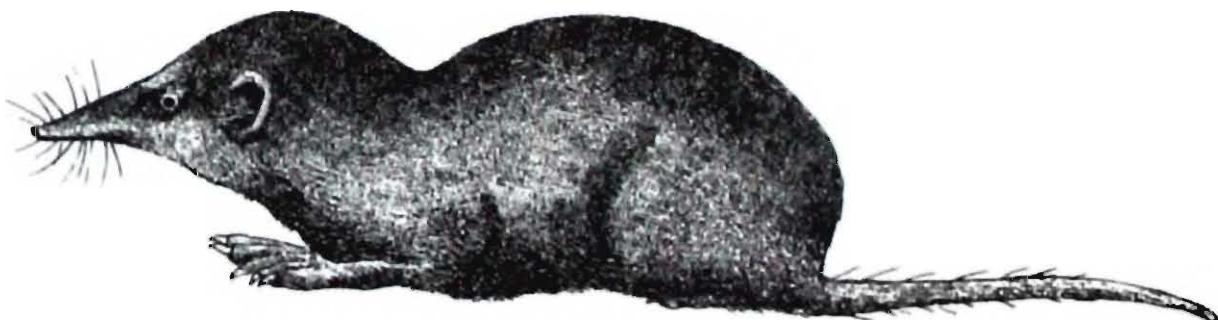
Shrews

Shrews are small to very small mammals bearing short, dense fur. They constitute the largest family of the order Insectivora, with 291 species in 24 genera, distributed world wide, except in the South American and Australian regions. They are ground dwellers (except one species, The Tibetan Water Shrew, which is partly aquatic), generally solitary, often territorial, possessing a small home range. They are active both during day and night, feeding most of the time.

2. GREY MUSK SHREW OR HOUSE SHREW

Suncus murinus (Linnaeus)

Mal. Name : *Veettu Nacheli* or *Mocheneli*



Range : Indian Subcontinent, China, South East Asia, Indonesia.

Habitat : Deciduous forests near human settlements.

Size : HBL : 14-22 cm, TL : 6-9 cm, Wt : 30-60 gm.

Though generally appear like a rat, it is readily distinguishable from rats by its features, such as: long pointed snout projecting well beyond the lower lip; large and rounded, nearly human's like ear lobes; sparsely distributed hairs on tail and feet, etc. Body is covered with soft fur having pale gray to light brown colour, and with lighter under side. Snout, ears, feet and tail are pinkish. The animal produces a strong-smelling secretion

from a gland on each side of the body, hence has the name 'Musk Rat'. However, the name 'Musk Rat' is a misnomer, because it does not belong to the rat family.

This nocturnal animal generally frequents houses in search of cockroaches and other insects, and is often mistaken for a rat and gets killed by man. The animal, in fact, is helpful to man, destroying pests; its presence keeps rats away from houses. It produces a squeaking cry when frightened. Its food includes many invertebrates, small vertebrates, carrion and plant matter. This animal exhibits an interesting behavioural feature: the young ones move in a procession after their mother, each one holding in its mouth, the tail of the preceding one in the line.

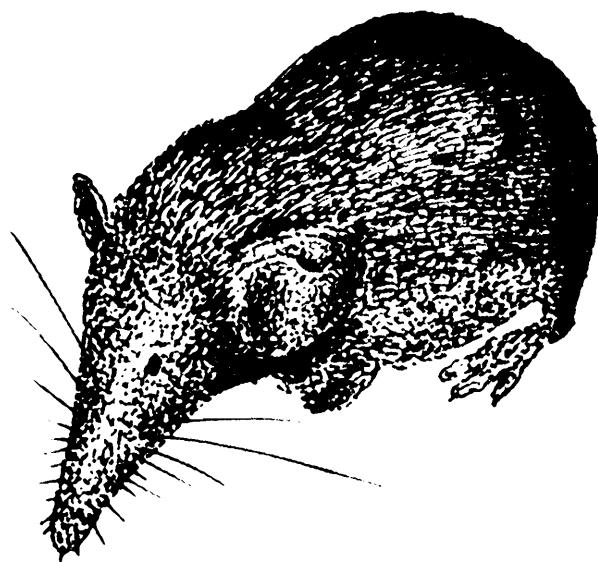
Status : Locally common. About 12 races of this species occur in India, of which *S. m. malabaricus* and *S. m. nigeer* are found in Kerala (ZSI, 2002). A widely distributed species.

Distribution in Kerala : Throughout.

3. SAVI'S PYGMY SHREW OR PYGMY WHITE TOOTHED SHREW

Suncus etruscus (Savi)

Mal. Name : *Cheru nacheli*



Range : Eastern Europe, Western Asia, Eastern Asia, Africa, Madagascar, Indian sub continent, Thailand and China.

Habitat : Scrub jungles, semi-arid grasslands, cultivated lands with rock walls, dumps, rock piles etc.

Size : HBL : 3.6-5.3 cm. TL : 2-3 cm. Wt : 1.2 – 2.3 gm.

This is one of the smallest mammals in the world. Its body is covered with soft, thick and greyish brown fur. Limbs and tail are sparsely haired.

The animal feeds on worms, spiders, and insects like grasshoppers and cockroaches, etc. Very little is known about its ecology, behaviour and breeding habits. Though widely distributed, its population is believed to be thin.

Status : Fairly common. The subspecies *Suncus etruscus perrotteti* Duvernay is known from Kerala.

Distribution in Kerala : Eravikulam National Park

4. DAY'S SHREW

Suncus dayi (Dobson)

Mal. Name : *Nacheli*

Range : South India (Kerala and Tamil Nadu).

Habitat : Montane humid forests.

Size : HBL : 7 cm.

Day's shrew is a small-sized animal, with body colour dark brown on upper parts, and dark with silvery sheen beneath. Hind feet are relatively large.

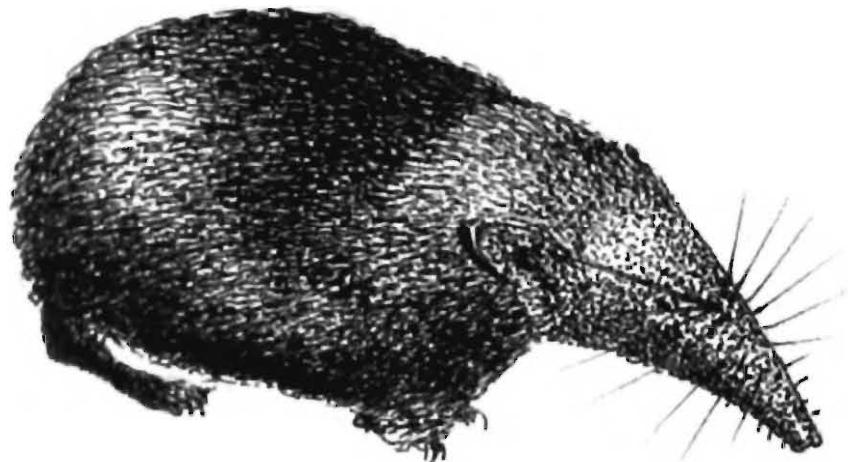
Status : Endemic to South India. Endangered.

Distribution in Kerala : Ernakulam National Park and Thrissur district.

5. MONTANE SHREW/EASTERN CEYLON SHREW

Suncus montanus (Kelaart)

Mal. Name : *Mala Nacheli*



Range : India (Karnataka, Kerala, Tamil Nadu) and Sri Lanka.

Habitat : Montane areas, from 900 m to above.

This species is similar to *Suncus murinus*; however, much smaller in size and blackish in colour. Two subspecies are found : *Suncus montanus malabaricus* and *S. m. niger*.

Status : Endangered.

Distribution in Kerala : Eravikulam National Park and Periyar Tiger Reserve.

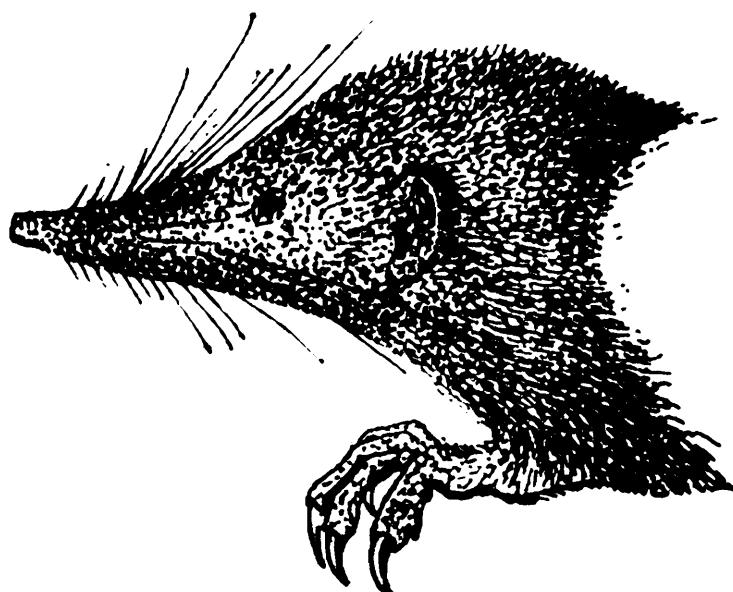
6. KELAART'S LONG CLAWED SHREW

Feroculus feroculus (Kelaart)

Mal. Name : *Ceylon Nacheli*

Range : South India and Sri Lanka.

Habitat : Shola - grasslands.



Feroculus feroculus (Kelaart)

Size : HBL : 10-11.8 cm. TL : 5.6-7.3 cm. Ears : 0.8 cm. Wt : 35-37 gm.

This shrew, reported earlier from Sri Lanka, has recently been observed to occur in Eravikulam National Park in Kerala (Pradhan *et. al.*, 1997). Its soft fur is slaty black in colour on upper parts and lighter beneath. Tail is dark with a few white hairs. Teeth 30, completely white.

Confined to montane shola-grasslands, it feeds on invertebrates, small vertebrates and vegetable matter. Not much is known about its breeding habits.

Status : Endangered.

Distribution in Kerala : Eravikulam National Park.

Order : SCANDENTIA
Tree shrews

The order comprises Tree shrews of 18 species, under 6 genera of two sub-families in a single family of Tupaiidae. The subfamily Tupaiinae

(Bushy tailed shrews) has about 17 species, whereas the other subfamily Ptilocercinae* (Pen-tail shrews) is represented by just one species only. Tree shrews are squirrel-like animals with pointed, shrew's-like snout, and round primate's-like pinnae. Females in different species possess one to three pairs of nipples. Some species are arboreal, some terrestrial, and many both. They feed on fruits, invertebrates (arthropods) and small vertebrates. The members of Tupaiinae have long and bushy tails. The species of Tupaiidae are mostly diurnal, except the nocturnal pen-tail shrew. Only one species is reported from Kerala.

*Not represented in India.

7. INDIAN TREE SHREW OR MADRAS TREE SHREW

Anathana ellioti (Waterhouse)

Mal. Name : *Mara nacheli*



Range : Indian peninsula.

Habitat : Dry deciduous and moist deciduous forests.

Size : HBL : 16-18.5 cm. TL : 16-20 cm. Wt : 180 gm.

Indian Tree shrew exhibits features of both a shrew and a squirrel. The animal has a snout, like that of a shrew, projecting well beyond the

lower lip, rounded ears, slender body and bushy tail. Feet have long phalanges with sharp and moderately curved claws, adapted for climbing. Soles are naked. The Indian Tree Shrew is about the size of a Striped Squirrel. The coat colour is reddish brown (grizzled red and brown) on dorsal side and yellowish white on ventral side. Colour is darker on the back and paler on the sides. There is a pale stripe below the ear, extending to the shoulder.

The animal is both terrestrial and arboreal in habits, feeding mostly from the ground, on insects, small vertebrates and fruits. Very little information is available on the general habits and reproductive behavior of the animal.

Status : The Indian Tree Shrew is not a common animal. Among the three subspecies reported from India, the one present in Kerala is, apparently, *Anathana ellioti ellioti*.

Distribution in Kerala : Wynad Wildlife Sanctuary.

Order CHIROPTERA

Bats

Bats, the only flying group of mammals, comprising of 925 species under 177 genera in 19 families, constitute about a quarter of the entire mammal species. They have a worldwide distribution except in the Arctic, Antarctic zones and at very high mountain peaks. Bats are characteristic for their forelimbs modified into membranous wings, supported by long digits. A membrane called uropatagium is also present between the hind limbs. Knee is directed backwards and not forward as in other mammals. The ear pinna is large and provided with distinct flaps. Most of the bats are gregarious animals living in colonies. They are nocturnal animals hiding in dark places during the day. All bats can see, but most do not use their eyes to find their food. Instead they use their ears and navigate by means of 'echolocation'. They send out ultra sonic sounds and perceive the echoes.

that bounce back by special sense organs thus locating their prey as well as avoiding the obstacles on flight. The Order Chiroptera is divided into two suborders. 1. Megachiroptera (Large frugivorous bats) and 2. Microchiroptera (Small insectivorous bats).

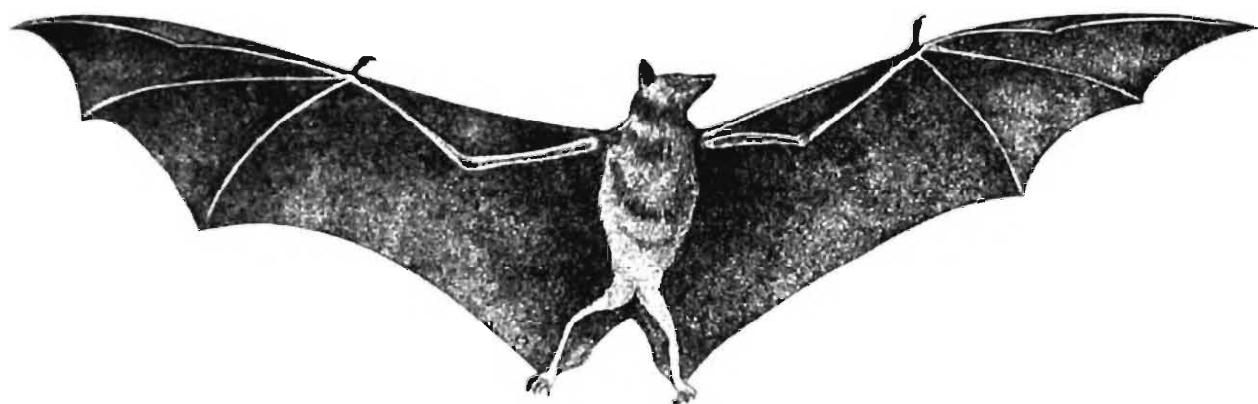
Family PTEROPODIDAE
Old world fruit bats or Flying foxes

Most species of the family have faces like of dogs', large eyes and widely separated simple ears. Males are generally larger than females. Most of the species possess claws, one on the second digit, besides on the thumb. They do not have (Except the genus *Rousettus*) the echolocatory ability, which is compensated by the powerful eyesight and keen sense of smell. There are 173 species under 44 genera distributed in the tropical and sub tropical regions of the world.

8. INDIAN FLYING FOX OR GREAT INDIAN FRUIT BAT

Pteropus giganteus (Brunnich)

Mal. Name : *Vourual, Pattaan, Parakkum kurukkan*



Range : India, Sri Lanka, Bangladesh, Pakistan, Nepal and Myanmar.

Habitat : Semi-evergreen and deciduous forests, near human habitations.

Size : HBL : 19.8-30 cm. FA : 15.2-18.3 cm.

Ear : 3.3-4.5 cm. Wt : 560-625 gm.

The largest of all Indian bats, this species with the largest wingspan can be readily distinguished from other ones by its size and appearance. Its head and nape are rufous black, snout much darker, and neck and shoulders golden yellow. Back of body is dark brown or black and underside yellowish brown. Inter-femoral membrane (uropatagium) is brownish black and wings are black.

The species exhibits social life and lives in colonies of large numbers of individuals, roosting on trees in forests, villages, towns, and in the middle of cities. They prefer to inhabit the areas near human habitations, whose presence is immediately felt by the shrieking and cackling sounds in the roost. They do not have the ability for echolocation, instead use their eyes for navigation. They leave the roost for feeding, one by one, after sunset. In search of edible fruits, they travel considerable distance for locating fruit bearing trees. They crush the fruits between their teeth, feed up on the juice, and then reject the pulp. Soft fruits are swallowed entirely.

The species breeds once in a year. Only a single offspring is born from a female after a gestation period of 140-150 days. Juveniles are carried and fed by the mother for a considerable period.

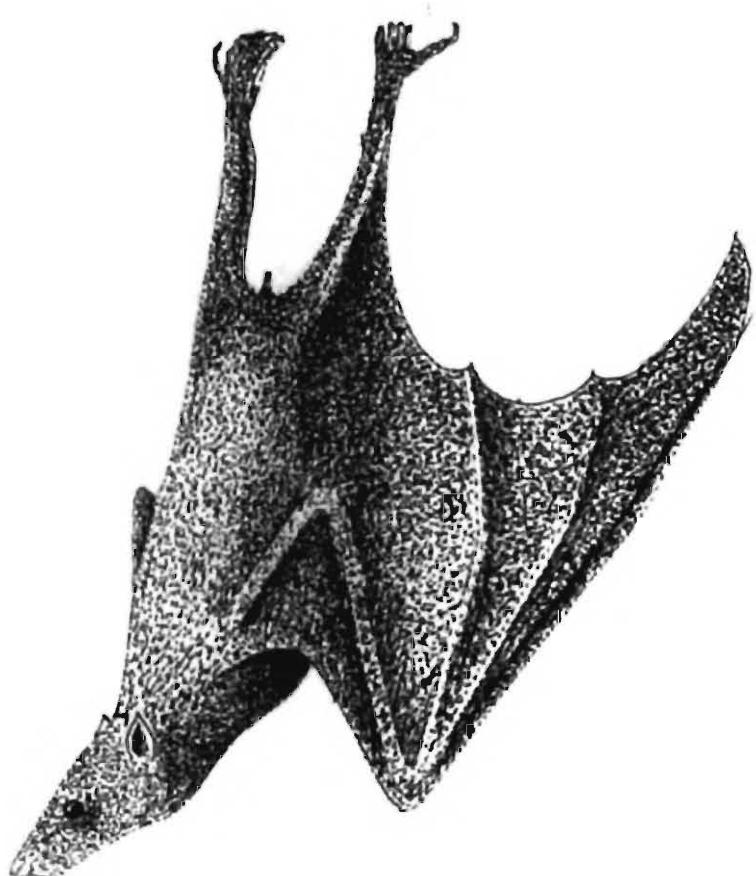
Status : This is a very common species often found in the environs of groves. Colonizing individuals are sometimes destructive to cultivation in certain areas. The animal is eaten in some parts of India. Of the two Indian subspecies, *Pteropus giganteus giganteus* is the one found in Kerala.

Distribution in Kerala : Throughout.

9. INDIAN FULVOUS FRUIT BAT

Rousettus leschenaulti (Desmarest)

Mal. Name : *Thavidan Pazha Vowval*



Range : Indian subcontinent, Sri Lanka, Myanmar, Southern China and South East Asia.

Habitat : Caves and ruins in semi-evergreen and deciduous forests.

Size : HBL : 12.7-14 cm TL : 1.8 cm FA : 7.2-8.6 cm Ear : 1.7-2.4 cm.

Much smaller than the Flying Fox, this bat is light brown or yellowish in colour and paler beneath. Its short and downy fur is whitish at the basal part. Tail is very small but distinct. Males are heavier than females. Among the Megachiropteran bats, only the genus *Rousettus* has the feature of echolocatory means of navigation.

This gregarious bat roosts in colonies of a few to as many as 2000 individuals in caves, tunnels, discarded buildings etc. Sexual segregation is not generally met within the colony, but juveniles are reported to form their own colonies after separation from their mothers. This nocturnal bat leaves the colony in search of food at dusk and is very noisy at their feeding places. Sense of smell, sight and echolocation are used in navigation. Food mainly consists of juice of fruits. They feed along with other bats like Flying Fox, Short-nosed Fruit Bat and Fulvous Fruit Bat from the same tree. They feed mainly in the forested areas.

Young ones are born in two seasons – in March and in August. Juveniles, pink in colour and naked, are carried by the mother for about two months. Growth is very slow and sexual maturity attained in a year.

Status : Common. The Sub-species represented in India is *Rousettus leschenaulti leschenaulti*.

Distribution in Kerala : Thiruvananthapuram. Eravikulam and Silent Valley NP.

10. SHORT-NOSED FRUIT BAT

Cynopterus sphinx (Vahl)

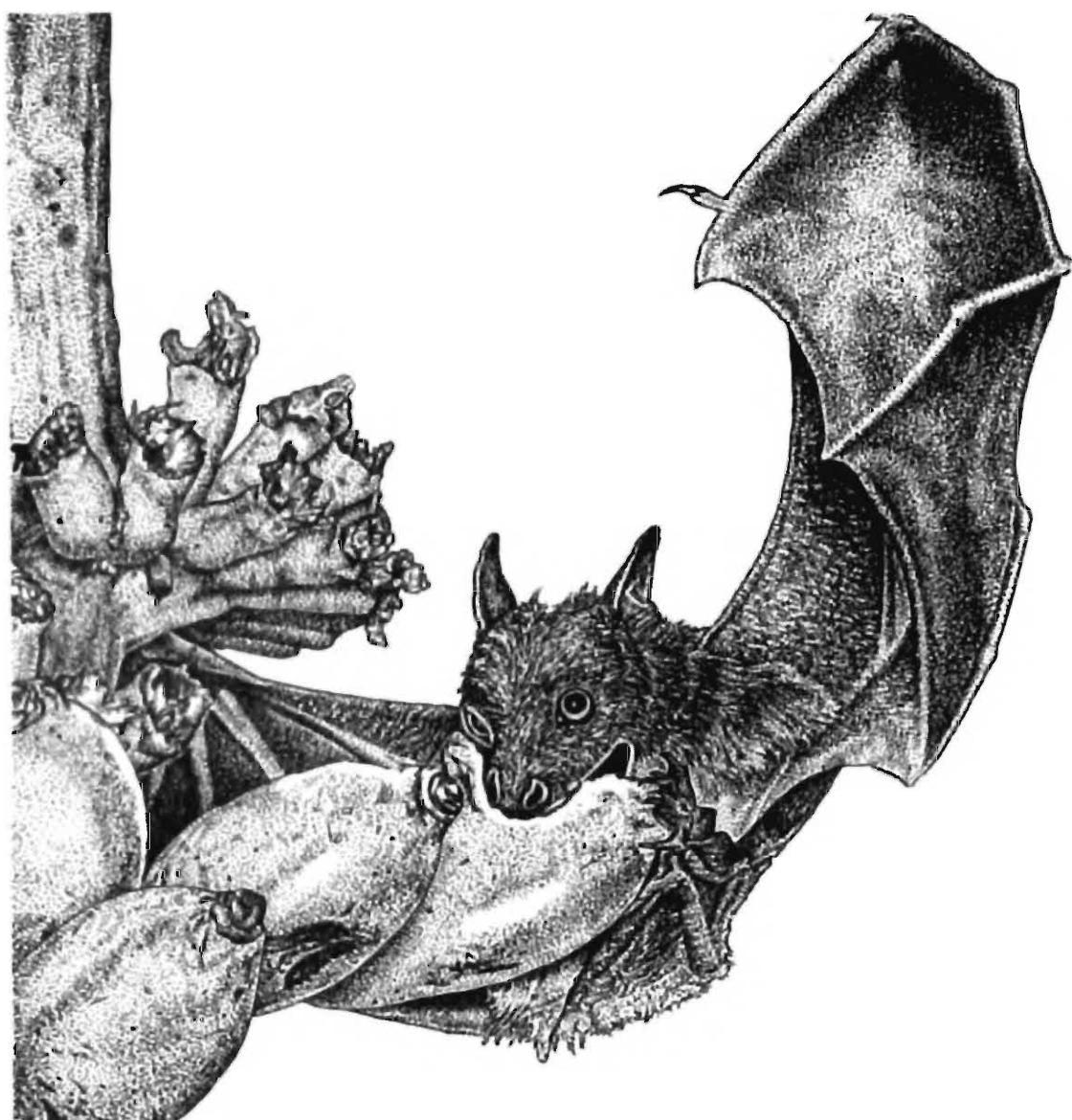
Mal. Name : *Kurumookain Pazhavooruval*

Range : Indian subcontinent, Sri Lanka, Myanmar, S.E. Asia and Indonesia.

Habitat : Forests, villages, woodlands, wooded areas in cities, and deserted buildings.

Size : HBL : 7.6-11.3 cm. TL : 0.4-1.9 cm FA : 6.4-7.9 cm. Ear : 1.7-2.4 cm.

A frugivorous bat relatively small in size, fulvous olivaceous in colour and paler underside. Its characteristic features include, among others, naked ears with a narrow white margin and divergent nostrils.

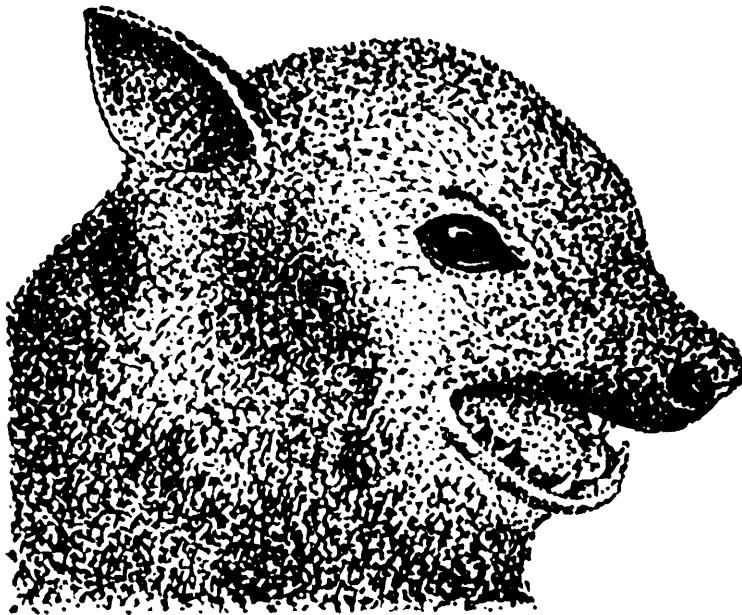


This bat roosts singly, in pairs or in small colonies on trees, palms and in deserted buildings. They are voracious feeders. They leave the roost in the evening in search of the much-preferred fruits like plantain, guava, mangoes etc. often carrying them to their roosts. They also sip honey from flowers. Its breeding habits are not well studied, probably breeding twice a year.

Status : Common. Of the two Indian races, the one found in Kerala is *Cynopterus sphinx sphinx*.

Distribution in Kerala : Throughout.

11. LESSER DOG-FACED FRUIT BAT

Cynopterus brachyotis (Muller)Mal. Name : *Shwanamukhan Vowval*

Range : Indian subcontinent, Sri Lanka to Southeast Asia, Indonesia and Philippines.

Habitat : Forests, Plantations and open countryside.

Size : HBL : 8-9.6 cm. TL : 0.2-1.3 cm. FA : 5.7-6.3 cm. Ear : 1.4-1.8 cm.

The species is similar to the Short-nosed Fruit bat, but, comparatively, slightly smaller in size, with shorter fore arms and smaller ear-pinnae. And, the phalanges of the fore limbs are also darker. This frugivorous bat becomes sexually mature in one year. Gestation period is 3 ½ to 4 months, and a single young one usually born.

Status : This is a common species in its other distributional ranges. The Subspecies represented in Kerala is *C. brachyotis ceylonensis*.

Distribution in Kerala : Silent Valley National Park.

FAMILY : EMBALLONURIDAE

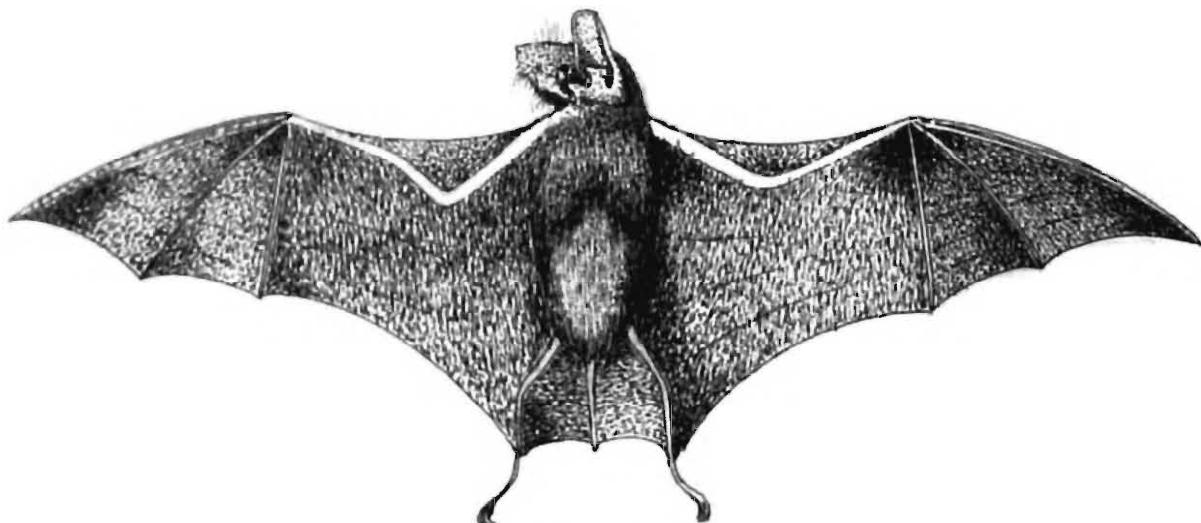
Sheath-tailed bats

This family includes 13 genera and 51 species distributed worldwide. In this group of bats, the uropatagium is well developed and the tail protrudes from the dorsal surface of this membrane. Wings are long and narrow. Ears are often joined together on the forehead. Tragus present. They mainly feed on insects. There are scent-producing glands on wings and elbows. Some are solitary; others live in small to large colonies.

12. BEARDED SHEATH-TAILED BAT OR BLACK BEARDED TOMB BAT

Taphozous melanopogon Temminck

Mal. Name : *Karinthadi vovval*



Range : India, Sri Lanka, Myanmar, Southern China, S.E. Asia and Indonesia.

Habitat : Cliffs and ruins in hilly and forested areas.

Size : HBL : 7.9 cm. TL : 2.5 cm. FA : 6.3-6.9 cm. Ear 1.6-2.2 cm.

This bat exhibits considerable variations in features associated with sex, age and seasons. Males are generally sandy yellowish grey in colour that becomes darker in summer. They grow a beard while attaining 5-6 months

of age. During the rut period, a secretion from the chin glands soaks the beard. Adult females are reddish brown in colour, and young ones dull dark grey. Its tail is somewhat thick, and slightly swollen at the tip.

Its diurnal roost is found in cliffs, ruins or old buildings preferring darker parts, and high ceilings. It roosts near the areas where water is available in plenty and lives in the same place throughout the year. The species is highly gregarious and the size of the colony varies from 150-4000 individuals. The colonizing population generally tolerates the presence of human beings. They cling to the walls of ceilings using all their four limbs. Sexual segregation among the colony members is not very strict, however males are seen more frequently on the periphery of the colony. They start hunting soon after sunset. Flight is swift. Insects form the main diet. This species lives in association with Indian Fulvous Fruit Bat, Indian Horseshoe Bat and Blyth's Horseshoe Bat etc.

Breeding period starts in January/February and parturition is in April/May. Usually a single offspring is born per female. Mother cares the young one carrying it in a lateral position under the wing. The young ones leave their mothers after attaining one month old. Subspecies represented in India is *Taphozous melanopogon melanopogon*.

Status : Common.

Distribution in Kerala : Thiruvananthapuram and Ernakulam districts.

13. LONG-WINGED TOMB BAT

Taphozous longimanus Hardwicke

Mal. Name : *Neelkaiyyan Vovval*

Range : India, Sri Lanka, Myanmar, South East Asia and Indonesia.

Habitat : Scrubs, ruined buildings, wells, caves etc.

Size : HBL : 7-9 cm. TL : 2-3.5 cm. FA : 5.5-5.9 cm. Wingspan : 25-33 cm.



***Taphozous longimanus* Hardwicke**

This is a small species of sheath-tailed bat. The tail enclosed in the interfemoral membrane through a perforation slips in and out of the membrane as from a sheath, hence the name sheath-tailed bat. Its fur is dark brown in colour, speckled with white, especially on the back. It has a shorter forearm, but the third metacarpal is long, equal to or exceeding the length of forearm. The gular sac is large in male. The nostrils that open forward have a narrow groove between them. This bat produces a strong noxious secretion from its gular sac.

The Long winged Tomb Bat lives in small colonies and roosts on walls of old buildings, wells, caves etc. It avoids the localities where the Bearded sheath-tailed Bat is present. Each individual hunts alone and the hunting territories are near the diurnal roosts. Unlike other bat species, Tomb Bats breed throughout the year. They do not hibernate.

Status : Fairly common. The only subspecies reported is *T. longimanus longimanus*.

Distribution in Kerala : Ernakulam district.

14. POUCH-BEARING BAT

***Taphozous saccolaimus* Temminck**

Mal. Name : *Gala sanchi Vowval*.

Range : India, Sri Lanka to South East Asia.

Habitat : Forests and Plantations.

Size : HBL : 8-9.3 cm. TL : 2.5-3.5 cm. FA : 6.3-7.2cm. Ear : 1.6-2 cm.

The Pouch bearing Bat is a medium sized, dark brown or almost black bat with a well-developed gular pouch. The gular pouch is smaller in male. Ventral part of the body is rufous brown in colour, and its pelage often mottled with white patches. The wing is long and narrow. The tail at the end bears about 10 hairs, each one about 1cm long. Ears are comparatively small. Lower lip has a deep narrow groove. The inter-femoral membrane and legs are quite naked. The pelage terminates, posteriorly, in a well-defined line limited by the root of the tail.

It roosts in hollow trees, roofs of buildings and rock crevices, and lives in small colonies of 5-6 individuals. Flight is very rapid, which is often in circles. Diet is mainly composed of termites, beetles and other insects.

Status : Though a widespread species, its exact population status in Kerala is yet to be ascertained.

Distribution in Kerala : Thrissur and Ernakulam districts.

Family MEGADERMATIDAE

False Vampire Bats

False Vampire Bats are included in 4 genera and 5 species with their distribution in Ethiopian, Oriental and Australian regions. They are the largest species of the insectivorous bats. Though primarily insectivorous, a few species occasionally feed on small bats and other small mammals, birds, reptiles, amphibians and fishes. The prominent features of this family are, long ears joined above the forehead, bifurcated tragus and a large erectile and fluted nose leaf. Tail is very short or absent. They live alone or in small groups.

15. LARGE EARED VAMPIRE BAT OR INDIAN FALSE VAMPIRE

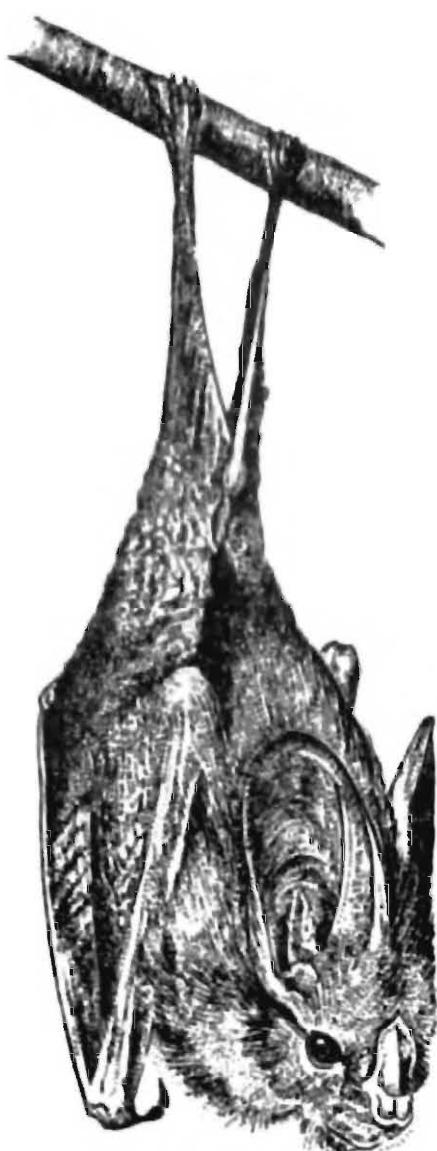
Megaderma lyra GeoffroyMal. Name : *Kapada Naricheer*

Range : Indian subcontinent, Sri Lanka, Afghanistan, S. China and S.E. Asia.

Habitat : Old buildings, Wells and Underground caves.

Size : HBL : 8.6 cm. TL : Absent. FA : 6.5-6.8 cm. Ear : 3.1-4.5 cm.

This bat can be identified by its big head, absence of tail, large rounded ears which are united for about one third of their length and the truncated appearance of the nose leaf. Tragus is two lobed and the anterior lobe pointed and twice as high as the posterior.



This gregarious, completely nocturnal bat is adapted to anthropoid biotope, and roosts in old buildings, caves, wells etc. They usually live in small colonies but larger colonies comprising of as many as 2000 individuals are also reported. Sexual segregation is not generally met with. They also live in association with other bats like Horseshoe bats. They start hunting after sunset. The hunting territory is

usually near the vicinity of the roost and they regularly come back to the roost to consume the captured prey or rest in a particular place in their hunting territory for that purpose. In addition to larger insects like moths, grasshoppers and beetles, they also prey upon frogs, birds, reptiles and small mammals like rodents and other small bats.

Breeding season starts in October/November, and young ones are born in the month of April. Mothers carry their young till they attain the size of the adults.

Status : Common. Among the two subspecies occurring in India, the one represented in Kerala is *Megaderma lyra lyra*.

Distribution in Kerala : Throughout.

16. MALAY FALSE VAMPIRE

***Megaderma spasma* Linnaeus**

Mal Name : *Kapada Naricheer*

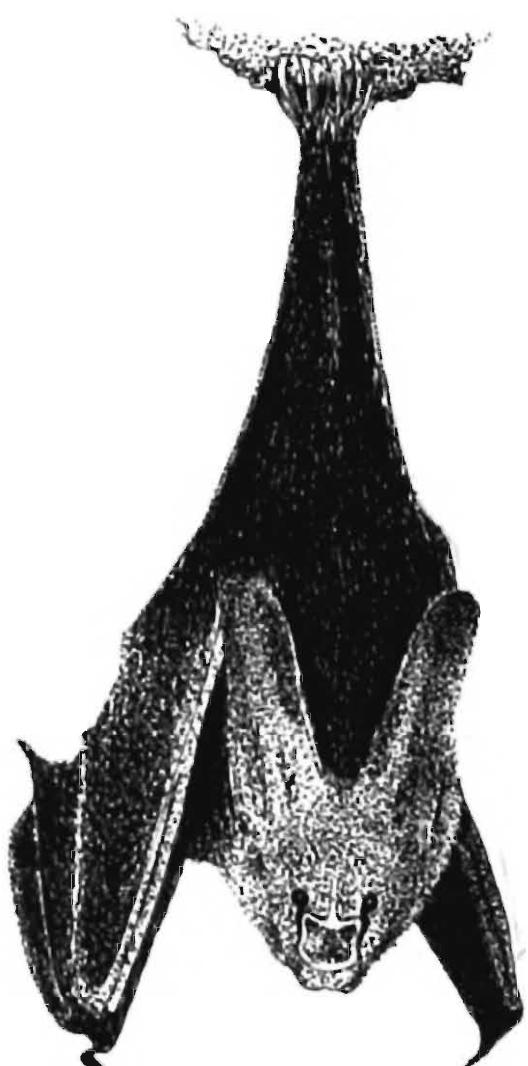
Range : India, Sri Lanka, Myanmar, S.E. Asia, Indonesia and Philippines.

Habitat : Caves in forested areas.

Size : HBL : 7.6 cm. TL : Absent.
FA : 5.7-6.1 cm. Ear : 3.3-4.0 cm.

This bat is similar to the Indian False Vampire but a little smaller. Shape of the nasal leaflets is distinctly different, being shorter with convex sides. The posterior position of the tragus is longer, more attenuated and more acutely pointed. The inter-femoral membrane is deeper. The general colour is like that of the Indian False Vampire.

This bat lives in small colonies of 4-27 individuals, occupying caves, old buildings, underground structures etc. in humid and forested areas. They are



strictly nocturnal coming out in about half an hour after sunset. They fly fast near the ground level. They feed mostly on large insects. This bat co-exists with other bats like Horseshoe bat, False Vampire bat, etc.

Breeding period is between December and June. Usually a single young one is born per female in the month of April/May/June. The young one becomes independent in about two months after birth; till then the mother carries the young, irrespective of its rapid increase in weight.

Status : Rare and localized. Subspecies found in Kerala is *Megaderma spasma spasma*.

Distribution in Kerala : Thrissur district.

Family RHINOLOPHIDAE
Horseshoe bats

This family includes 11 genera and 69 species distributed mostly in Old World tropics. A horseshoe shaped fleshy structure surrounding the nostrils is peculiar to this family. A complex nose leaf is present. Ears are moderately large and tragus is absent. Antitragus is well developed. Eyes are small. While roosting, they wrap their wings around their bodies. This behaviour is peculiar since other bats fold their wings to their sides while roosting. They often hunt near the ground.

17. FULVOUS LEAF-NOSED BAT/LITTLE HORSE-SHOE BAT

Hipposideros fulvus Gray

Mal. Name : *Thavidan Ila-moockan Vovval*

Range : India, Afghanistan, Myanmar and Sri Lanka.

Habitat : Arid regions to forests. Roosts in old buildings, caves, tunnels and open wells.

Size : HBL 4.5 cm. TL : 2.4-3.5 cm. FA : 3.8-4.4 cm. Ear : 1.9-2.6 cm.

This medium sized bat is similar to the Dusky Leaf-nosed Bat in many aspects. Body is short and thick. Muzzle is short. Ears are large and naked, with their tips broadly rounded off. Feet are small. Forearm is distinctly longer than that of the Dusky Leaf-nosed Bat. The color varies from dusky brown to light fawn, dull yellow, pale grey and golden orange. Wing membrane is blackish in colour.

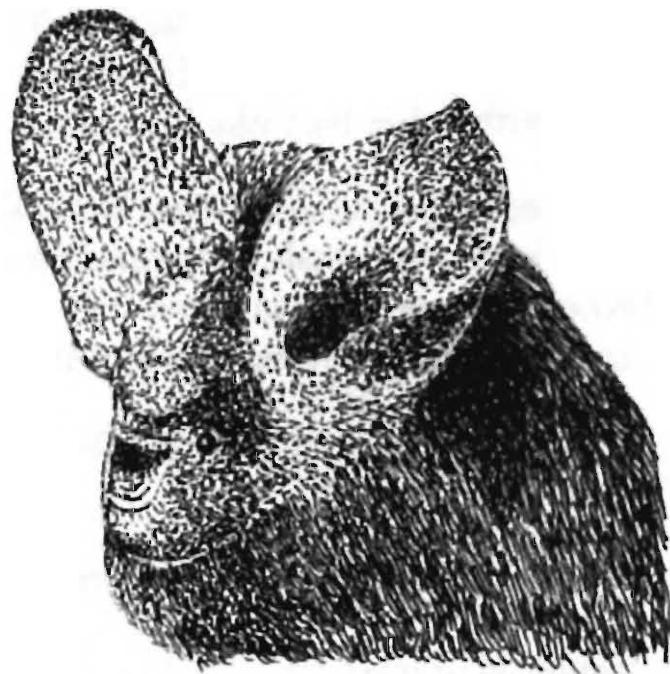
It lives in a variety of habitats ranging from dry plains to forests of higher elevations. Its diurnal roosts include damp places or areas of old buildings, caves, tunnels and open wells. The Indian Fulvous Fruit Bat, Rufous Horseshoe Bat, etc. share its roost. The colony size varies from a few members to as many as 200 individuals.

Their hunting territory is close to their diurnal roosts and they leave the roosts after sunset. They hunt in groups of 4-5 individuals and the roost is often revisited during hunting. Flight is slow. They feed on a variety of insects particularly, cockroaches and beetles.

Breeding season starts in November and gestation period lasts for 150-160 days. Female gives birth to a single young one and the mother carries the young one for about three weeks. Sexual maturity is attained in 1½ year. The subspecies present in Kerala is *Hipposideros fulvus fulvus*.

Status : Endemic to the Indian subcontinent except for a marginal population in Afghanistan.

Distribution in Kerala : Ernakulam district.



Hipposideros fulvus Gray

18. SCHNEIDER'S LEAF-NOSED BAT

Hipposideros speoris SchneiderMal. Name : *Kuthiraladam vorval*

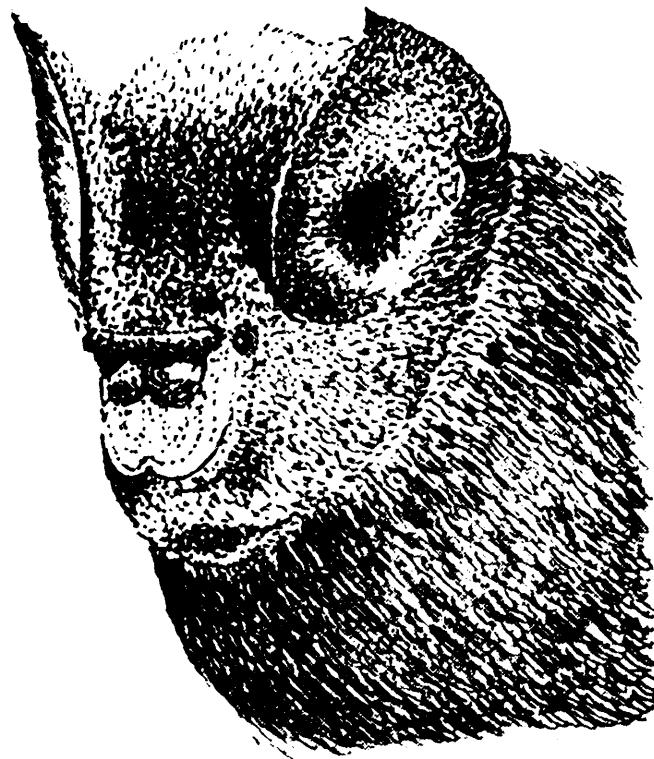
Range : Peninsular India, Sri Lanka, Borneo and Timor.

Habitat : Caves and old buildings near forests.

Size : HBL : 4.6-6.2 cm. TL : 2-2.9 cm. FA : 4.5-5.4 cm. Ear : 1.2-1.9 cm.

The genus *Hipposideros* that closely resembles the genus *Rhinolophus* can be distinguished from the latter by the structure of the nasal leaflets and in the absence of the notch that separates the antitragus from the outer margin of the ear. In addition, all the toes of *Hipposideros* are two jointed. In Schneider's Leaf-nosed bat, the muzzle is short, ears are large, erect, rounded at the base and pointed at the tip. There is a slight inward curvature to the outer margins of ears. Interfemoral membrane is narrow, enclosing the tail except at the tip. Pubis is naked with two warts on the groin region. The colour is mouse brown or fulvous brown above, and paler underside. The membrane is dusky brown.

This gregarious bat lives in colonies of about 20-1000 individuals, roosting in caves and old buildings. Individuals in the colony are closely placed. The hunting territory is close to their roosting places. They fly very low and feed mainly on insects. This bat often lives in association with the Bearded Sheath-tailed Bat and the Great Eastern Horseshoe Bat.



In the Schneider's Leaf-nosed Bat, the scrotum of the male grows considerably during the rut period. Only a single young one is born per female in the month of May. Young one, grey in colour, is carried in the pubic region of the mother in an inverted position, and gets separated from the mother after attaining 1 $\frac{1}{2}$ months old.

Status : Common.

Distribution in Kerala : Kozhikode and Ernakulam districts.

19. DUSKY LEAF-NOSED BAT

Hipposideros ater Templeton

Mal. Name : *Irulan Ilamooockan voraval*



Range : Indian subcontinent to South East Asia; Philippines to Australia.

Habitat : Lowland areas, caves, wells, holes in buildings and trees, deserted buildings, abandoned mines.

Size : HBL : 3.8-4.8 cm. TL : 2-3 cm. FA : 3.4-3.8 cm. Ear : 1.4-2 cm.

This small bat is similar to the Fulvous leaf nosed Bat, but differs from it by having shorter forearm and the smaller ears with broadly rounded off tips. Anti-tragus is well developed. Nose leaf is wide and its

anterior leaf without lateral leaflets or meridian emargination. Long tail is enclosed in the membrane, except at the tip. The pelage colour is variable from grey, yellow and orange to dark brown on the dorsal side. Ventral side is paler. The membrane is dark brown or black.

The bat lives in small colonies. Single sexed colonies are also reported. They are low fliers and the flight is moderately fast. They feed on beetles and other insects. Peak breeding period is between November and December. Gestation period is 120-140 days. Of the two races reported from India, the one present in Kerala is *H. ater ater*.

Status : A widespread species; not threatened.

Distribution in Kerala : Kozhikode, Thiruvananthapuram, Ernakulam, Thrissur and Alappuzha districts.

20. ANDERSEN'S LEAF-NOSED BAT

Hipposideros pomona Andersen

Mal. Name : *Ilamoockan Vowval*

Range : India, Myanmar, Southern China and South East Asia.

Habitat : Midlands to higher elevations.

Size : HBL : 3.6-5.2 cm. TL : 2.8-3.5 cm. FA : 3.8-4 cm.

This small bat is characterised by its large ears with tips broadly rounded off. The structure of nose leaf is almost similar to that of *H. ater*. Upper part of the body is brown and the ventral side paler. Wing membranes are uniformly dark brown. Structure of wings is similar to that of *H. fulvus*. The South Indian race is *H. pomona pomona*.

Status : It is an uncommon species in Kerala.

Distribution in Kerala : Thrissur and Alappuzha districts.

21. RUFOUS HORSESHOE BAT/GREAT INDIAN HORSESHOE BAT

Rhinolophus rouxii TemminckMal. Name : *Thavidan Kuthiraladam Vowval*.

Range : India, Nepal, Sri Lanka and Myanmar.

Habitat : Subterranean cavities in Forests.

Size : HBL : 4.2-6.6 cm.
TL : 2.2-3.3 cm. FA : 4.6-5.3 cm. Ear : 1.4-2.2 cm.

This is a medium sized bat with large pointed ears. The general colour is reddish brown above, and the ventral side paler. Tragus is broad. Tip of the upper nose leaf is triangular in shape with its sides emarginated reaching above the base of the ears. There are no upper incisors. Canines are very large. Only five lower molars are present.

This bat is found more restricted to forests having heavy rainfall. This is a common species of Western Ghats, roosting in caves, wells, hollows of trees, in small or large colonies. It is a nocturnal species, coming out of the roost after sunset. They fly low and the flight is slow. Moths, grasshoppers and other insects form the major diet of this species. Sexual segregation is met with. Males live in small colonies, while the females in large colonies. They share the roosting place with other bats like Blyth's Horseshoe Bat.

Only a single young one is born per female after a gestation period of 60-70 days. Sexual maturity is attained in one year.

Status : Common. Of the two races reported from India, the one occurring in Kerala is *R. rouxi rouxi*.

Distribution in Kerala : Thrissur and Ernakulam districts.



22. LESSER WOOLLY HORSESHOE BAT

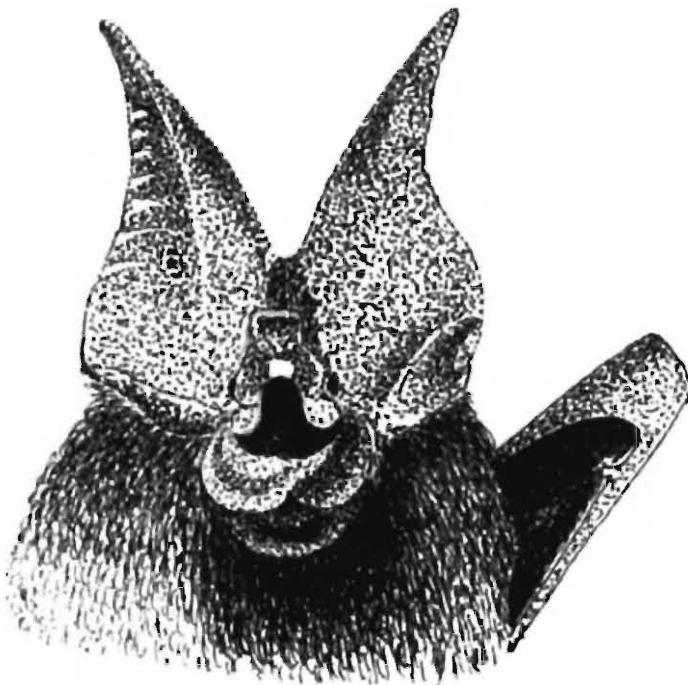
Rhinolophus beddomei AndersenMal. Name : *Kizhakkan kuthiraladam vorval**Range* : India and Sri Lanka.*Habitat* : Caves and old buildings in forests.*Size* : HBL : 6.5-7.5 cm. TL : 4.5-4.8 cm. FA : 5.5-6.4 cm. Ears : 2.8-3.4 cm.

This bat is almost similar to another species *R. luctus* reported from central and N.E. India with its long wooly and slightly curly fur having jet-black colour. Individual hairs are with ashy tips. This bat has big head and well developed nasal leaflets. Ears are large with pointed tips and the outer margin below the tip is emarginated. Anti-tragus is large and separated by a deep notch. Interfemoral membrane is large enclosing the tail.

This bat roosts alone, or in pairs, in caves in the mountains (600-800 m), and also in old buildings at elevated areas, near forests. This species does not form colonies. It is generally low flying, and comes out in the evenings. Its food includes beetles, termites and other insects. Very little information is available regarding its breeding habits. Young ones are believed to be born in the month of May.

Status : Rare. Population is small in the Western Ghats. Due to precise ecological requirements, they are localized in narrow areas.

Distribution in Kerala : Kannur, Wynad, Palakkad and Thrissur districts.



23. BLYTH'S HORSESHOE BAT

Rhinolophus lepidus Blyth

Mal Name : *Cherea Kuthiraladam vowel*

Range : India, Nepal, Myanmar, Southern China and Thailand.

Habitat : Caves, tunnels, ruins etc. near forested areas.

Size : HBL : 3.5-5.4 cm. TL : 1.4-2.8 cm. FA : 3.7-4.2 cm. Ear : 1.4-2.1 cm.

This bat is similar to the Rufous Horseshoe bat, but much smaller in size. Structure of nasal leaflet is also somewhat different. The colour varies from greyish brown to fawn. A pale grey variety is met with in Northern India.

Blyth's Horseshoe bat roosts in dark subterranean cavities, near forested areas. A few dozens to hundreds of individuals live in a colony. Sexual segregation is not very rigid as in Rufous Horseshoe bat. Unlike in other species of *Rhinolophus*, individuals of this species occur in closely packed colonies. The hunting territory is close to the roost. Insects form the major part of their diet. Only a single young one is born per female in the beginning of May. Of the two races in India, the one in Kerala is *Rhinolophus lepidus lepidus*.

Status : Uncommon.

Distribution in Kerala : Kozhikode, Kollam districts and Silent Valley National Park, Palakkad district.



24. LEAST HORSESHOE BAT

Rhinolophus pusillus TemminckMal. Name : *Cheru Kuthiraladam Vowval.**Range* : India, South East Asia.*Habitat* : Mountain habitats above 1000m.*Size* : HBL : 3.6 cm. TL : 2.0 cm. FA : 3.7 cm. Ear : 1.6 cm

This bat is small, significantly shorter than *R. lepidus*. The pelage is fine and soft, light brown to dark brown on the upper part, and paler on the ventral side. The metacarpal is almost equal to or exceeds the combined length of its respective phalanges. Tibiae are short. The base of the sella (median anterior projection of the nose leaf) has a broadly rounded outline and its inferior extremity does not project downwards. The subspecies represented in Kerala is *R. pusillus gracilis*.

Status : Uncommon.*Distribution in Kerala* : Ernakulam district.

Family MOLOSSIDAE

Free-tailed Bats or Mastiff Bats

Members of the family Molossidae are small to medium-sized insectivorous bats characterised by their rat like tails that extend well beyond the uropatagium. Wings are long, narrow and leathery. Head is large and broad in most species. Facial hairs are stiff with spoon like tips (called spoon hairs). Ears are thick, leathery, directed backwards and joined in the middle of fore head in most species. Lips are grooved and the nostrils located in nasal protuberances. Legs are with stiff hairs on toes. Fur is very short. The Free tailed bats mainly feed on hard-shelled insects. They roost solitarily or in large to very large colonies. 80 species belonging to 12 genera are reported the world over, of which a single species is known from Kerala.

25. EGYPTIAN FREE TAILED BAT OR WRINKLE-LIPPED BAT

Tadarida aegyptiaca (E. Geoffroy)Mal. Name : *Elivalan Vowval*

Range : West Africa, Egypt, Kenya, Saudi Arabia, Yemen, Oman to India and Sri Lanka.

Habitat : Scrublands – roosts in crevices of old buildings.

Size : HBL : 5.5-7 cm.
TL : 3-5cm. FA : 4.5-5.2cm.
Ear : 1.5-2.3 cm.

As the name indicates, the fleshy tail of this bat projects out of the uropatagium about half of its length. The body is heavy and wings narrow. Ears are separated on the fore head but joined on the front of the muzzle. The upper jaw is deeply wrinkled, hence the name Wrinkle-lipped Bat. The colour is dark brown but paler on the ventral surface. The feet are hairy and the wings naked.

The species forms colonies consisting of hundreds of noisy individuals roosting in crevices of buildings or rocks. They come out of their diurnal roosts after sunset and hunt far away from their roosts. Their diet includes termites, moths, butterflies, beetles, ants and other insects.

Mating takes place at the diurnal roost where fights among males are frequent. Usually a single young one is born in birth.

Status : This is a common and widespread species. The subspecies *T. aegyptiaca thomassi* is endemic to the Indian subcontinent, and common in its habitats.

Distribution in Kerala : Thrissur and Ernakulam districts.



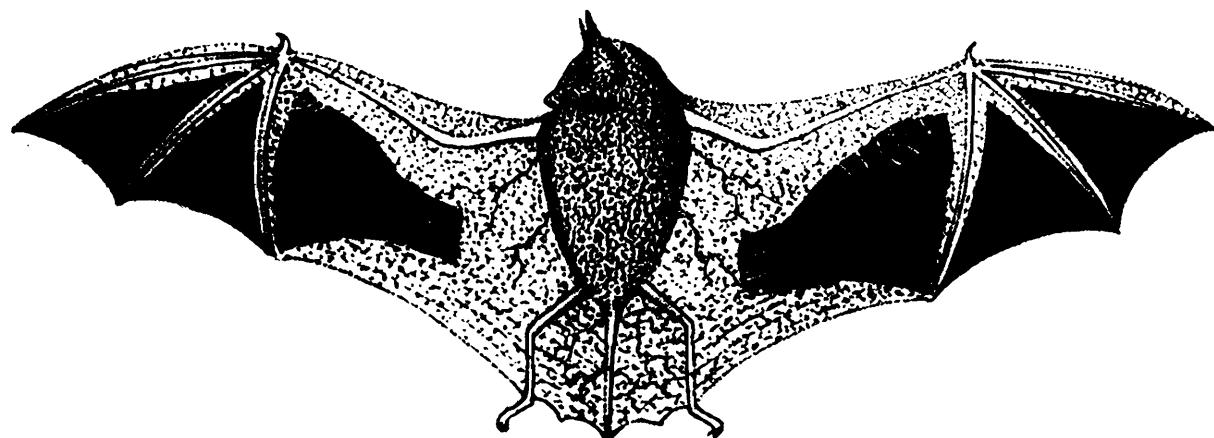
Family VESPERTILIONIDAE
Evening bats or Common bats

This is the largest family of bats comprising of 319 species in 42 genera, distributed worldwide. Almost all the species are insectivorous. They are mostly small in size, and a few medium to large. Most of the members lack nose leaf and when present in a few, it is very small. Tail extends to the end of uropatagium or slightly beyond it. Ears are normally separated, provided with tragus. Many species form large colonies, some live in small colonies and a few are solitary. All members of this family make use of echolocation for navigation to locate their prey. Many members hibernate in winter.

26. THE PAINTED BAT

Kerivoula picta (Pallas)

Mal. Name : *Chithra vourval*



Range : Indian subcontinent, S.E. Asia, Indonesia and Philippines.

Habitat : Forests, Wooded areas and plantations.

Size : HBL : 3.8-4.8 cm. TL : 4-4.8 cm. FA : 3.2-3.8 cm. Ear : 1.4-1.6 cm.

This bat is not uncommon in villages of Kerala. It readily catches the attention of the observer when sighted because of its brilliant coloration

and moth-like flight. Wing membrane is black with orange stripes. The fine fur is wooly in texture and orange in colour. Ears are funnel shaped and orange in colour. Interfemoral membrane (uropatagium) is bright and orange coloured. Tragus is very long and straight.

This bat is often seen in plantain groves, roosting on dry leaves, its colour somewhat matching with the surroundings. Not much is known about the habits of this animal. The subspecies found in the Indian subcontinent is *Kerivoula picta picta*.

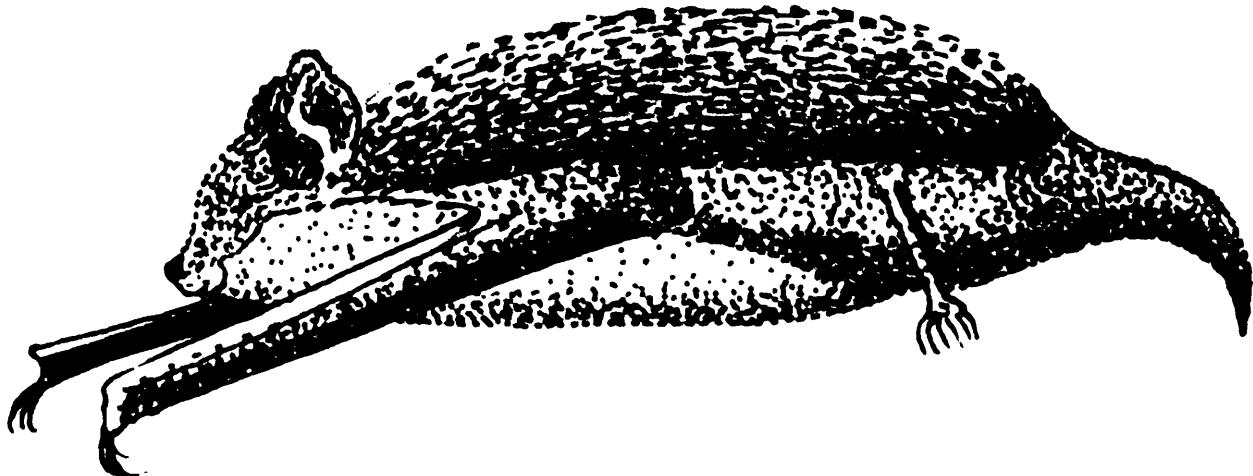
Status : Not very common.

Distribution in Kerala : Thrissur, Kannur, Kozhikode, Kasaragod and Kottayam districts.

27 KELAART'S PIPISTRELLE

Pipistrellus ceylonicus (Kelaart)

Mal. Name : *Adakkavathil*



Range : Indian subcontinent, S. E. Asia and Indonesia.

Habitat : Caves, old buildings and holes in trees.

Size : HBL : 4.5-6.4 cm. TL : 3-4.5 cm. FA : 3.3-4.2 cm. Ear : 0.9-1.4 cm.

Compared to other *pipistrellus* bats, this species is relatively large in size and shows considerable colour variation ranging from grey to brown or rufous. Deep brown and bright red specimens are also not rare.

This bat roosts in holes, cracks, crevices, caves and old buildings. Holes in trees are also preferred. This species is not strictly territorial and it moves from place to place where food is available in plenty.

One or two young ones are born in the month of October. The sub species occurring in Kerala is *Pipistrellus ceylonicus indicus*.

Status : Common.

Distribution in Kerala : Wynad and Thrissur districts.

28. LEAST PIPISTRELLE OR INDIAN PYGMY BAT

Pipistrellus tenuis (Temminck)

Mal. Name : *Cheru Adackavathil*

Range : Afghanistan, Pakistan, India, Sri Lanka to Vietnam and Thailand

Habitat : Woodlands and deserts. Diurnal roosts include roof of buildings, holes and crevices on walls, hollows of trees and among dead leaves of trees.

Size : HBL : 3.3-4.5 cm. TL : 2-3.5 cm. FA : 0.3-0.7 cm. Ear : 0.5-1.5 cm. Wt : 2 gm.



This is the smallest species of the genus *Pipistrellus* in India. Upper side of the body is brown and the ventral side slightly paler. The naked

membrane and the face are dark. Slight colour variation is seen among individuals from the same area. The erratic fluttering flight of the species is characteristic.

This colonizing bat is seen in wooded areas and the colony size varies from 6 to 20 individuals. Males and females live together in a colony. It feeds on various insects like ants, beetles, termites, moths, crickets, etc.

This bat breeds throughout the year and apparently has two peak breeding periods in different parts of the country.

Status : The endemic subspecies of India *P. tenius mimus* is a common bat.

Distribution in Kerala : Thrissur and Ernakulam districts.

29. CHOCOLATE PIPISTRELLE

Pipistrellus affinis (Dobson)

Mal. Name : *Thavidan Adackavathil*

Range : India, Sri Lanka, Nepal, Tibet and Myanmar.

Habitat : Roosts in holes or cracks on tree trunks and roofs of buildings.

Size : HBL : 4.3-5.1 cm. TL : 3-4.1 cm. FA : 3.8-4.1 cm. Ear : 1.2-1.5 cm.

This large species of *Pipistrellus* is characterized by its dark brown and dense pelage that is soft and long. Ventral side is slightly paler. The membrane, ears and face are brownish black.

Status : Locally common.

Distribution in Kerala : Wynad district.

30. DORMER'S BAT

Pipistrellus dormeri DobsonMal. Name : *Adackavathil***Range :** India and Pakistan.**Habitat :** Close to human habitations. Roosts in holes, crevices, roofs of buildings, and holes on large trees.**Size :** HBL : 3.9-5.5 cm. TL : 2.7-4.1 cm. FA : 3.2-3.6 cm. Ear : 1.0-1.8 cm. Wt. : 6-7 gm. (Male).

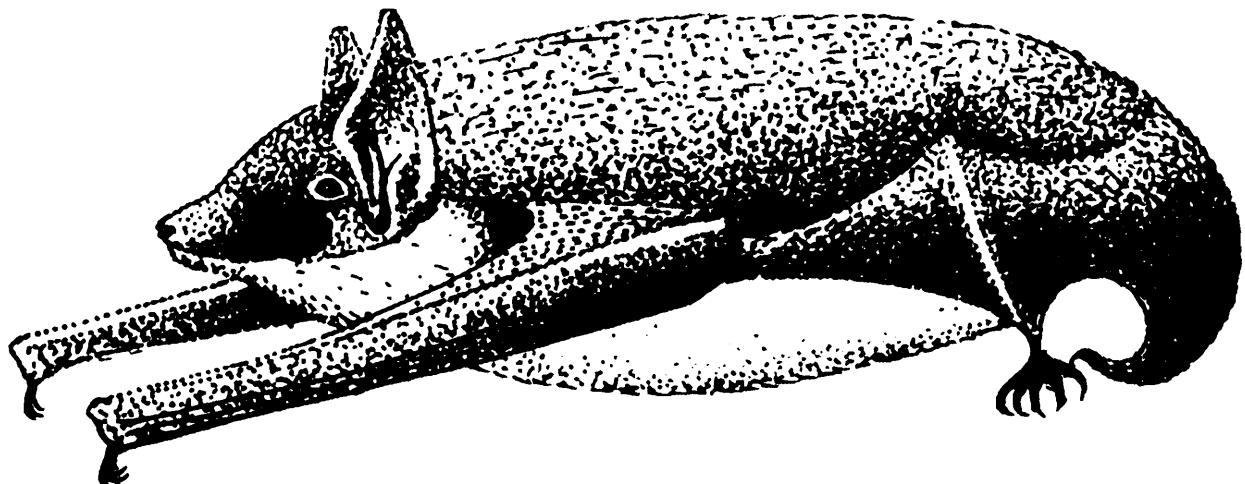
This medium sized Pipistrelle is grey above and white below in colour. The ears, face and membrane are light brown. Wings and interfemoral membrane are without hairs. A single incisor of large size appears in the upper jaw. Penis is large.

This gregarious species roosts in holes and crevices of old and deserted buildings, and holes of large trees. Roost size varies from 2 to 24 individuals. Solitary individuals are also seen. It flies with rapid wing beats, interspersed with steady glides. It feeds on moths, beetles, grasshoppers, termites and other insects. Seasonal variation in diet is observed. It breeds more than once in a year.

Status : Common.**Distribution in Kerala :** Thrissur district.

31. ASIATIC GREATER YELLOW HOUSE BAT

Scotophilus heathii HorsfieldMal. Name : *Mannha Vowval***Range :** Afghanistan, Indian subcontinent, Southern China and South East Asia.**Habitat :** Forests, Woodlands, Plantations and other cultivated lands in lowlying areas to high hills. Diurnal roosts include holes and crevices in buildings, roofs of houses, hollow Banyan trees, leaves of palm trees, etc.



Scotophilus heathii Horsefield

Size : HBL : 6.7-9.3 cm. TL : 4.3-7.1 cm. FA : 5.5-6.6 cm. Ear : 1.3-2.0 cm.

This robust bat is characterised by its broad and blunt muzzle, short ears and long tail which is free at its extreme tip. A distinct notch separates the well-formed anti-tragus. The crescent shaped tragus has half the length of the pinna. Colour of the body is variable, the upper part dark olive brown, and the ventral side pale yellow-buff to canary yellow. Membrane is naked and dark brown in colour.

The size of the colony varies from a single individual to 50 individuals. Males are solitary. Males and females are having separate roosting places except during the breeding season. This low flying bat mainly feeds on insects. Breeding starts in November-December and the female gives birth to one or two young ones in April-May, after a gestation period of about 115 days. Sexual maturity is attained in one year.

Status : Common.

Distribution in Kerala : Thiruvananthapuram, Ernakulam and Thrissur districts.

32. COMMON YELLOW BAT/ASIATIC LESSER YELLOW HOUSE BAT

Scotophilus kuhlii LeachMal. Name : *Cheru mannha Vorval*

Range : India, Sri Lanka, Pakistan, Myanmar, China and South East Asia.

Habitat : Forests, villages, towns. Roosts on buildings, tree hollows and crevices and among dry leaves of trees.

Size : HBL : 6-7.8 cm. TL : 4-6.5 cm. FA : 4.4-5.6 cm. Ear : 0.9-1.7 cm.

This bat is almost similar to the Asiatic Greater yellow House Bat, but distinctly smaller in all measurements. Colour is chestnut brown above and paler below. The characteristic yellow tinge of under parts of the Greater Yellow Bat is absent in the Common Yellow Bat.

Range of habitation of this species overlaps with that of the former, from sea level to higher elevations even beyond 1000 m. This colonizing species roosts in houses, temples, caves, hollows on palm trees, etc. Both sexes roost together and the colony size ranges from a few to hundreds of individuals. They mainly feed on termites and other insects. Breeding period is between March and July. The subspecies represented in Kerala is *S. kuhlii kuhlii*.

Status : This widespread species is common in most of its range but its exact distributional status is yet to be ascertained in Kerala.

Distribution in Kerala : Palakkad district.

33. BAMBOO BAT/FLAT-HEADED BAT/CLUB -FOOTED BAT

Tylonycteris pachypus (Temminck)Mal. Name : *Chattithalayan Vorval*

Range : India, S. China, Myanmar, South East Asia and Philippines.

Habitat : Tropical forests. Roosts mostly among bamboos.



Tylonycteris pachypus (Temminck)

Size : HBL : 3.4-4.6 cm. TL : 2.2-2.6 cm. FA : 2.4-2.9 cm. Ear : 0.9-1 cm.

This is a very small bat characterized by the golden rufous colour of its fur. Wings are short. This bat is often called Club-footed Bat as the sole of the foot of this animal is expanded

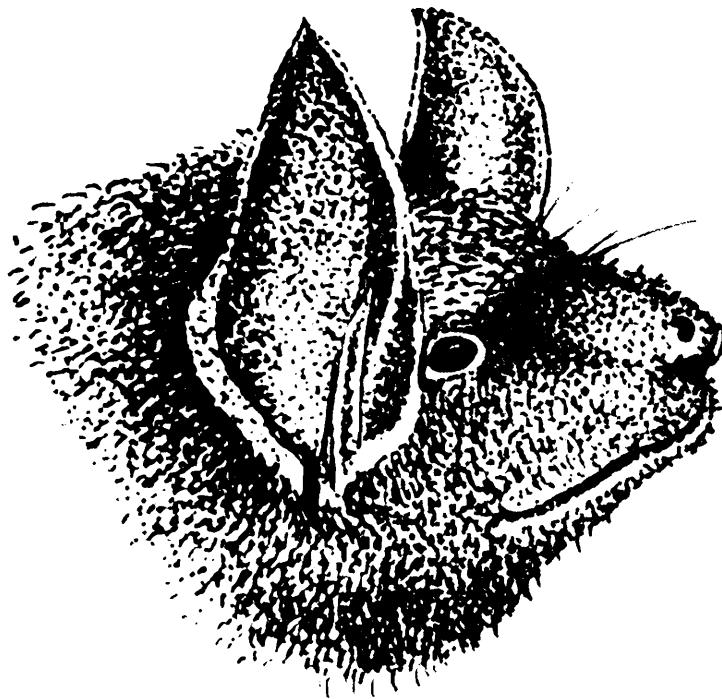
into a fleshy pad which helps them in moving up and down smooth surface of the bamboo. It is also called Flat-headed Bat as the head is flattened in shape. The nostrils project forwards and slightly downward. Triangular ears are rounded at the tips. Wing membrane and inter femoral membrane are dark brown. Belly is slightly darker.

This bat lives in thick forests and mostly roosts in bamboo thickets in groups of 10-20 individuals. The food and feeding behaviour of the species is little studied. It hunts at canopy level or just below it. The biology of this species is less worked out. Normally 2 young ones are born in a litter.

Status : Though it is locally common in most of its range, sufficient data is not available on its distribution in Kerala.

Distribution in Kerala : Thrissur district.

34. HORSFIELD'S BAT

Myotis horsfieldii (Temminck)Mal. Name : *Cherian vourval*

Range : Indian sub-continent.

Habitat : Forest areas.

Size : HBL : 4.9-5.9 cm. TL : 3.4-4.2 cm. FA : 3.6-4.2 cm. Ear : 1.3-1.5 cm.

Members of the genus *Myotis* are characterized by having large ears, moderately long and sickle shaped tragus, elongate nostrils,

pendulous upper lip and the presence of a distinct hairy band below the interfemoral membrane. In Horsefield's bat, coat is wooly, with colour dorsally brown and ventrally light rufous brown. Muzzle, jaws and ears are dark or almost black.

Not much information is available about the biology of this bat. The subspecies represented in Kerala is *M. h. peshwa*, which is slightly larger than the other race, *M. h. dryas*.

Status : Rare.

Distribution in Kerala : Kozhikode district and Silent Valley National Park, Palakkad district.

35. BURMESE WHISKERED BAT

Myotis montivagus (Dobson)Mal. Name : *Chevian vowel**Range* : India, Myanmar, China, Malaysia and Indonesia.*Habitat* : Forest areas.*Size* : HBL : 5.6-6.2 cm. TL : 4.2-4.8 cm. FA : 4.4-4.7 cm.

The subspecies of the Burmese Whiskered bat represented in South India is *Myotis montivagus peytoni*, which is relatively larger than the other subspecies (*M. montivagus montivagus*) represented in other distributional ranges. The colour of short and soft pelage on dorsal part is dark brown, the individual hairs having black base and brown tips. Hairs on ventral side are with dark bases and pale brown tips. The face is densely covered with hairs. The ears are short and bluntly pointed. The tragus is very short, nearly half the length of pinna. The membranes are without hairs and dark brown in colour. The wings are attached to the base of outer phalanx of each foot.

This bat lives in rocky crevices of mountains of medium or higher elevations. The general habits of this animal are not well studied.

Status : Uncommon. *M. montivagus* is included in list 3 "Lower risk near threatened" category in the IUCN Red list of threatened animals. Though widespread in its distributional range, the distribution and abundance of the species *M. m. peytoni* in south India is yet to be ascertained.

Distribution in Kerala : Kozhikode district.

36. HAIRY WINGED BAT

Harpioccephalus harpia (Temminck)Mal. Name : *Romachirakan vowel**Range* : Indian subcontinent to S.E. Asia, Vietnam and Indonesia.*Habitat* : Hilly forests.

Size : HBL : 6-7.6 cm. TL : 4.0-5.0 cm. FA : 4.4-5.0 cm.

This bat is characteristic for its long, soft and silky fur, a few of which are scattered over its wing membrane and projected from its edge. Legs and uropatagium are also furred. Coat colour on the back is reddish brown, and on the ventral side paler. Head, neck and shoulders brownish grey with scattered white hairs. Throat and breast are very pale. Muzzle is short. Nostrils separately project beyond the lip. Ears are ovoid, and the tragus is long. Teeth are very stout and strong.

This species with its strong teeth is adapted to eat hard-shelled beetles. Its biology is not sufficiently known. The subspecies represented in Kerala is *Harpiocephalus harpia madrassius*.

Status : Unknown.

Distribution in Kerala : Silent Valley National Park, Palakkad district.

Order PRIMATES

Lemurs, Tarsiers*, Lorises, Monkeys, Apes**, Man

Primates stand out from other groups of mammals in their superior development of brain and intelligence. They are primarily arboreal animals and their hands and feet are adapted to the arboreal mode of life (long digits and the thumb, and big toe are opposable to the other digits). Digits are provided with flattened nails. Body is hairy, except at palms, soles and parts of the face. Mode of walking is plantigrade. Orbita are directed forward and surrounded by bones. Testes are enclosed in scrotum, and penis is pendant. Two mammae, which are pectoral in position, are usually present. Usually a single, rarely two or more, young one is produced, and the young one is suckled for a considerable period of time.

*Not represented in India.

** Represented in India but not in Kerala.

Family LORIDAE

Bush babies*, Pottos* and Loris es belong to this family. There are 10 species in 5 genera distributed in Africa and Asia. They are small, exclusively nocturnal and arboreal primates characterized by the short muzzle, large and forwardly directed eyes, and long hind limbs. The presence of "tooth comb", formed by the 4 lower incisors and 2 canines, is characteristic of the family. Only one species is present in Kerala.

*Not represented in India.

37. SLENDER LORIS

Loris lydekkerianus (Linnaeus)

Mal Name : *Theranku, Kuttithevangu, Kuttisrangu, Mottan kunju*

Range : South India (Andhra Pradesh, Tamil Nadu, Karnataka, Kerala) and Sri Lanka.

Habitat : Evergreen, Semi evergreen and deciduous forests, open woodlands, and swamp forests.

Size : HBL : 20-25 cm. Wt : Male : 0.3 Kg. Female : 0.2 Kg.



This is a small, arboreal, nocturnal primate without a tail, having the size of a kitten. Body is hairy and the colour varies from grey to brown with paler underside. Head is rounded with large, round eyes encircled with brown colour. Ears are large. Limbs are long and slender.

This secretive and slow moving animal is nocturnal, and hence rarely sighted. It dwells in singles or in pairs, mostly on treetops, but may come

down to bushes to feed. In addition to the plant food (leaves, buds, fruits, etc.), it also feeds on insects, lizards, birds and rodents. The animal captures its prey with a quick grasp using both hands. When irritated, they screech, chatter or growl.

They breed twice in a year during April-May and October-November. One or two young ones are born after a gestation period of about 160-174 days. Young ones are seen with the mother suckling, even after they are half grown.

Status : Once fairly common in its range, but the animal has suffered much recently. Superstitious belief on the medicinal value of its eyes and flesh led to the indiscriminate hunting of this animal. Like many other wild species, Habitat destruction has also taken a heavy toll of this animal. And also, it is an experimental animal used in bio-medical research. This animal is placed in Schedule. I, of the Indian Wildlife (Protection) Act, 1972. The subspecies found in Kerala is *Loris lydekkerianus malabaricus*, which is mostly restricted to Wildlife sanctuaries.

Distribution in Kerala : Throughout the forest tracts.

Family CERCOPITHECIDAE

Old World Monkeys

This family includes 76 species distributed in Africa and Asia. Macaques, Langurs, Baboons*, Mangabeys*, Guenons*, Colobus Monkey* and Leaf Monkeys** belong to this family. Old World Monkeys are generally larger than the New World Monkeys and have often brightly coloured bare buttock pads. Tail is long but not prehensile. In Cercopithecidae, muzzle is long. Arms and legs are nearly equal in length. Canines are large and suited for leading an omnivorous life. They are diurnal and mostly arboreal in habit. They live in troops.

* Not represented in India.

** Represented in India, but not in Kerala.

38. BONNET MACAQUE

Macaca radiata (Geoffroy)Mal. Name : *Nadan Kurangu, Vella Kurangu, Vella manthi, Mochan.*

Range : South India
 (Maharashtra, Gujarat, Andhra
 Pradesh, Karnataka, Kerala,
 Tamil Nadu).

Habitat : Deciduous
 forests, scrub Jungles,
 cultivated and suburban areas,
 sacred groves and village
 surroundings.

Size : HBL : 30-60 cm. TL
 : 48-65 cm. Wt : Male : 6-9
 Kg, Female : 3-4Kg.

This medium sized monkey is often seen in the vicinities of temples and sacred groves, and seldom disturbed in these places due to religious faith. In villages, showmen often take this animal to show tricks to the public. The unruly cap of dark hairs on its forehead gave it the name, bonnet monkey. Tail is long. The coat colour is buffy-grey with yellowish tinge on shoulders, and belly yellowish white. Colour is variable among individuals of different regions. Face is normally pale pink. Like many other monkey species, it is gregarious, living in troops of 30 or more individuals inclusive of both the sexes of different age groups. The animal is territorial, and a male dominated hierarchy marks social life. The animal is omnivorous, feeding on leaves, shoots, fruits, berries, insects, grubs, spiders, etc. In the temple premises, it takes most of the items offered by devotees. Cooked rice is given to them in many temples.



They breed throughout the year. Young ones, normally one, sometimes two, are born after a gestation period of 150 days. Young ones are very playful and attain maturity in 3-4 years. Life span is about 15-20 years. The race found in Kerala is *Macaca radiata diluta*.

Status : Formerly an abundant species in both forests and villages, but now its occurrence is restricted to forests, sacred groves and temples, only rarely in villages. Since they cause destruction to cultivation, in many areas villagers kill them. Showmen and others capture young ones. They are also widely used for medical and other experimental purposes, as test specimens. The species is placed in Schedule II of Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Throughout.

39. LION TAILED MACAQUE

Macaca silenus (Linnaeus)

Mal. Name : *Simhavalan Kurangu, Shinglam, Nella Manthi*.

Range : South India (Kerala, Tamil Nadu and Karnataka).

Habitat : Dense evergreen forests and semi evergreen forests.

Size : HBL : 50-61 cm. TL : 25-38 cm. Wt : 6.8 Kg.

Its glossy black coat, mane of brownish grey hairs around the face and its tufted tail, characterize this macaque. This macaque is seen in thick forests, at an altitude of 600-1300m. Like most other monkeys, it is gregarious and the troop may consist of 12-30 animals. Being mostly arboreal, it seldom comes to the ground. The monkey feeds on leaves, bark of trees, moss, mushrooms, insects, snails, larvae, buds, fruits, etc. The fruits of *Cullinia exulsa* form an important moiety of its diet.

The breeding season starts in January, and usually a single young one is born after a gestation period of six months. Life span is about 30-35 years.

Status : This monkey was a focal point of attention during the people's agitation against commissioning of the Silent Valley Hydroelectric Project in the 1970s. Because, its largest population thrives in Silent valley. Loss of Habitatis the main threat to its survival. This animal is also persecuted for its alleged aphrodisiac and other medicinal properties. It is also susceptible to the Kyasanur monkey disease. The species is placed in Schedule I of the Indian Wildlife (Protection) Act, 1972. About 4000 individuals live in the wild.

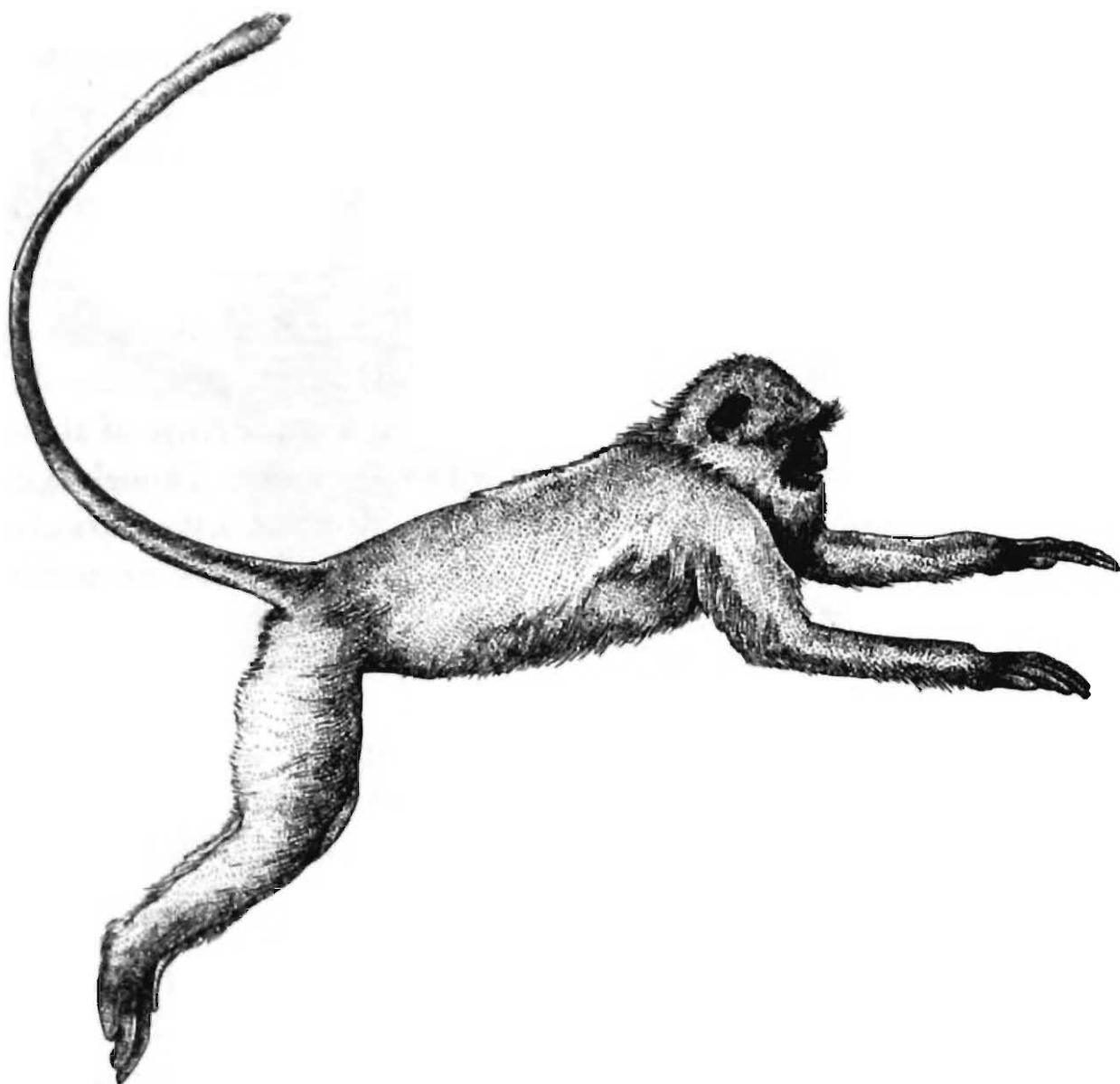
Distribution in Kerala : Aralam, Parambikulam, Chenthuruni, Peppara and Neyyar wildlife sanctuaries; Silent Valley and Eravikulam National Parks and Periyar Tiger Reserve.



40. COMMON LANGUR/ HANUMAN MONKEY

Semnopithecus entellus (Dufresne)

Mal. Name : *Hanuman Kurangu*



Range : India, Sri Lanka, Nepal and Southern Tibet.

Habitat : Dry forests, scrubs and rocky areas.

Size : HBL : 51cm-100 cm. TL : 72-100 cm. Wt : 9-21 Kg.

This langur, seen throughout India, is having about fourteen or, probably, more races. This is the largest langur found in Kerala. Its large size, slender body, long limbs and tail, prominent eyebrows and the coat colour characterize the species. The coat colour varies from white to moderate black. The Kerala race is ashy or grey, darker on the shoulders, sides and rump, but paler or white underneath. Face, hands and feet are black. In north India, they are seen in villages, towns and forests where they are not disturbed due to religious faith. In Kerala, they are mostly confined to the forested areas.

This gregarious langur lives in troops of 18-25 individuals consisting of both the sexes of all age groups. All male and female groups are also reported. The troop is generally peaceful having a home range of about 1-13 sq. km. Dominance is seldom marked by aggression. Though agile climbers, they can also run fast on the ground. Members make particular calls on the approach of predators like tiger or leopard. They are mostly vegetarians, feeding on grains, fruits, legumes, flowers, buds, shoots and leaves.

Young ones, one or rarely two, are born in the month of January or February, after a gestation period of six months. Young one becomes sexually mature in 3 - 3.5 years. Races present in Kerala are, *S. entellus anchises* and *S. entellus hypoleucus*.

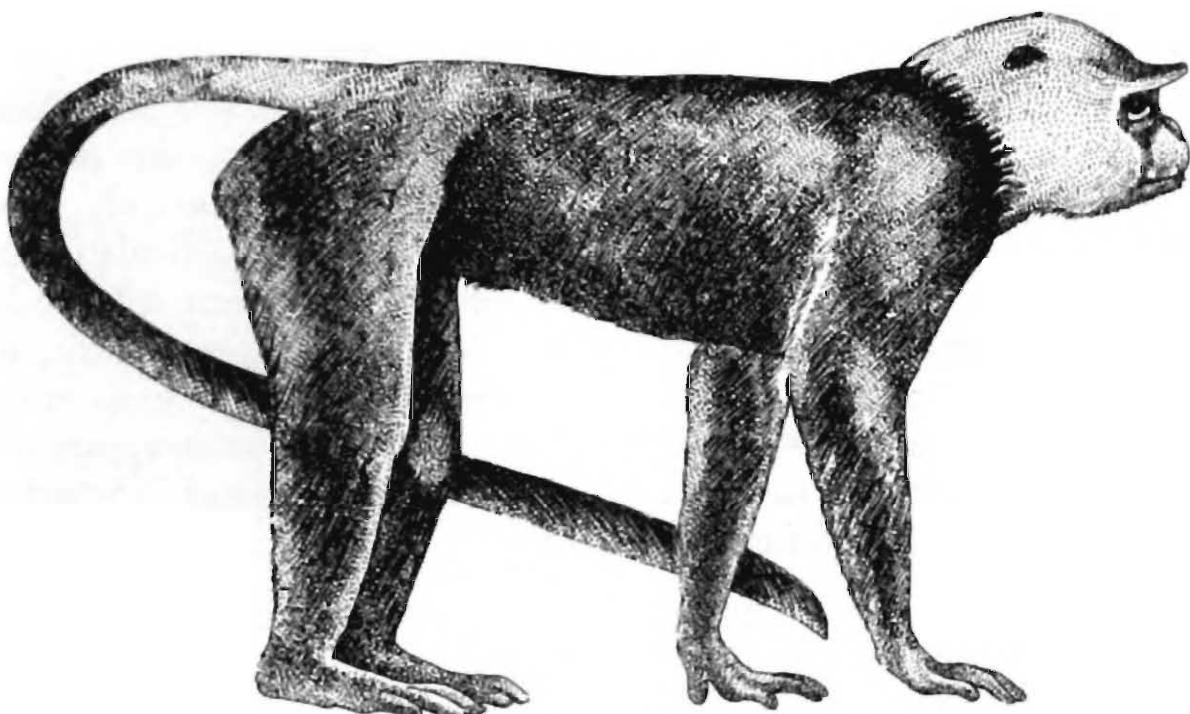
Status : This is a fairly common monkey of the North India. Due to religious faith, there is no immediate threat to its survival. In Kerala, its population is not so numerous, and mostly confined to the forested areas only. It is placed in Schedule II of Indian Wildlife (Protection) Act of 1972.

Distribution in Kerala : Chinnar, Wayanad, Aralam and Parambikulam Wildlife Sanctuaries. Silent Valley National Park and Nilambur areas.

41. NILGIRI LANGUR/JOHN'S LANGUR/SOUTH-INDIAN LEAF MONKEY/LONG TAILED MONKEY

Trachypithecus johnii (Fischer)

Mal. Name : *Karimkurungu/Karimanthi*



Range : South India (Kerala, Karnataka and Tamil Nadu).

Habitat : Moist evergreen, semi evergreen and moist deciduous forests.

Size : HBL : 80 cm. TL : 75-90 cm. Wt : 11-14 Kg.

This black monkey is only seen in south Indian hill forests. The general body colour is glossy black or blackish or yellowish brown. Head is yellowish brown. Face, palms and feet are black. Female has a white patch of hairs between the thighs; in males, this area is black. This monkey is highly agile, lives in troops of 3-25 individuals, possessing a home range of 0.65-2.6 sq. km. The extent of home range may vary with group size, because members of the group, some times, organize into sub groups based on sex and age. Dominance is seen, but fights are rare. Dominant

hierarchy is well defined in females also. Auto grooming and allo grooming are seen, but adults rarely groom young ones. Grooming is more frequent in the afternoon. The diet includes seeds, fruits, leaves and shoots. The monkey-troop, some times, invades cardamom and other plantations near forests. They also eat insects, occasionally. Young ones are born in the month of June.

Status : Endemic to Southern Western Ghats. Lower Risk-Near Threatened species. Hunting for its fur and flesh and destruction of their natural habitats have decreased the number of this animal drastically. Flesh of this animal is an ingredient in many local medicines, particularly, the "Karingurangu Rasayana"—a local decoction allegedly having aphrodisiac properties. Human settlements near forests, hydroelectric projects, etc., are other threats to its survival. This animal species is present in most of the wildlife sanctuaries of Kerala. However, its population is apparently declining. It is the only langur endemic to India and is placed in Schedule I of the Wildlife (Protection) Act, 1972.

Distribution in Kerala : Protected areas and other evergreen forest tracts.

Order CARNIVORA

Carnivores include Cats, Dogs, Bears, Raccoons*, Weasels**, Civets and Mongooses. They are one of the most widely distributed groups of mammals seen in most types of terrestrial habitats. Some are also adapted to aquatic conditions. Carnivores are primarily meat eaters but many got adapted to omnivorous and even largely to vegetarian diets. There are 231 species under 93 genera in 7 families worldwide. The presence of 4 carnassial teeth (for flesh eating) and the elongated bony structure of penis (baculum or os-penis) are characteristic to carnivores. Many members of the order are social animals so that their members cooperate effectively in hunting, protecting the territory and caring their young ones. Sense organs are highly developed. They occupy the top of the food chain, hence their presence indicates the health and quality of the ecosystem.

*Represented in India.

** Represented in India, but not in Kerala.

Family CANIDAE

The Dog family

Canidae includes Dogs, Wild Dogs, Wolves**, Jackals, Foxes and Coyotes*. There are 35 species under 10 genera distributed worldwide. The characteristic features of the family are muscular, long legged body; long, bushy tail; pointed muzzle; large, triangular erect ears; and digitigrade feet tipped with non-retractile claws. There are 5 toes on the fore feet and 4 on the hind feet. They are excellent runners and pursue their prey for long distances. Many live in close-knit packs of 5-30 individuals. This social behaviour enables them to kill even larger prey. Hanging or knotting for long time during mating is characteristic of the family.

* Not represented in India.

** Represented in India, but no authentic record for Kerala.

42. THE JACKAL

Canis aureus Linnaeus

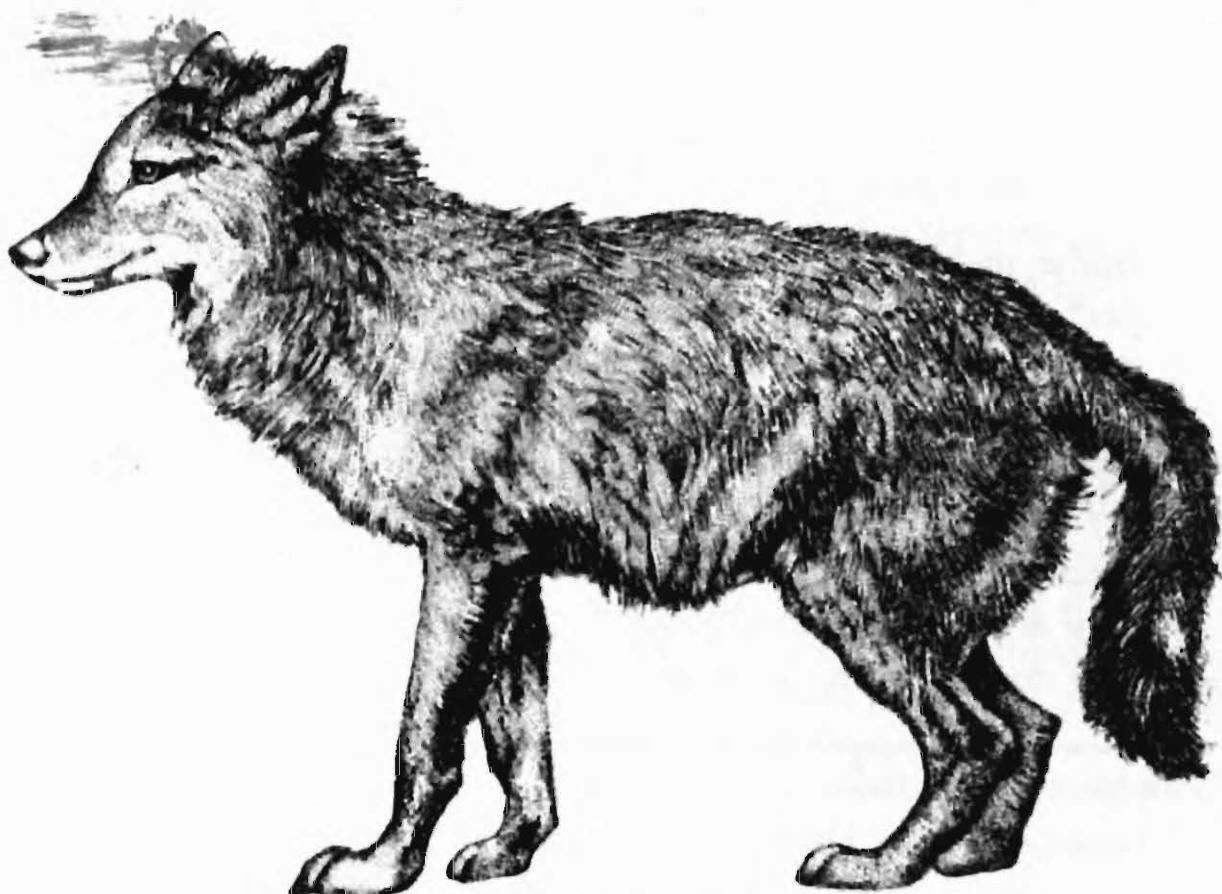
Mal. Name : *Kurunari, Oolan.*

Range : S.E. Europe, N.E. Africa, Middle East, and Central Asia to Indian Subcontinent East to Thailand.

Habitat : Deciduous forests, Scrub jungles, Grasslands, Open plains and deserts.

Size : HBL : 60-75 cm. TL : 20-27 cm. Ht : 40-45 cm. Wt : 08-11 Kg.

Slightly smaller than a domestic dog, this nocturnal animal is seen in forests, villages as well as in city suburbs. People are more familiar with its howling call at night. Coat colour is variegated with black and white on upper side, and paler on under parts. Tail is somewhat bushy and pendant, but does not touch the ground. This well adapted animal is an



Canis aureus Linnaeus

omnivore feeding on fruits, berries, insects, crabs, birds, small mammals, carrion, etc. In many areas, rodents form its major food. In undisturbed areas, it can be seen during daytime also. It breeds throughout the year. Den may be burrows, pits and crevices. The animal is notorious for its cunningness and its habit of stealing poultry. It can be tamed. This animal contracts rabies.

Domestic dog (*Canis familiaris*) belongs to the same genus and viable hybrids are produced between itself and the Jackal. Hybrids show features of the both in size, coat colour and behaviour. Black variants are also frequently reported.

Status : Though the animal has disappeared from many of its previously known distributional areas, it is fairly common in the Malabar part of Kerala. It is sometimes considered a nuisance attacking poultry and

domestic animals. Out of the 3 geographical races of this animal in India, *Canis aureus naria* is typical of Kerala.

Distribution in Kerala : Throughout Kerala, particularly the Malabar area.

43. INDIAN FOX

Vulpes bengalensis (Shaw)

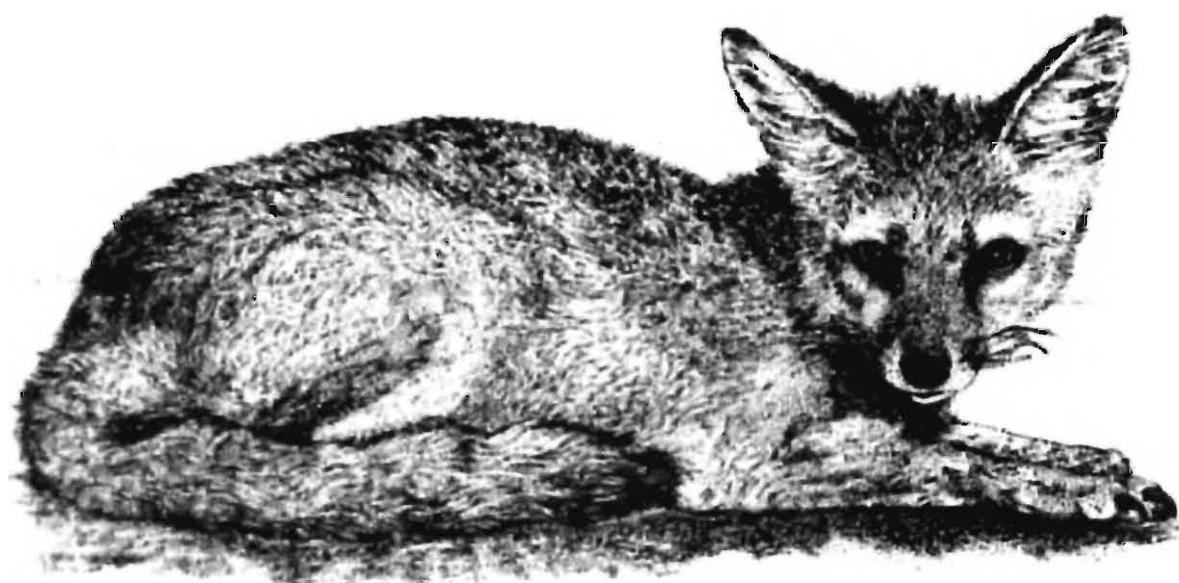
Mal. Name : *Kurukkan*

Range : Indian Subcontinent.

Habitat : Scrub Jungle, Open Country and Rocky Hills.

Size : HBL : 45-60 cm. TL : 25-35 cm. Wt : 1.8-3.2 Kg.

Much smaller than the Jackal, this animal can be readily distinguished from the former by its slender body and limbs, general grey colour of the coat and the long bushy black tipped tail which almost touches the ground. Belly is paler white and external parts of the pinnae are dark brown. Chin and throat are whitish. The tail is held horizontally when the animal runs fast. The muzzle of the animal is very sharp.



Indian Fox avoids dense forests. It prefers scrub Jungles, open country, rocky areas, cultivated lands, wastelands and even suburbs of cities. It lives in burrows dug by itself on open ground or in scrubs. Each burrow has many openings. This is a nocturnal animal, coming out of its den at dusk. Unlike jackal, it does not attack poultry. But like Jackal, it feeds on a variety of food which varies from fruits, berries, melons, termites, beetles, grasshoppers, crabs, reptiles and small mammals like rodents. Chattering sound of this animal is characteristic.

This animal can be easily tamed when taken very young and the young ones are very playful. Normally 4 cubs are born after a gestation period of 50-53 days. It breeds during February-April. Only a single Indian subspecies *Vulpes bengalensis bengalensis* is reported.

Status : Vulnerable. Not commonly found like Jackal. This animal is hunted for its pelt in many parts of India, which has resulted in the depletion of its population in many of its former ranges. Since this animal helps in the control of rodent population, measures should be taken to conserve this often less cared species.

Distribution in Kerala : Throughout, but highly patchy in distribution.

44. INDIAN WILD DOG/ Dhole

Cuon alpinus (Pallas)

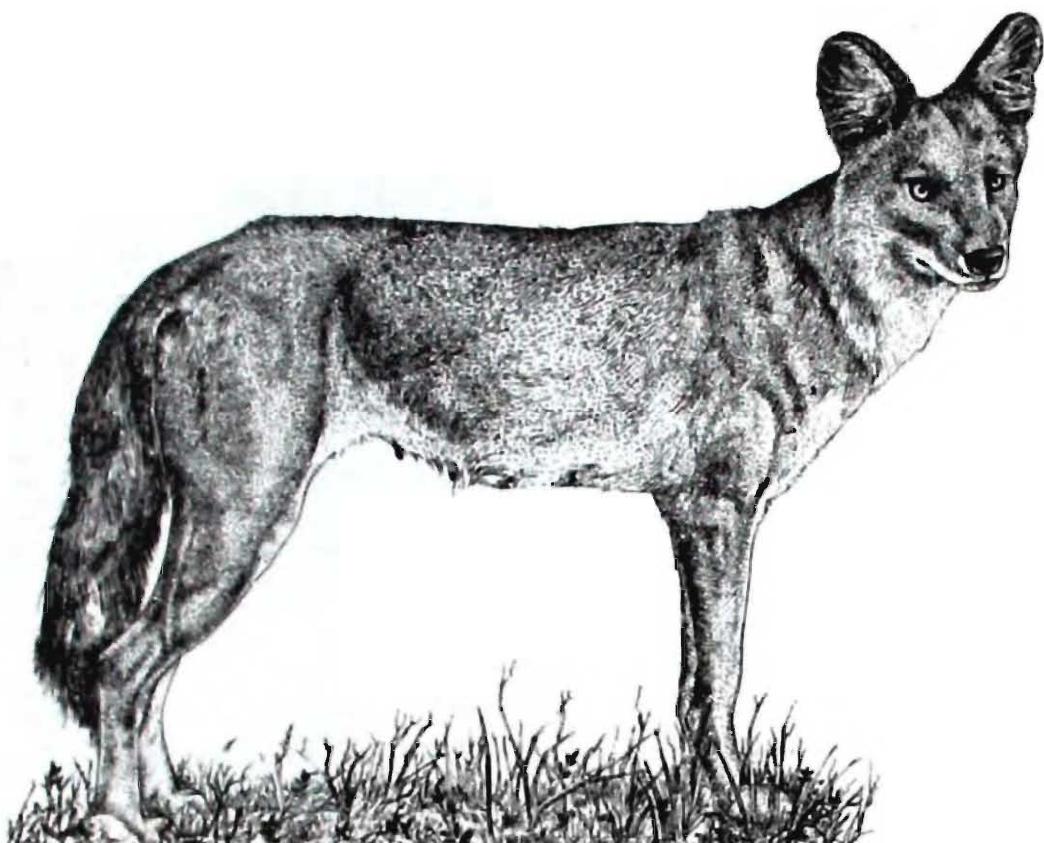
Mal. Name : *Kattunai*

Range : India, Pakistan, Bangladesh, Myanmar, Russia, China, Korea, Mongolia and S.E. Asia.

Habitat : Evergreen and deciduous forests, Grasslands, Woodlands and Open Country.

Size : HBL : 90-96 cm. TL : 40-43 cm. Ht : 43-55 cm. Wt : 15- 20 Kg.

This is a gregarious animal living in packs. The number of individuals in a pack varies from 2- 30. In Kerala, this animal is restricted to forests



Cuon alpinus (Pallas)

only. It is similar to a domestic dog in many features. It has six molars in the lower jaw, contrary to the seven in domestic dog, jackal and wolf. Also the number of teats is 12-14, whereas a domestic dog has only 10. Its red coat colour is very characteristic. Tail is long, pendant and bushy, coloured with darker tip. In Kerala, a very good population of this animal exists in the Periyar Tiger Reserve, Eravikulam National Park and the Idukki, Neyyar and Wyanad wildlife sanctuaries. Periyar Tiger Reserve supports, probably, the largest population.

The animal is mostly diurnal and the well-coordinated hunting technique of the members in a pack enables them to predate large herbivores like Sambar. All members of the pack take part in hunting. They feed on Sambar, Spotted Deer, Barking Deer, Wild Boar, etc. Breeding season is between November and December and 4-6 pups are born after a gestation period of about 9 weeks. Den may be pits, caves or crevices. Three Indian

races have been recognized, of which the peninsular race is *Cuon alpinus laniger*.

Status : Vulnerable. Its population has suffered mainly due to the loss of Habitat and the resultant depletion of the prey species. The local people often steal the prey killed by the Wild Dogs by chasing the animals away. Being one of the dominant predators of the forest ecosystem, it deserves strict protection measures.

Distribution in Kerala : Throughout the forest tracts.

Family URSIDAE Bears

Ursidae comprises of 7 species in 4 genera. They are large, massively built animals with a big head, comparatively short limbs, small eyes, round ears and a short tail. Hands and feet are with 5 digits bearing long curved claws. Fur is very thick. Females are smaller than males, otherwise they look alike. They are omnivorous, feeding on grasses, roots, herbs, fruits, insects and meat. Only one species is found in Kerala.

45. SLOTH BEAR

Melursus ursinus (Shaw)

Mal. Name : *Madiyan Karadi, Puni Karadi*.

Range : India, Bangladesh and Sri Lanka.

Habitat : Evergreen and deciduous forests, and scrub jungles.

Size : HBL : 140-170 cm. Ht : 65-85 cm. Wt. : 127-145 Kg. Males are larger and heavier than females.

This is a large black hairy animal, mostly restricted to forests. A prominent white V- shaped patch is present on its breast. Muzzle is long and lighter in colour. Claws are long, strong and white in colour. The



Melursus ursinus (Shaw)

animal is mostly nocturnal in activity. This animal is present in most of the sanctuaries of Kerala. The Periyar Tiger Reserve supports a very good population.

Being an omnivorous animal, it largely feeds on a variety of items like leaves, fruits, seeds, beetles, grubs, termites etc. It has a particular liking for

honey. It climbs rocks and trees to get honey. The animal has the habit of tearing and breaking open termite mounts to get termites and grubs. Grubs of large dung beetles are another favourite food item. It also feeds on carrion when food is scarce.

Usually two young ones are born after a gestation period of seven months. The cubs are carried on the mothers' back. Longevity is about 40 years. Race represented in Kerala is *M. ursinus ursinus*.

Status : Vulnerable. Shrinkage of habitat, indiscriminate hunting, trapping for zoos, circuses etc. have resulted in the decline of its population. Alleged medicinal values of its gall bladder has also been responsible for its killing by man in many areas. This animal is placed in Schedule I of Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Most of the Wildlife Sanctuaries and National Parks in Kerala.

Family MUSTELIDAE
The Weasel family

The family Mustelidae has small to medium sized animals comprising of 63 species under 23 genera. Otters, Martens, Weasels**, Pole Cats**, Ratels** and Badgers** belong to this family. Pointed head, long neck, slender body, short limbs and long tail are some of the general features of the family. Males are distinctly larger than the females. Mustelids are adapted to burrowing, climbing and swimming. Anal scent glands are well developed. Sense of smell is highly developed. 4 species are seen in Kerala.

** Represented in India but not in Kerala.

**46. THE CLAWLESS OTTER/
 ORIENTAL SMALL CLAWED
 OTTER**

Amblyonyx cinereus (Illiger)

Mal. Name : *Nirnai*

Range : Indian subcontinent, Myanmar, S. China, Taiwan, S.E. Asia to Sumatra.

Habitat : Highland hill streams and lakes in forests.

Size : HBL : 45-58 cm. TL : 25-35 cm. Wt : 3-6 Kg.

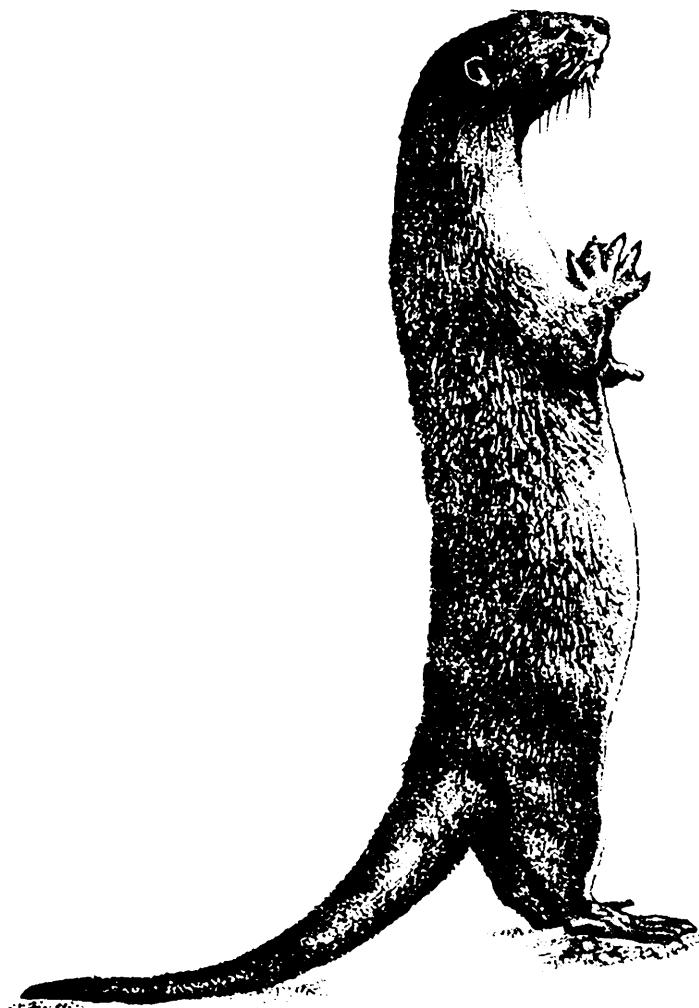
This is the smallest of all Indian otters. Among the 3 subspecies, *Aonyx cinerea nirnai* occurs in Kerala, which is markedly darker than other subspecies. The underside is paler. Its distinctive



feature is the rudimentary claw, which does not project beyond the pad. Feet are narrow and practically webbed. Tail thick at the base and tapering gradually to the tip. In Kerala, they are seen in cold high hill streams only. They hunt in groups of up to 18 individuals and feed mainly on crabs, mollusks and other small aquatic animals. Data on breeding are not available.

Status : Not a very familiar otter in Kerala. The main threat to its survival in Kerala appears to be the destruction or conversion of its habitat. The species is placed in Schedule I of Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Eravikulam National Park and Periyar Tiger reserve.



47. COMMON OTTER/ EURASIAN OTTER

Lutra lutra (Linnaeus)

Mal. Name : *Nirnai, Kahmai*

Range : Europe, N. Africa and most of the Asian countries.

Habitat : Mountain streams and lakes.

Size : HBL : 55-80 cm. TL : 30-50 cm. Wt : 5-12 Kg.

Among the four subspecies in India, the South Indian race is comparatively smaller than the North Indian ones. Rough dark hairs densely cover the body. Feet are fully webbed. Body is slender and tail long. The coat

colour of the upper side is light brown; throat is paler, belly lighter and tail brown beneath. They are very good swimmers and divers. They live in crevices, burrows and hollows of trees, or among boulders by the lake or riverside. They feed mainly on fish, crabs, frogs, birds, rodents, etc. They hunt singly, or in pairs, and even in small groups. They frequently destroy fishnets of fishermen making considerable loss. In some areas of Bangladesh, fishermen domesticate this animal to catch fish.

2 to 3 young ones are born after a gestation period of 2 months. The den wherein young ones are given birth to is called, a 'holt'. The holt is made near riversides, and has several external entrances. Young ones can be easily tamed. The race in Kerala is *Lutra lutra nair*.

Status : Usually these animals are not hunted for flesh and fur in Kerala. Its main threat for survival is due to the loss of habitat. This animal is placed in Schedule II of Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Its actual distribution in Kerala is yet to be ascertained.

48. THE SMOOTH COATED INDIAN OTTER

Lutrogale perspicillata (I. Geoffroy)

Mal. Name : *Neer nai, Kahmai*



Range : Iraq, India, Bangladesh, Myanmar, S.E. Asia, S. China and Indonesia.

Habitat : Lakes, streams and canals of plains and low hill ranges.

Size : HBL : 65-79 cm. TL : 40-50 cm. Wt : 7-11 Kg.

This species is discontinuously distributed from S.W. Asia to Indonesia. This stoutly built animal is often confused with the Common Otter. Its body is covered with a smooth, dark grey brownish coat. Cheeks are light grey to white and this white colour does not extend below the chest. This animal can be distinguished from the Common Otter by the line of division between the naked nose and adjacent hairy part, which runs almost straight across, and is not angulated as in the Common Otter. Feet large webbed and provided with strong claws. The tapering tail is slightly flattened at sides. This animal is equally adapted to water and land, feeding on both terrestrial and aquatic animals. They travel long distances for food and water. Major part of their food consists of fish and crabs.

Breeding season commences in October, and 1-4 young ones are born after a gestation period of 62- 65 days. The race found in Kerala is *L. perspicillata perspicillata*.

Status : These are the common otters of the plains. Once widely distributed, their number has reduced drastically due to the conversion of the wetlands, pools and lakes. Rapid urbanization is the major threat faced by this animal. This animal is placed in Schedule II of Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Throughout, mostly in coastal plains.

49. NILGIRI MARTEN/SOUTH INDIAN YELLOW THROATED MARTEN

Martes gwatkinsii (Horsfield)

Mal. Name : *Maranai, Koduvalli, Karum veruku*

Range : S. India (Southern Western ghats of Kerala, Karnataka and Tamil Nadu).



Martes gwatkinsii (Horsfield)

Habitat : Moist deciduous forests and shola grasslands.

Size : HBL : 60 cm. TL : 40 cm. Wt : 2 Kg.

This rare Mustellid is endemic to the Southern Western Ghats. It is related to the Yellow throated marten (*Martes flavigula*) of Himalaya, but slightly larger in size. The coat colour is reddish brown to deep brown on dorsal side. Throat and breast are yellowish orange in colour. Tail is bushy. Head is dorsoventrally flattened.

Nilgiri Marten lives in moist deciduous forests and shola grasslands above 900 m. above MSL. Though this animal is placed among otters, it is arboreal moving amidst the branches of trees with ease. It has an unpleasant body odour that renders protection to the animal by driving away its enemies, including human beings. The animal lives in singles, and feeds on a variety of food, which varies, from rats, squirrels, hares, birds and their eggs, insects, fruits, buds and flowers. The animal likes honey too.

Status : This rare and endemic mammal of Western Ghats is restricted to isolated areas and is a less studied species. Information on its distribution and status are still inadequate. I.U.C.N's Species Specialists Group has listed this animal as a threatened species.

Distribution in Kerala : Neyyar and Peppara Wildlife sanctuaries; Silent Valley and Eravikulam National Parks and the Periyar Tiger Reserve.

Family VIVERRIDAE
Civets

Viverridae is closely related to Felidae (Cats), and includes true Civets, Linsangs**, Ganets*, Palm civets, Banded Palm civets*, Falanouc*, Fossa* and Fanaloka*. There are 35 species in 20 genera worldwide. They are small to medium sized animals characterized from cats by their long body and tail, short limbs and pointed muzzle. The five claws on each foot are partly retractile. They are mainly carnivorous, but feed also on vegetable matter. Majority of the civets are solitary and nocturnal. Many species have anal scent glands, which produce noxious secretions used by the animal for its defense; however, man in medicine and perfumery uses the anal gland secretion.

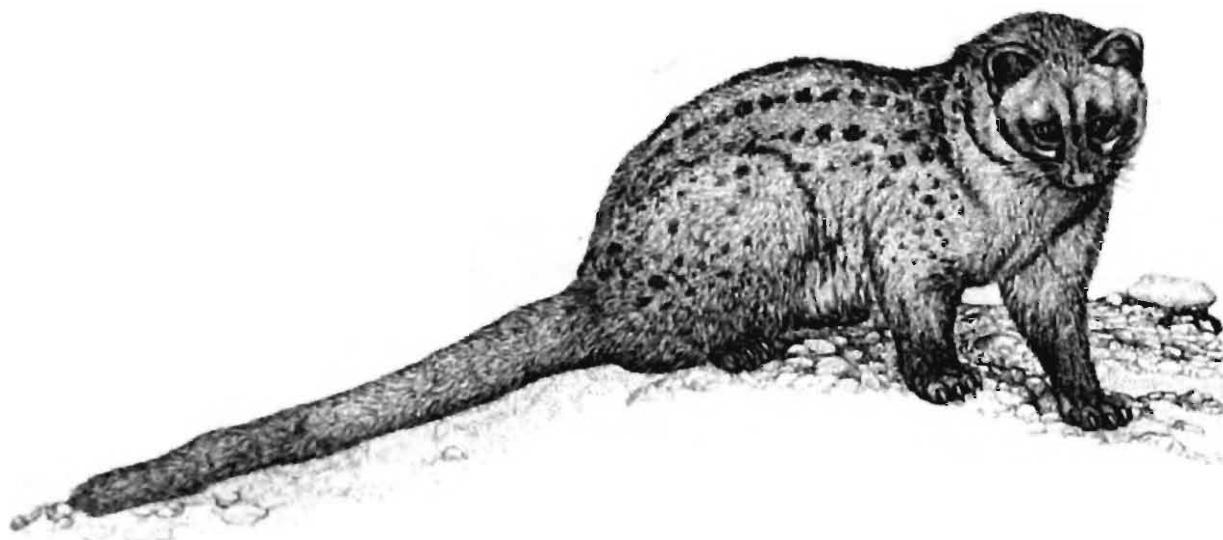
* Not represented in India.

** Represented in India but not in Kerala.

50. PALM CIVET/TODDY CAT

Paradoxurus hermaphroditus (Pallas)

Mal. Name : *Marapatti, Marameru, Kallunni meru, Pazhamunni*.



Range : Indian subcontinent, Myanmar, E. Asia to Indonesia and Philippines.

Habitat : Evergreen, Semi-evergreen and deciduous forests, countryside and human habitations.

Size : HBL : 43-70 cm. TL : 41-66 cm. Wt : 2-5 Kg.

This is the commonest of all civets in Kerala, frequently found on the wooden roofs of old houses. This nocturnal animal is about the size of a cat but more slender with long tail. The general colour of the body is black, but the under fur below the coarse black hairs, is greyish yellow. The muzzle is lighter in colour. Long, black stripes are present on the back. There are black spots on flanks and thighs. A white spot is present below the eye and on each side of the nose. The white spot present below the eyes are less conspicuous.

This animal is an omnivore, feeding on a variety of food items like fruits, eggs, insects, birds, lizards, rats and mice. The animal is a nuisance to poultry; it always kills more fowls than what it eats. It climbs up coconut trees and drinks tapped toddy collected in pots, hence the name as 'toddy cat'. The animal breeds throughout the year, usually 3-4 young ones are born, and delivered in holes, crevices etc. The animal is adapted to human food, and can be easily tamed.

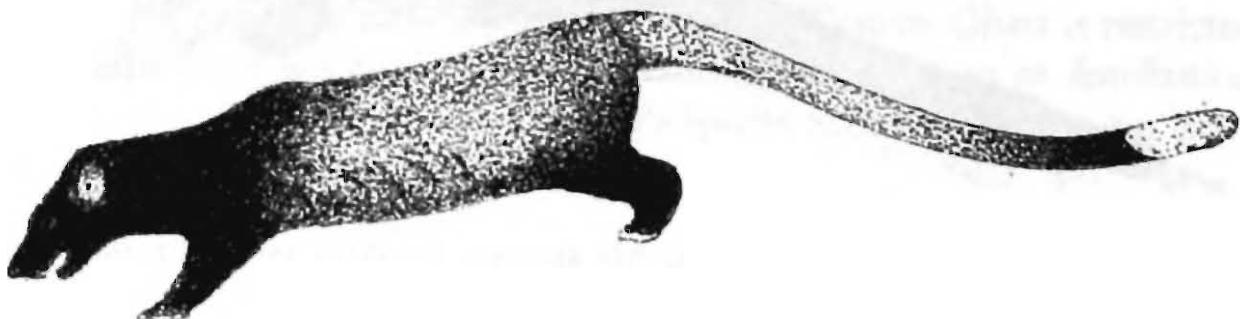
Status : This animal is common in countryside as well as in towns. It is disliked by man due to its destructive activity on poultry and plantations like coffee and pineapple.

Distribution in Kerala : Throughout.

51. BROWN PALM CIVET/JERDON'S PALM CIVET

Paradoxurus jerdoni Blanford

Mal. Name : *Thavidan Veruku*



Range : Western India – Western Ghats.

Habitats : Evergreen and deciduous forests.

Size : HBL : 59 cm. TL : 52 cm. Wt : 3.6 Kg.

About the size of a toddy cat, this animal is having its head, shoulders and limbs dark brown in colour, and the back and sides greyish brown. Tail is often white-tipped. The general habit of this shy animal is believed to be that of toddy cat.

Status : Placed in Schedule I of Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Chinnar Wildlife Sanctuary, Periyar Tiger reserve and Silent Valley National Park.

52. SMALL INDIAN CIVET

Viverricula indica (Desmarest)

Mal. Name : *Meru, Veruku, Cheru veruku, Pulli veruku*



Range : Indian subcontinent, S. China and S.E. Asia.

Habitat : Evergreen and Semi-evergreen forests and grasslands.

Size : HB : 57-60 cm. TL : 30-36 cm. Wt : 3-4 Kg.

This nocturnal solitary animal having the size of a domestic cat is mostly seen in scrub jungles and grassy areas. Its coat colour is greyish brown with black spots arranged in long stripes along the flanks. There are 6-8 stripes on the back. Tail is with 7-8 dark bands. There are also some cross bars on the neck. No spots are seen on the abdomen. This animal is distinctly smaller than the Large Indian Civet of North India and the dorsal crest of the latter one is completely absent in this species. White tip of the tail is also characteristic. Female has 6 teats.

This nocturnal, sometimes crepuscular, animal usually avoids thick forests. It is frequently seen around human habitations. Though a good climber, they are more terrestrial in habit. It is an omnivore, feeding on small mammals, birds and their eggs, lizards, snakes, frogs, insects, fruits, roots and other vegetable matter. The animal can be easily tamed.

4-5 young ones are born in a litter. The den may be burrows, holes or crevices in rocks. Only the mother takes care of the young ones. Longevity in civets in general is about 15 years.

Status : It is less abundant than the Common Palm Civet. This animal is reared in captivity by traditional physicians for extracting Civetone, a secretion from the perineal gland of the animal, which is used as an antispasmodic medicine, a stimulant, an aphrodisiac and also for curing certain skin disorders. Certain tribes of North India relish its flesh also; meat is used to make decoctions locally called 'Rasayanas'. This animal is placed in Schedule II of Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Throughout.

53. MALABAR CIVET *Viverra civettina* (Blyth)

Mal. Name : *Malabar Veruku, Javad, Malameru, Kannan Chandu*.

Range : South India.

Habitat : Hill slopes, woodlands, plantations, and coastal areas.



Viverra civettina (Blyth)

Size : HBL : 75-80 cm. TL : 33-45 cm. Wt : 6.5-8 Kg.

This is the largest of all civets in Kerala. It occurs along the Southern West coast only. The body is

spotted with black on a ground colour of greyish yellow. Head is grizzled; throat brown to light black and the base of each ear lobe at the outer side has a black spot. Limbs are black on the outer side. At the posterior part, the spots on the back are in the form of stripes on either sides of a mid dorsal black stripe or crest of thick hairs that extend from neck to tip of the tail. Tail is with 5-7 thick black rings. About 10cm. length of the tail tip is black in colour.

Though this animal mostly inhabits well-wooded countryside of coastal areas, it has been reported from hill areas also. Its behaviour and ecology are less studied. In Nilambur area of Kerala, a sub population is believed to exist. The animal has a particular liking for scrub forests and cashew plantations.

Status : This highly endangered animal was once believed to be extinct, but has been rediscovered after a period of 58 years from Elayur, a place in Malappuram district of Kerala, in 1987. There were unconfirmed reports of its occurrence from other places in Kerala and Karnataka. Earlier, this animal was used for extracting Civetone. It is believed that the population of this species is very thin. Therefore, immediate measures need to be taken to conserve this species. Ever-increasing urbanization and consequent loss of its habitat pose the problem of further dwindling the meager number of this animal to the brink of extinction. Status : Endangered. The Small Carnivore Specialist Group of IUCN lists this species as a priority species for conservation. This is the only civet species listed in the Schedule - I of Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Malappuram district.

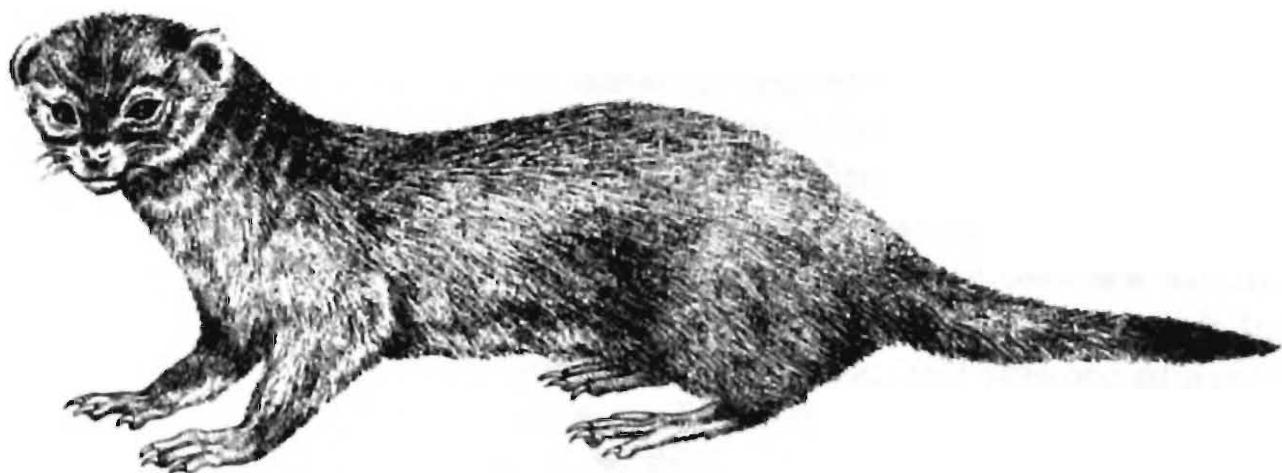
Family HERPESTIDAE
Mongooses

Family Herpestidae includes a total of 31 species under 17 genera, of which 6 species, under a single genus *Herpestes*, inhabit India. Their long body, sharp snout, short limbs, long trailing and bushy tail characterize the mongooses. They resemble civets in many features, but differ from them in having features like small, semicircular ears that do not project above head, not so compact feet as that of civets, free digits and long claws, and long coarse hair. Mongooses have no scent glands. They are more carnivorous in habit, and active hunters. They often stand on their hind legs to have a better vision around. All of them prey upon snakes and are more or less immune to snake venom. Most of the species are solitary; some live in pairs while others, in small groups. They can be easily tamed. Most of these animal species face no threat of extinction. Longevity is about 10 years. Four species are reported from Kerala.

54. COMMON MONGOOSE/INDIAN GREY MONGOOSE

Herpestes edwardsii (Geoffroy)

Mal. Name : *Keeri*.



Range : East and Central Arabia to Indian Subcontinent.

Habitat : Scrub Jungle, Open Lands and cultivated Lands.

Size : HBL : 40-45 cm. TL : 40-45 cm. Wt : 1.4-1.5 g.

This is the familiar mongoose of S. Indian villages, seen in scrubs near human habitations, and in cultivated lands. Among the 3 Indian races, the South Indian race is the largest one, characterised by its yellowish grey coat speckled with black, giving it a grizzled appearance. The long tail is tipped with white, or yellowish-red-coloured, hairs. Muzzle and feet are light brown. Eyes are reddish brown and the claws, dark brown. Albinos are also reported. Male animals are considerably larger than the females.

This solitary and mostly diurnal animal feeds on small mammals, birds and their eggs, snakes, lizards, frogs, crabs, insects, etc. Sometimes carcass, roots, tubers and fruits are also eaten. The animal vigorously fights with snakes, and in villages the snake men often carry with them tamed mongooses to display their fights with snakes. Vocalization varies from mewing to yelping and growling. They growl when disturbed or angry. The animal frequently attacks poultry, killing more than they eat, making considerable loss.

Common mongoose breeds throughout the year. 2- 4 young ones are born in a litter after a gestation period of 8-9 weeks. The animal can be easily tamed and kept as a pet. Since it destroys rodents and other vermins, it is beneficial to human beings.

Status : This animal is still common in villages and is not considered as endangered. It is placed in Schedule IV of Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Throughout.

55. NILGIRI BROWN MONGOOSE/INDIAN BROWN MONGOOSE

Herpestes fuscus Waterhouse

Mal. Name : *kanthakeeri*

Range : South India and Sri Lanka.

Habitat : Hill forests.

Size : HBL : 50 cm. TL : 30 cm. Wt : 2.7 Kg.



Herpestes fuscus Waterhouse

This mongoose is seen only in South Indian hills and in Sri Lanka. There is only a single race in India. This heavily built animal is dark brown in colour, speckled with yellow or tawny spots. Individual hairs are tawny in colour at the base, and are ringed in colours with black and yellow. Tail is slightly shorter than

both the head and the body. Feet are darker than head and body. Its general habits are believed to be like that of common mongoose.

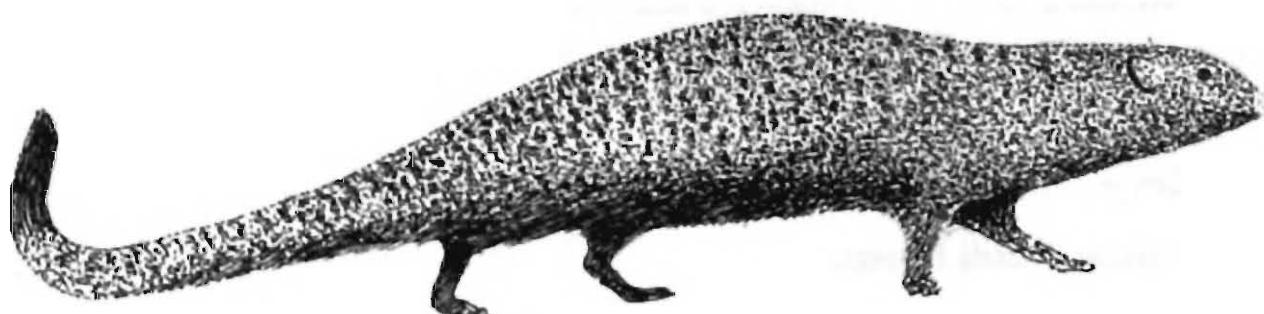
Status : Uncommon.

Distribution in Kerala : Periyar Tiger Reserve and Silent Valley National Park.

56. RUDDY MONGOOSE

Herpestes smithii Gray

Mal. Name : *Chunayan Keeri*



Range : India and Sri Lanka.

Habitat : Deciduous forests and grasslands.

Size : HBL : 45 cm. TL : 40 cm. Wt : 1.9 Kg.

Ruddy mongoose is seen in forest areas of Central and South India and in Sri Lanka only. Only a single race *H. smithi smithi* occurs in India, which is characterised by its light brownish grey to black coat, speckled with white and red. Head and limbs redder than other parts of the body. Individual hairs are ringed black and white with reddish tips. Muzzle dark and face rusty red. This species can be readily distinguished from the common mongoose by the black tip of its tail. Feet are dark brown. Since this is mostly a nocturnal form and is confined to forests only, they are rarely seen. Its feeding and other habits are believed to be like that of the common mongoose. Longevity in captivity is about 18 years.

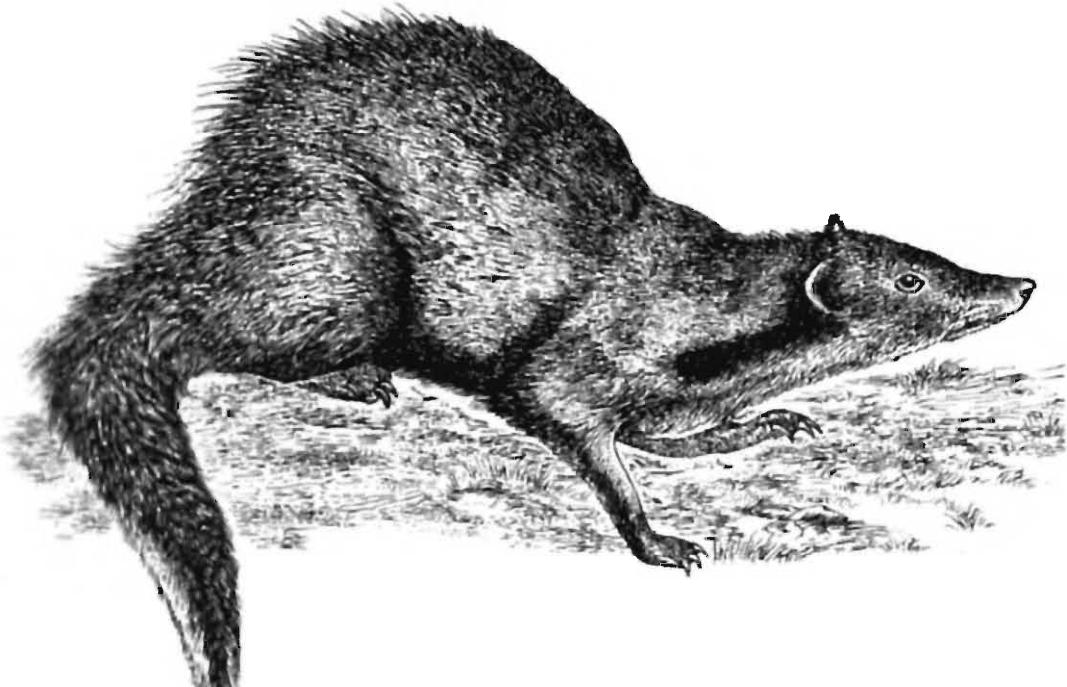
Status : Uncommon.

Distribution in Kerala : Very few reports from protected areas of the state.

57. STRIPENECKED MONGOOSE

Herpestes vitticollis Bennett

Mal. Name : *Chenkeeri*.



Range : South India and Sri Lanka.

Habitat : Deciduous forests.

Size : HBL : 54cm. TL : 35 cm. Wt : 3.2 Kg.

This is the largest Indian Mongoose, well characterized by its size and a black neck stripe from ear to the shoulder. The general coat colour is grizzled grey, tinged with rusty red, the redness deepening towards the hinder parts of the body. Legs and feet are dark brown to black. Tail is shorter than head and body when compared to other mongooses. The race in Kerala is redder than the race, *H. vitticollis inornatus* of North Karnataka.

This solitary, diurnal and crepuscular animal is seen in forests only. They hunt on whatever they can manage. Small deer, rodents, snakes, lizards, birds, frogs, crabs, fish etc. are eaten. Not much is known about its breeding habits. Subspecies found in Kerala is *H. vitticollis vitticollis*.

Status : Restricted to hilly forests. Not a very common species

Distribution in Kerala : Aralam Wildlife Sanctuary, Periyar Tiger Reserve and Eravikulam National Park.

Family FELIDAE

The cat family

The family Felidae comprises of big cats (Tiger, Lion**, Cheetah*, Leopard etc.) and small cats (Jungle Cat, Leopard Cat, Fishing Cat, etc.). Among the carnivores, they are more suited for hunting and flesh eating. Teeth and claws are strongly developed and help in seizing, holding and tearing the prey. They are very agile and can run very fast at short distances. Senses of smell, vision and hearing are well developed than those features of other carnivores. The facial whiskers are long, stiff and highly sensitive, and useful in hunting at night. Majority of the species are solitary in habit.

Gait is digitigrade. Cats display a kind of noisy demonstration during mating.

* Believed to be extinct in India since 1950s.

** Represented in India but not in Kerala.

58. TIGER

Panthera tigris (Linnaeus)

Mal. Name : *Kaduva, Nari*.

Range : Oriental Region except Borneo and Philippines, and Siberia.



Habitat : Evergreen and deciduous forests, open jungles, grasslands and swamp forests.

Size : HBL : 1.8-2.8 m. TL : 90 cm. Wt : 130-260 Kg.

Tiger is the biggest of all cats. The animal is solitary and nocturnal mostly living in dense forests. Some of the subspecies of this animal are extinct and the remaining subspecies numbering about eight are endangered. Indian Tiger (*Panthera tigris tigris*) is distributed throughout the forested regions of India. In Kerala, this

animal occurs in most of the wildlife sanctuaries, and the highest number is in Periyar Tiger Reserve. Strong muscular body and powerful limbs characterise this beautiful, but ferocious animal. Toes are provided with sharp retractile claws. The animal is reddish yellow to brown in colour with black stripes on the body, face and limbs, and underside, white. Black rings on the tail are characteristic.

This animal is terrestrial and both male and female individuals possess and protect large home ranges. The female's home range may overlap with that of the male's. Home range of male comprises of about 60-100 sq. km., whereas that of the female is about 20 sq. km. A variety of means are used to mark the territory. Urine mixed with anal gland secretions is sprayed on bushes, trees or rocks as an olfactory signal to other tigers. Faeces are left at very conspicuous places. The animal also scratches on tree-trunks, marking the home range.

Tiger mainly hunts at night. Hoofed animals like Gaur, Sambar, Chital, Barking deer, Wild boar etc., form the major food items of the animal. It also feeds on smaller mammals, birds, reptiles, and fishes. In many parts of India, where the tigers have lost vast areas of their natural habitats, the individuals occasionally prowl into the countryside, catch and feed on livestock also. Man is not a natural prey of the animal; however, a few individuals are frequently reported to be man-eaters. The marauding tigers, the "man-eaters", are mostly females and old or disabled individuals. The inability to catch the natural prey may be the reason for developing this habit. Tiger makes different kinds of sounds like howling, roaring, barking, whooping, etc. They swim very well.

Usually the male approaches the female during the mating season. They mate for about 100 times, over a period of two days. 2-3 cubs are born after a gestation period of 103-105 days. Female takes great care in protecting the cubs. Young ones are shifted from place to place, a feature in most of the cats. Young ones are very playful. They start accompanying the mother when six months old and stay with her for another one and half to two years. Sometimes, half grown young ones born in the last

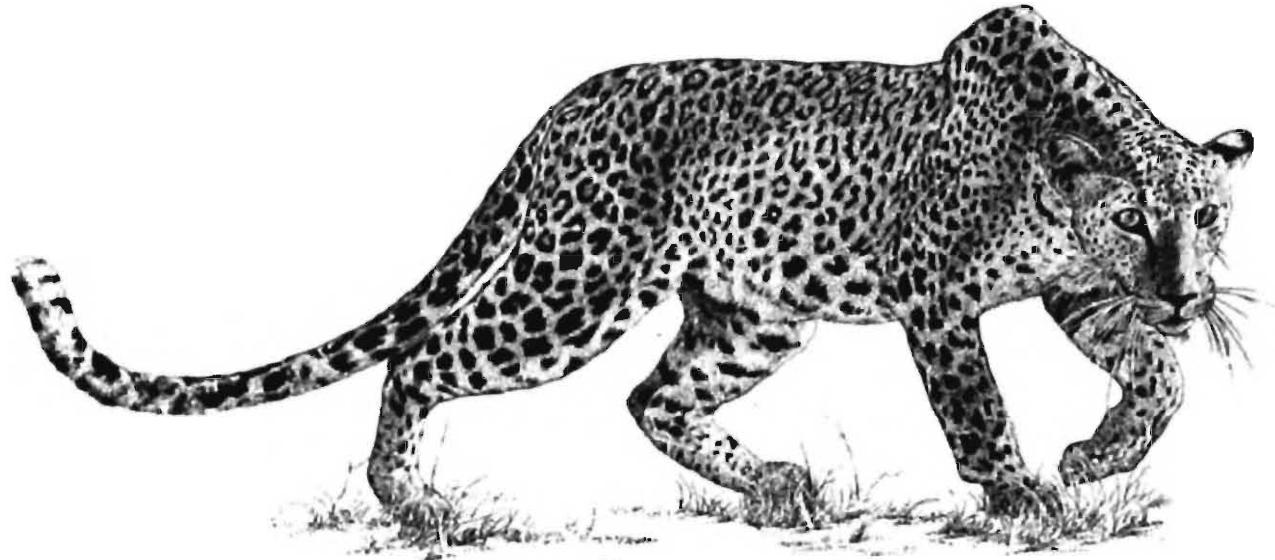
litter are seen with the new litter. Sexual maturity is attained in about 3 years. Life span is about 20-25 years.

Tiger Census: Tiger census is periodically conducted by the Forest Department in association with voluntary agencies to determine the population size of tigers. Since this animal is nocturnal and rarely sighted, census is mostly done by indirect methods like pug mark study/ count. This depends on the fact that the pugmarks of different individuals and also between male and female differ in size and certain features. Clear and prominent pugmarks on soil are traced on a tracing paper, and also the plaster cast of the mark is taken. A comparative study of all these would give the approximate number of individuals in a particular area.

Status : Tiger, our national animal, is endangered, and under the threat of extinction. It is placed in the Schedule I of Indian Wildlife (Protection) Act, 1972. It was estimated that the number of the tigers at the turn of the 20th century was about 40,000, and that figure has come down drastically to less than 1000 by 1972. This prompted the Government of India to launch the 'Project Tiger' Scheme in association with World Wide Fund for Nature (W.W.F). Tiger reserves were established throughout the country, where the tiger and its habitats got utmost protection. Thus the population of Tigers began to increase and at present, their number has gone up to 4000 throughout India. Still they are not free from threats. The major threats are the Habitat depletion and resultant decrease of the prey species and the hunting by man. Tiger is hunted for its flesh, bones, skin, teeth, nails, etc. Tiger bones are in great demand in China and Europe, because of the alleged aphrodisiac value of them. The large-scale seizure of tiger bones frequently reported from India indicates that the Indian Tigers are still not safe in the country, unless strict counter measures are augmented.

Distribution in Kerala : Most of the protected areas.

59. LEOPARD (PANTHER)

Panthera pardus (Linnaeus)Mal. Name : *Pulli Puli*

Range : Oriental region, Korea, N. China, Russia, Middle East and Africa.

Habitat : Evergreen, semi evergreen and deciduous forests, woodlands, open country and grasslands.

Size : HBL : 100-190 cm. TL : 70 -95 cm. Wt : 50-70 kg.

Once a widely distributed carnivore in most of the African and Asian regions, its continuity of distribution has become disrupted recently. Some of the subspecies of this animal (a total of 7 subspecies) are extinct in many regions.

This beautiful animal readily catches the attention with its strong, slender and sturdily built body with a long tail. The coat colour of the Indian races varies from greyish yellow to fulvous with irregular black rosette-like spots all over the body. Spots on the head, limbs and middle of the back are solid black, i.e., not broken into rosettes. Belly is white. Tip of the tail is black-ringed in colour. In thick rain forests, especially of Western Ghats, black (melanic) forms, called Black Panthers, are frequently reported. A few other members of the cat family also exhibit melanism.

This animal is adapted to a variety of habitats from thick forests to scrub jungle, open country, etc. This is a solitary animal possessing a territory. Territory of a female includes about 10-30 sq. km, which may partially overlap with that of another female's. Territory of a male may encompass territories of 3 to 4 females'. Territory is defended and marked by spraying urine on tree trunks, stones, logs, or on other objects. This agile runner can climb as well. They can even drag a medium sized 'kill' up a tree branch. They kill and eat anything that they can manage which varies from deers, antelopes, monkeys, pigs, porcupines, hares, rodents, birds, reptiles, etc. Near villages, they also prey upon cattle, dogs, donkeys, etc. Prey is pounced upon and killed by a single bite on the throat.

Breeding takes place throughout the year. 2 to 4 cubs are produced after a gestation period of 90 - 105 days. Female becomes sexually mature in 2½ to 4 years. Longevity is about 15 to 23 years. The subspecies represented in Kerala is *Panthera pardus fusca*.

Status : Once a widely spread species, its Habitat has drastically shrunk recently. Hunting for its pelt and the decline of prey species has reduced the number of this animal drastically. This animal is killed in many areas due to its attack on livestock and human beings. The species is placed in Schedule I of Indian Wildlife (protection) Act, 1972.

Distribution in Kerala : Most of the forested tracts of Kerala.

60. LEOPARD CAT

Prionailurus bengalensis (Kerr)

Mal. Name : *Puli poocha, Pulli poocha*

Range : Oriental region, Siberia, Korea and N. E. China.

Habitat : Dry deciduous scrub forests and grasslands.

Size : HBL : 35-60 cm. TL : 15-40 cm. Ht : 20-45 cm. Wt : 3-7 Kg.

About the size of a domestic cat, this beautiful nocturnal animal is seldom seen and is mostly confined to forests and adjoining grasslands.



Prionailurus bengalensis (Kerr)

The black spots like that of leopards, gave the name, 'leopard cat' to this animal. The general colour of the body is yellowish grey to pale fulvous with black or brownish spots, lower part being white. There are black cheek stripes enclosing a light area between them. Four such stripes also run from the forehead to neck which break at the shoulder. Tip of the tail bears black crossbars, but not spots.

This agile climber takes shelter in holes or hollows of trees during daytime and starts hunting at dusk. It preys on small animals that it can manage. Hares, squirrels, small deers, rodents, lizards, birds etc. form its food.

2-4 young ones are born in a litter after a gestation period of about 65-70 days. Young ones attain sexual maturity in about 2 $\frac{1}{2}$ years. Longevity is about 12-15 years. The Subspecies represented in Kerala is *Prionailurus bengalensis bengalensis*.

Status : Habitat destruction and hunting for its beautiful pelt has resulted in the depletion of its population drastically in recent decades. The species is placed in Schedule I of WL (P) Act, 72 and in Appendix. I of CITES.

Distribution in Kerala : Forested areas.

61. FISHING CAT (LARGE TIGER CAT)

Prionailurus viverrinus (Bennett)Mal. Name : *Meen Poocha, Meenpidiyan Poocha.**Range* : India, Sri Lanka, Myanmar, Bangladesh, Indonesia and Taiwan.*Habitat* : Dry deciduous scrub jungles, grasslands, swamps and tidal creeks.*Size* : HBL : 57-85 cm. TL : 25-33 cm. Ht : 38-41 cm. Wt : 11-15 kg.

This cat is much larger than a domestic cat and is characterized by its moderate size, elongated head, coarse greyish brown coat with dark brown spots and short limbs. Ears are short and blunt and back of the ear is dark coloured with a white spot. The forefeet of this animal are provided with a moderately developed web between the toes. The claws are not fully retractile. The dark spots on the back are oblong while the spots are more or less rounded on other body parts.

Spots on flanks are longitudinally arranged. Six to eight black lines run down the forehead to the neck. A pair of white cheek stripes edged with black is present. Tail with six to seven dark bands. Fishing cat lives in forests, scrub jungles, swamps, tidal creeks and thickets found along the streams and rivers. It feeds on small mammals, birds, fish,



insects, mollusks etc. It can catch fish from water, but the usual method is to scoop up the fish with its paws. Because of this habit, the animal got the name, 'fishing cat'. This animal is known to attack larger animals like goats, dogs and calves of cattle. Very little is known about the breeding habits of this animal.

Status : This is not a uniformly distributed species. Therefore, the loss of preferred habitats has caused the decline of population in many areas. It is now rare in many of its previously known ranges. The species is placed in Schedule I of the WL (P) Act, 72 and in Appendix II of CITES.

Distribution in Kerala : Kannur and Idukki districts.

62. RUSTY SPOTTED CAT

Prionailurus rubiginosus Geoffroy

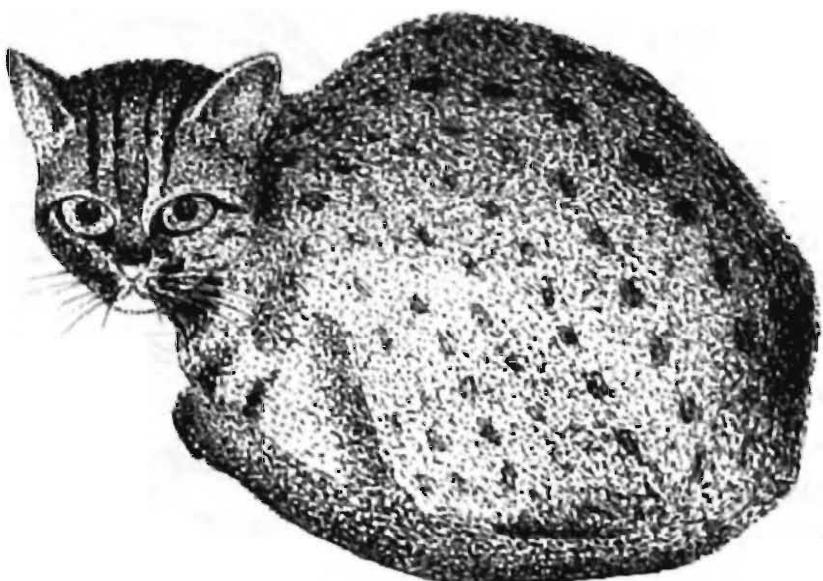
Mal. Name : *Thurumban Poocha, Valli Poocha*

Range : India (Southern India, particularly Western Ghats up to the Dangs, Madhya Pradesh and parts of Jammu & Kashmir) and Sri Lanka.

Habitat : Scrub jungles and grasslands.

Size : HBL : 35-48 cm. TL : 15 -25 cm. Wt : 1-2 Kg.

This cat is smaller than a domestic cat. Its smaller size, smooth greyish brown coat and the rusty spots on the back and sides characterise this animal. The spots are longitudinal on the back and rounded on the sides. The under side



and the inner side of the limbs are paler with dark spots. There are 4 dark brown stripes on the top of the head and nape. There are two dark facial streaks. Tail is moderately long and uniformly rufous coloured. Ears are small and rounded.

Status : The animal inhabits scrub jungles and grasslands and to a lesser extent it is arboreal. Its prey animals include small mammals, birds, insects etc. Young ones can be tamed and are playful. Very little is known about the habits and ecology of this animal.

Status : This threatened animal is rarely recorded from Kerala. The population of this animal seems to be very scarce. The species is placed in Schedule I of the WL (P) Act, 72 and in App.-I of CITES.

Distribution in Kerala : Kottayam, Idukki and Alappuzha districts.

63. JUNGLE CAT

Felis chaus Guldenstaedt

Mal. Name : *Kattu poocha, Pongan poocha*



Range : N. Africa, Middle East, Indian subcontinent, Myanmar, Thailand and Vietnam.

Habitat : Semi evergreen and deciduous forests, scrub jungles and grasslands.

Size : HBL : 56-94 cm. TL : 23-31 cm. Ht : 35 -38 cm. Wt : 5- 6 Kg.

Larger than a domestic cat, this animal is characterized by its slender body, long legs, large pointed ears and yellowish grey

coat. Underside is paler. Limbs are with 2-3 or dark stripes. Tail, which extends only up to the heel, has black rings towards the end. Ears, which are slightly tufted, are dark externally and white internally. There is a dark stripe from each eye to the muzzle. Faint stripes are also seen on the flanks. Eyes are pale green or yellowish. Stripes seen on young kittens fade away when they become mature. Melanic individuals are also rarely reported.

This animal is adapted to a variety of Habitat conditions ranging from marshes, grasslands, bush lands to forests. They are even seen in drier areas. The animal is more diurnal, mostly active in the morning and evening. It feeds on frogs, reptiles, birds and small mammals. The animal is very swift and courageous in killing its prey. In villages, they frequently attack poultry and make considerable damages.

Jungle cat breeds twice a year and the two breeding periods are between January to April, and August to November. 3- 5 kittens are born in a litter after a gestation period of about 66 days. Eyes open at about 11-15 days after birth. Kittens can be tamed.

Status : Once widely distributed, rapid urbanization and the consequent alteration of the habitats have affected this species seriously in recent times. This animal is placed in Schedule II of Indian Wildlife (Protection) Act, 1972 and in App. II of CITES.

Distribution in Kerala : Throughout.

Order PROBOSCIDEA Elephants

Elephant is the largest land animal. Huge body, pillar like thick, cylindrical limbs, long proboscis or trunk (hence the name Proboscidea to the order), thick skin, large ears, small eyes etc. are the readily seen features of Proboscidea. Tusks, present in male of Asian elephants, and in both sexes of African elephants, are modifications of the incisor teeth.

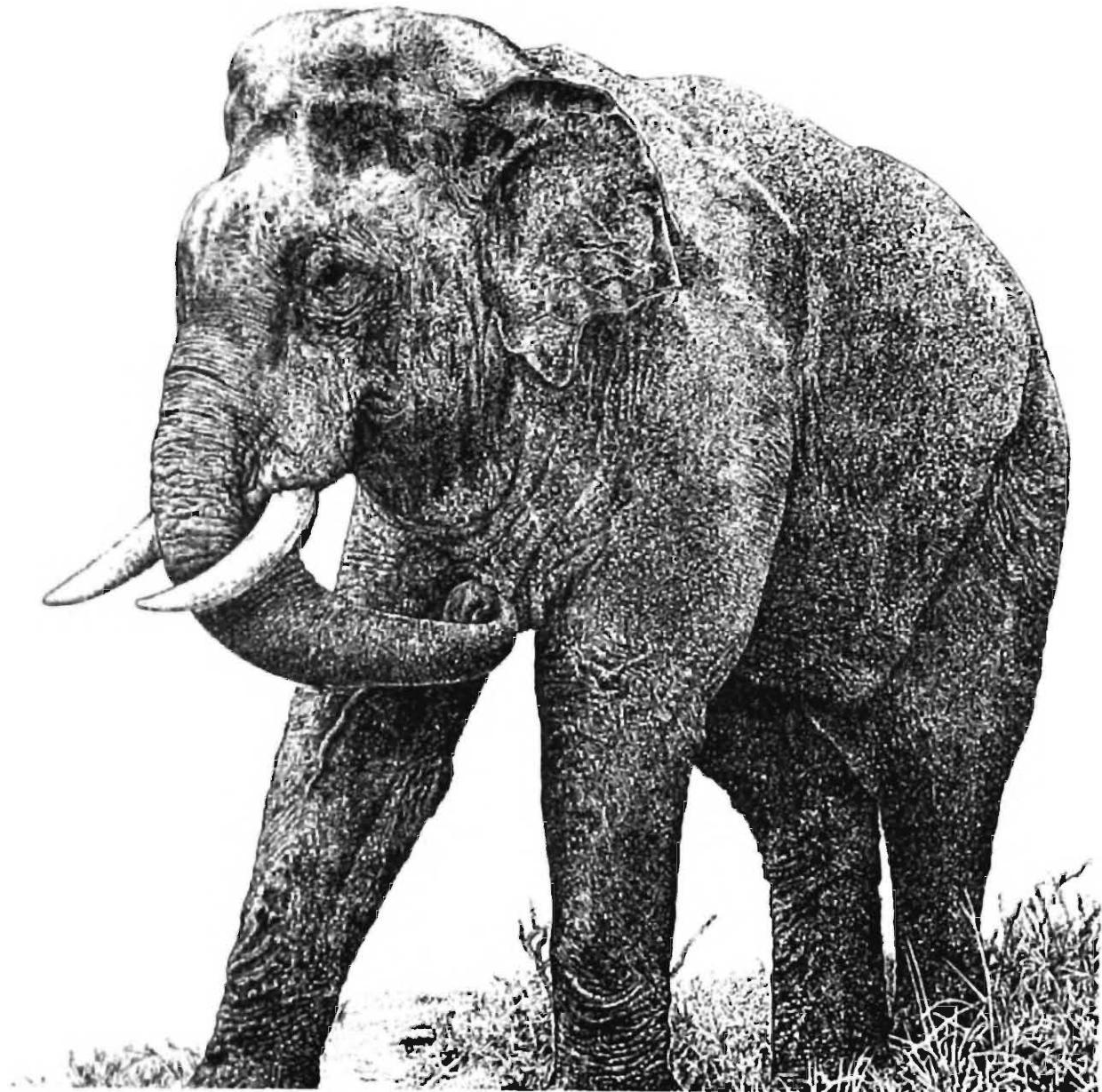
Abdominal testes, absence of clavicle bone, absence of canines, etc. are other features of the order. Living members of the order form a single family (Elephantidae) having two genera – the *Loxodonta** (African elephant) and *Elephas* (Asian Elephant).

*Confined to African continent.

64. ASIAN ELEPHANT

Elephas maximus Linnaeus

Mal. Name : *Aana*.



Range : India, Sri Lanka, Bangladesh, Bhutan, Myanmar, S. China, S.E. Asia, and Indonesia.

Habitat : Deciduous forests and grasslands.

Size : HBL : 5.5-6.4 m. Ht : 2.5-3 m. Wt : up to 5000 Kg.

Elephants are remarkable for their massive size, unique beauty, intelligence and association with man in many ways. They have been domesticated even from the days of Indus valley civilization. They are captured in pits or enclosures and domesticated. They are intelligent animals and have been in use of mankind for logging operations, circuses, processions and festivals. They were formerly used in warfare. They can learn and remember many things. In most parts of Asia, they are revered and kept in temples and royal families as status symbols. Lord Ganesha with an Elephant head is deep rooted in Hindu faith.

Asian Elephant differs from the African one in its lesser size, absence of tusks in females, absence of a dip or curve on the back, comparatively smaller ears, and possession of a single lip like structure on the trunk end for the two in the African one. There are 4 nails on each hind foot instead of 3 in the African one. Asian Elephant also has two characteristic prominences above the eyes. Tusks are somewhat smaller than that of the African elephant.

The long and attractive trunk or proboscis is a very useful organ for the animal, helping in feeding, drinking, greeting fellow beings, fighting and caressing the body. Large ear lobes are richly supplied with blood vessels, which act as a kind of radiator helping in temperature regulation. Senses of smell and hearing are well developed but the eyesight is poor. Tusks are the defensive and offensive structures in males. In wild, the animal is usually seen in hilly undulating terrains that are forested, or grassy. It may come to plains during certain period of the year. Bamboo forests are the preferred habitats. The animal lives in herds of single families, which may break into two or more when their numbers increase. The oldest and strongest female is the leader of the herd. Adult males stay

away from the herd. There are also tusk-less males called 'Makhnas' which are solitary and, like other adult males, pair with females at the breeding season. Elephants are more active during morning and evening hours and retreat to shade during midday. They spend rest of the time feeding. They feed on a variety of plant materials. About 400 different plant species are eaten, which vary from grasses (forming the major share), leaves, fruits, barks, wood etc. Elephants usually move in a particular path known as elephant paths or trails. Such tracks, wallows, bathing sites, sleeping places are used over by generations. They show migratory movements, and these migratory routes are also used by generations. Elephant herd possess a large home range to ensure enough food and water, feeding about 150 Kg. of plant material and drinking about 70-90 litres of water daily. They are good swimmers and even swim across wide rivers and reservoirs. They make a variety of sounds, which vary from growling, whistling, bellowing, screaming and trumpeting. The trumpeting sound is mostly produced when they are excited.

One very particular feature of the male elephant is the periodical excitement known as 'musth'. The animal turns aggressive during this period. Increased flow of secretions from its temporal gland is seen at this time. High levels of sex hormones (testosterone) in blood during this period indicate that they may be associated with sexual behaviour.

One, rarely two, young ones are born after a gestation period of 20 - 22 months. The social cohesion of the herd is more pronounced in protecting and rearing the young ones. The Indian race is *E. maximus indicus* F. Cuvier.

Status : Once a highly distributed species, they are now confined to an isolated pocket in many areas and their number has reduced drastically. Human settlements, construction of hydroelectric & irrigation projects and other developmental activities of man etc. have reduced their habitat very much. Their migratory routes being broken, isolated populations in many areas are in danger. They are widely hunted for ivory. Trapping of wild animals in the past also had a bad influence on the wild population. The

heavy habitat destruction has caused wild elephants to find food in cultivated lands causing conflicts with man. The 'Project Elephant' Programme intended to restore the wild population and their habitat may help the animal in future. The animal is placed in Schedule I of Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Most of the forested tracts of Kerala.

Order ARTIODACTYLA
Even-toed ungulates

Even-toed ungulates are the largest and the most diverse order of hoofed herbivores distributed world wide, except in Australia and Antarctica. This order comprises of 160 species in 77 genera under 9 families. They are, 1. Camelidae (Camels)**, 2. Suidae (Pigs), 3. Tayassuidae (Peccaries)*, 4. Hippopotamidae (Hippopotamus)*, 5. Tragulidae (Chevrotains), 6. Moschidae (Moschids)**, 7. Cervidae (Deers), 8. Girafidae (Giraffs)* and 9. Bovidae (Cattle, Antelopes, Sheep and Goats). Artiodactylans have even number of toes (3rd and 4th) enclosed in hoofs. 1st digit is absent and 2nd and 5th are reduced. They are predominantly herbivorous; their teeth are, therefore, specialized for cutting and grinding the vegetable material. They are cud-chewing animals and their stomachs are 4 chambered. Digestion is symbiotically assisted.

*Not represented in India

** Represented in India but not in Kerala.

Family SUIDAE
Pigs

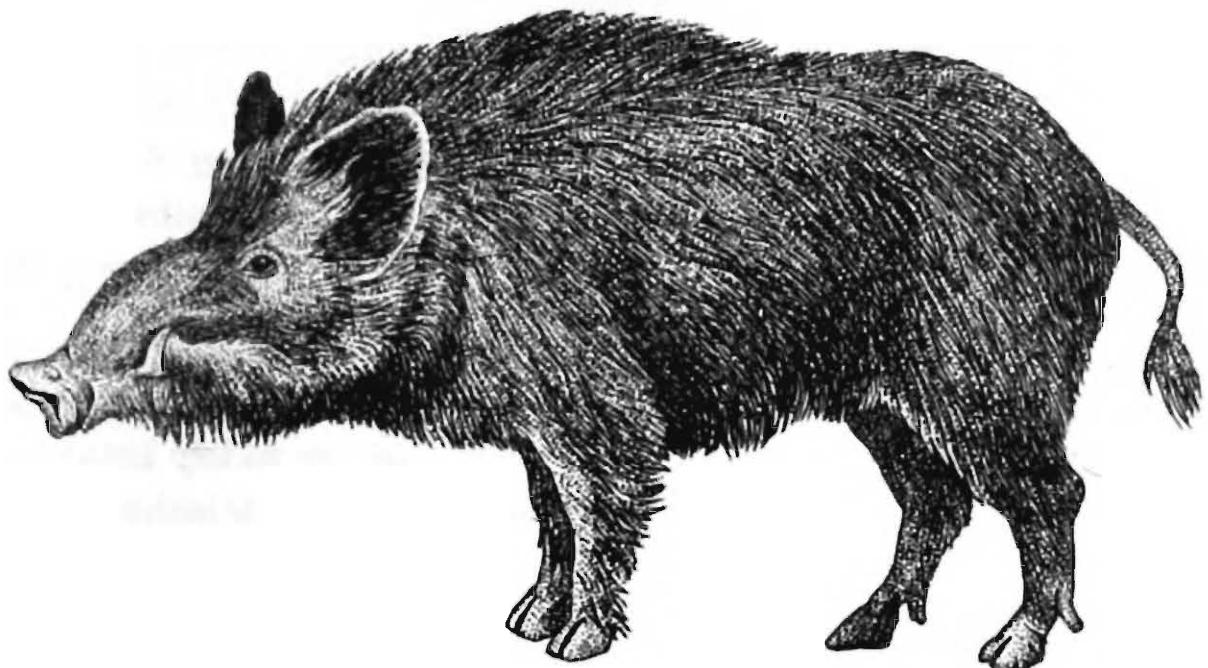
Suidae comprises of 9 species in 5 genera, the world over. Only a single species is represented in Kerala. Distinctive features of Suidae are, large and elongate head, short neck, truncated and motile snout ending in a flat hairless disc containing nostrils, short limbs and the large canines

curved outward and upward to form tusks, four toes on each foot, the 3rd and 4th touching the ground having functional hooves. Pigs are omnivorous in diet.

65. INDIAN WILD BOAR

Sus scrofa Linnaeus

Mal. Name : *Kattu Panni*.



Range : Indian Subcontinent, South East Asia and Indonesia.

Habitat : Deciduous forests, woodlands, grasslands and marshy areas.

Size : HBL : 90-180 cm. TL : 30-40 cm. Ht : 70-75 cm. Wt : 50-230 Kg.

Distributed throughout India, it is a common omnivore in the forests of Kerala. Coat colour is brownish black to greyish black. Indian Wild Boar is like the European Boar in most of the features, but differs from the latter in its sparse coat, presence of a black crest or mane on neck and back. Also, there are thick long bristles on the throat as well as above

and below the eyes. Tail is sparsely covered with hairs, but its apex has long lateral bristles forming a tuft. Young ones are more hairy, brownish with dark brown stripes. The well developed, curved tusk in male projects out from the mouth.

Wild Boars live in sounders. Sounder size may vary from a few individuals to a hundred or more ones, possessing a home range. A few old boars may live solitarily. Being an omnivore, they feed on a variety of food items like roots, tubers, berries, carrion, rodents, insects, tadpoles, reptiles, birds, etc. They are more active during the morning and evening hours. They are highly prolific and breed throughout the year. 4-8 young ones are born in a litter. Gestation period is about 4 months. Sexual maturity is attained in a year. Longevity is about 20 years. Among the three Indian subspecies, *S. scrofa cristatus* is found in Kerala.

Status : This is a common animal, and in many areas adjoining forests, it is considered a pest, destroying cultivation. They are widely killed for this reason and for their meat. This animal is placed in schedule III of the Indian wildlife (Protection) Act, 1972.

Distribution in Kerala : Protected areas and their surroundings.

Family TRAGULIDAE Chevrotains

Family Tragulidae includes 4 species in 2 genera, distributed in the tropical rain forests of Africa, India and south East Asia. They are primitive members of the ruminants. They are small, deer-like animals with small pointed head, short neck, round back, large rear end, naked muzzle, slit-like nostrils and rounded ears. Horns are absent in both sexes. There are 4 toes in each foot. Canines of upper jaw in male are longer and sabre-shaped. Stomach is three chambered. Only one species is represented in India.

66. MOUSE DEER/SPOTTED MOUSE DEER/INDIAN CHEVROTAI

Moschiola meminna (Erxleben)Mal. Name : *Kooran/Koora man/Kooran Panni*

Range : India, Sri Lanka
and Nepal.

Habitat : Dense Evergreen,
Semi evergreen and deciduous
forests, and grassy hillsides.

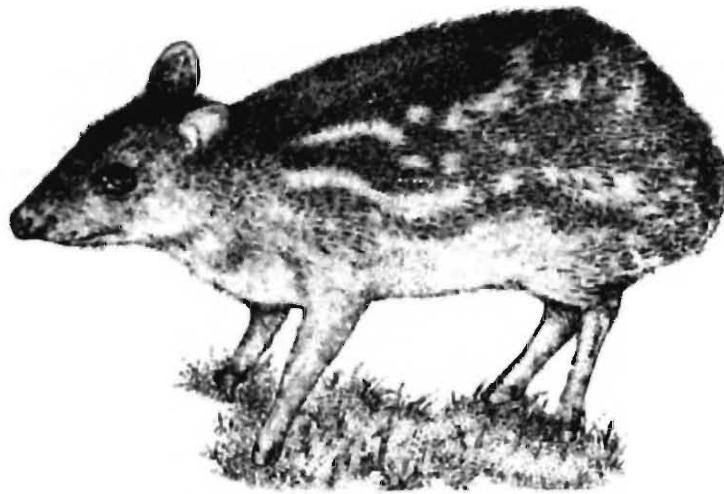
Size : HBL : 45-55 cm. TL
: 10-14 cm. Wt : 2.2-2.7 Kg.

Its small size, high hindquarters, olive brown coat with white stripes and spots characterise the mouse deer. The ventral side is white, and throat has three white stripes. As in the males of other Chevrotains, the male has elongated upper canines. There are no horns or antlers in both sexes.

The animal is very secretive and solitary, mostly restricted to forests. It is more active in morning and evening hours, feeding on leaves, buds, herbs, grasses, shrubs, fruits, etc. Large carnivores, snakes and large birds prey upon mouse deers. When in danger, this timid animal shows remarkable ability to get into holes and crevices to manage an escape. 1-2 young ones are born after a gestation period of 140 days. Young ones can be easily tamed.

Status : Loss of habitat, predation and hunting by man for its flesh have reduced the number of this animal in their natural habitats, and now the animal is seldom seen in many of its formerly distributed areas. This animal is placed in Schedule I of Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Protected areas.



Family CERVIDAE

True deers belong to the family Cervidae. There are 37 species in 17 genera comprising of small to large sized animals. Males possess a pair of horny antlers. In most species, antlers are shed each year to regrow again. They differ from the ox family in having a fissure in their skull below each eye, called the lachrymal fissure, and also in the presence of canine teeth or tushes in the upper jaw, as well as the absence of a gall bladder except in the musk deer.

67. CHITAL/SPOTTED DEER

Axis axis (Erxleben)

Mal. Name : *Pulli maan*

Range : India,
Bangladesh and Nepal.

Habitat : Woodlands,
Deciduous forests and
Plains.

Size : HBL : 110-140
cm. TL : 20-30 cm. Ht
: 75-100 cm. Wt : 75-100
Kg.

This is the common deer of deciduous forests of Kerala. This beautiful deer is characterised by its rufous fawn coat spotted with white. Spots on the lower flanks are in longitudinal rows. The



antlers generally have three points (tines). There is a dark dorsal streak from the nape to the tail. Muzzle is dark. Throat, ventral side and internal sides of the limbs are whitish. Head and external ear are brownish. Tail is ventrally white. Pure white animals (albinos) are also rarely reported.

Chital lives in herds of varying numbers. Herd size sometimes may exceed more than 800 individuals. A strong adult male is the leader of the herd. Other males, seen at the periphery of the herd, help in protecting the herd. They are more active in the mornings and evenings and take rest in the noon, under the shade. Usual food items are grasses, leaves, fruits, etc. They occasionally enter cultivated areas. They have association with other animals, particularly monkeys, because monkeys produce alarm sounds on the presence of predators like panther or tiger. Male chitals fight for the possession of herd and, sometimes, the fights are fatal. Male sheds antlers usually in the month of August and September. The velvet-covered stumps soon start to grow into antlers. The enemies of the spotted deer vary from tiger to leopard, wild dog, jackal and python. Alarm sounds produced, and the characteristic flickering of the tail are signals to warn the members about a possible danger.

Spotted deers breed throughout the year. Pairing is more intense during certain seasons, for example, just before the monsoon. Fighting for the possession of the herd is intense during breeding season. Fighters make harsh sounds like bellowing, and the combat follows in most cases. Usually a single young one is born after a gestation period of about 7 months. The Indian subspecies is *Axis axis axis*.

Status : Though shrinkage of Habitat has affected this animal, they are still common in most of the deciduous forests of Kerala. The animal is placed in schedule III of the Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Wynad, Parambikulam, Peechi-Vazhani and Chinnar wildlife sanctuaries.

68. SAMBAR

Cervus unicolor KerrMal. Name : *Kalaman, Mlavn, Malaan*

Range : India, Sri Lanka, Bangladesh, Myanmar, Nepal, China and S.E. Asia to Philippines.

Habitat : Deciduous forests and grasslands in hilly areas.

Size : HBL : 17-270 cm. TL : 22-35 cm. Ht : 90-150 cm. Wt : 200-300 Kg.

Largest of all Indian deers, this forest animal is characterized by its dark brown color, massive antlers, heavily maned neck and its elegant look. Ears are large and bell shaped. The coat is coarse and much of the hair is



shed in summer. The colour is slaty in summer. Older ones are still darker. Females and young ones are lighter in colour. The chin, inside of the limbs, tail and buttocks are yellowish. Under parts are paler. Antlers are 60-100cm. long, with three points (tines) on each bar. The animal mostly prefers forested or grassy hillsides and can be found some times near cultivation. They live alone or in herds. They are mostly active at night but can be seen feeding in daytime in less disturbed areas. Like other deers, they feed on grasses, leaves, buds, fruits etc. They possess a territory of about 0.5-1 sq. km. Males fight for territory, possessing a few hinds.

Males leave the harem after the rut season and may lead a solitary life. Like the chital, male periodically sheds the antlers.

Breeding season commences in November-December when pairing takes place. Young ones, one, rarely two, are born after a gestation period of about 8 months. Sexual maturity is attained in about 1½-2 years. Of the two Indian subspecies, the one present in Kerala is *C. unicolor niger*.

Status : The animal is fairly common in forests of Kerala. This animal is placed under schedule-III of the Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Protected areas.

69. BARKING DEER/MUNTJAC

Muntiacus muntjak (Zimmermann)

Mal. Name : *Kezha Man/ Kattadu*

Range : India, Sri Lanka, Bhutan, Bangladesh, Myanmar, south China, Japan and Indonesia.

Habitat : Evergreen, Semi evergreen, and deciduous forests, woodlands and grasslands.

Size : HBL : 89-135 cm. TL : 13-23 cm. Ht : 40-65 cm. Wt : 15-35 Kg.

Barking deer is medium sized, characterised by its dark brown coat. Its ventral side is paler. Chin, throat, inner side of legs and inner side of tail

are white. Small, 2 tined antlers set on bony, hair-covered pedicels are characteristic. Pedicels form ridges on each side of the face, so that the animal is sometimes called, 'rib faced deer'. Tusk-like upper canines about one inch in length are characteristic. The animal makes peculiar barking sound, hence the name, barking deer.



Muntiacus muntjak (Zimmermann)

Barking deer lives solitarily or in small groups possessing a

small territory of about 0.5sq.km, in hill forests. The animal is diurnal in habit and feed mostly during morning and evening hours. It feeds on grasses, herbs, leaves and fruits. The barking sound is mostly produced when alarmed. The animal also sheds its horns mostly in May/June.

They breed throughout the year; one or two young ones are produced after a gestation period of about 6 months. Sexual maturity is attained in 6-12 months. Longevity is about 15-20 years. Among the three Indian races, the one represented in Kerala is *M. muntjak malabaricus*.

Status : They are fairly common in the forests of Kerala. This animal is placed under schedule III of the Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : protected areas and their surroundings.

Family BOVIDAE

Cattle, Oxen, Sheep, Goats, Antelopes, Gazelles* and Nilgais* are included in this family. They are even-toed ungulates and most of them possessing horns in both sexes. Horns vary widely in form and size and are not shed. Their stomach is four chambered. They are cud-chewing animals. The family Bovidae is economically very important to human beings as many members of the family are domesticated for milk, meat and use in transporting goods.

*Not represented in Kerala.

70. FOUR-HORNS ANTELOPE/CHOWSINGHA

Tetracerus quadricornis (Blainville)

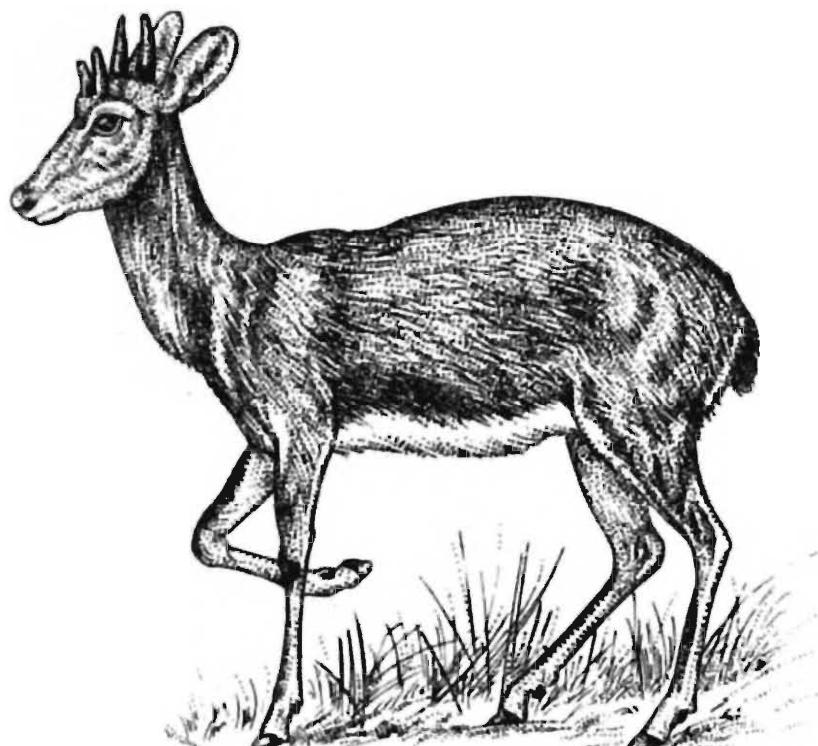
Mal. Name : *Nalkomban Man*

Range : Peninsular India.

Habitat : Deciduous woodlands.

Size : HBL : 90-110 cm.
TL : 10-15 cm. Ht : 55-65 cm. Wt : 15-25 Kg.

In Kerala, this animal is seen in Wyanad only. It is easily distinguished from true antelope by the distinctive structure of the horns that are not ringed as in true antelopes. Horns are keeled in front. Female does not have horns. Four-horned Antelope has two pairs of horns, the front pair shorter (2-4 cm) than the posterior pair (8-10 cm).



The coat colour of the male is dull red brown above, and whitish on the ventral side. Older male is yellowish. A dark stripe down the front of each leg is characteristic. The fur is thin, harsh and short. Broad and bare nasal speculum, large gland patches on false hooves of rear legs, and the presence of two cheek-spots are other diagnostic features.

Four horned Antelope is not a gregarious animal, but it lives singly or in pairs, mostly in open hill forests, near water sources. The animal is usually nocturnal and reclusive. It is possibly monogamous and territorial. Bucks are said to be aggressive during the mating season, which commences from the month of June. 1-3 young ones are born at a time, after a gestation period of about 8 months. Young ones can be tamed. Longevity is about 10 years.

Status : Vulnerable. Shrinkage of habitat and poaching for its flesh has reduced the number of this animal considerably, and it is now rare in many of its previously distributed areas. This animal is placed under schedule I of the Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Wyanad wildlife sanctuary.

71. GAUR/INDIAN BISON

Bos frontalis Lambert

Mal. Name : *Kattu pothu, Katti*

Range : India, Sri Lanka, Bangladesh, Nepal, Myanmar and S.E. Asia.

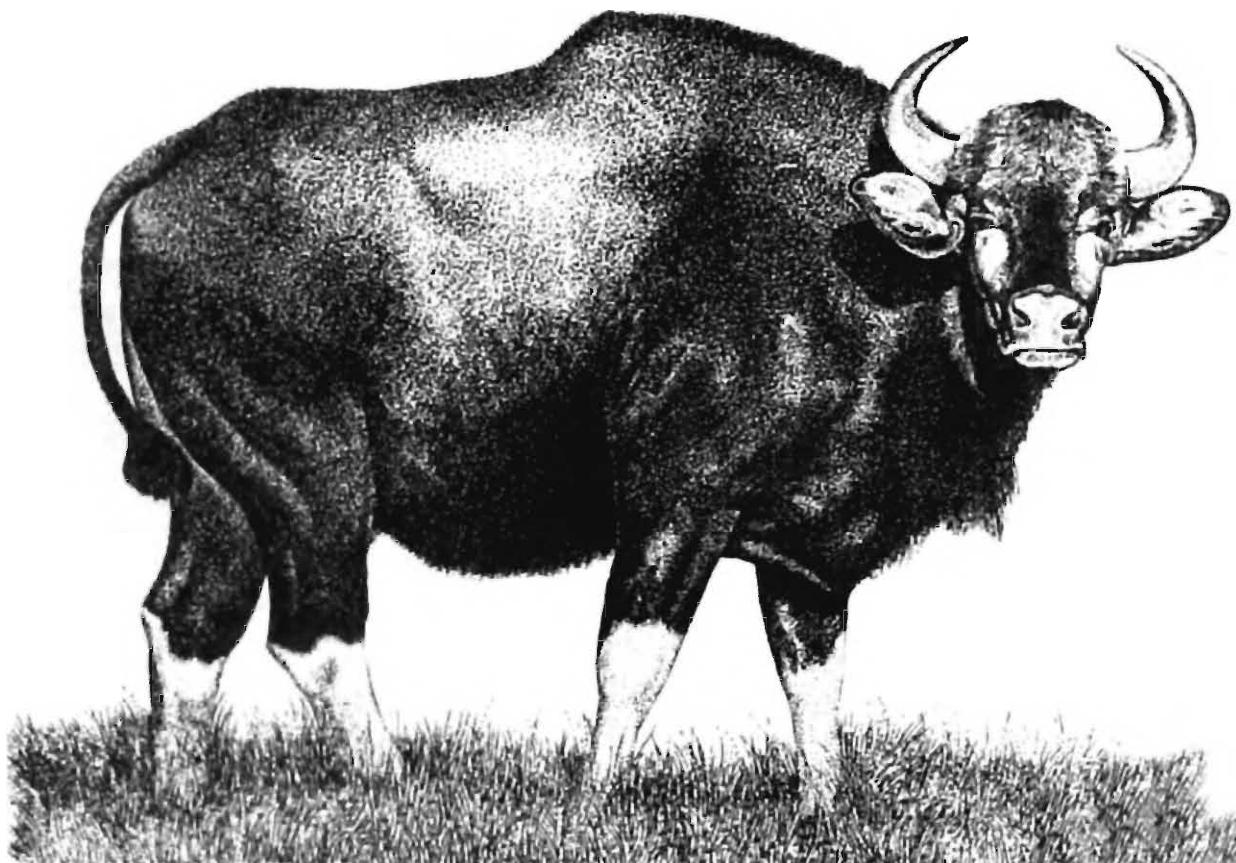
Habitat : deciduous forests and grasslands

Size : HBL : 250-340 cm. TL : 70-110 cm. Ht : 170-200 cm. Wt : 940 Kg.

The massive body, large head, thick horns and predominant muscular ridge from shoulder to the middle of the back characterise this strongly built animal. The colour varies from light brown to reddish brown and black. Older ones are jet black whereas the newly born are golden yellow

to fawn. Horns, which form an almost half circle, are pale greenish with black tips. There is a semi-cylindrical crest at the base of the horn. Horns of the cow are narrower than that of the bull. Legs of males and females are white from knee downwards.

Gaurs live in small herds of 8-12 individuals but during the seasons when food and water are not enough, they form larger herds and migrate. The group consists of males, females, old and the young. Exclusive male groups are also reported. The animal is generally diurnal in habit but become nocturnal in disturbed areas. They mostly graze in the mornings and evenings taking shelter in the noon. The diet includes grasses, shoots, leaves, barks of trees, fruits etc. The animal does not bathe or wallow like buffaloes. During the breeding season, males roam in search of receptive females and once found, the mate defends the female from other males.



Bos frontalis Lambert

Usually one, rarely two, calf is born after a gestation period of about 285 days. Sexual maturity is attained in 2-3 years. Longevity is about 20 years.

Status : Vulnerable. Gaurs once widely distributed on the hill tracts and, to a certain extend, foothills of Kerala, are now confined to sanctuaries. Poaching for its flesh and skin and destruction of its habitat are the major reasons for its decline. Rinder pest, foot and mouth diseases etc., often transmitted from cattle, take a heavy toll of this species in many states. This animal is placed under schedule I of the Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Protected areas.

72. NILGIRI TAHR

Hemitragus hylocrius (Ogilby)

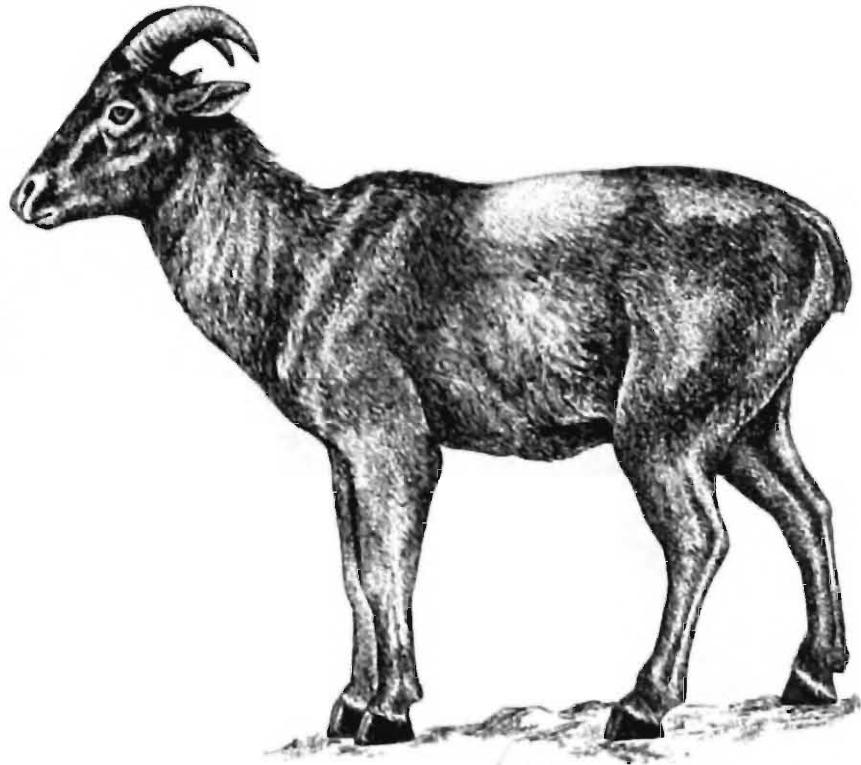
Mal. Name : Varayadu

Range : S. India.

Habitat : Grassy uplands and lofty tablelands.

Size : HBL : 150 cm (Male); 110 cm (Female). TL : 10-15 cm. Ht : 110 (Male); 80 cm. (Female). Wt : 100 kg. (Male); 50 kg. (Female).

In India, two species of Tahrs are seen, the Himalayan Tahr of the Himalayan region and the Nilgiri Tahr of S. Western Ghats. Nilgiri Tahr is the only wild goat of Kerala.



Though slightly larger than the Himalayan Tahr (*H. jamlahicus*), Nilgiri Tahr resembles it in most features. The coat colour is dark brown or almost black. Hairs are short. A silvery saddle patch that appears on the loin of the adult male is characteristic. Female is yellowish grey, with a white belly. Male has a short mane on its neck and shoulder. Male has white knee spots, which are black in female. Horns, which are transversely wrinkled, are curved back. Outer surface of the horns are rounded. Only a single pair of teats is present.

Tahr is an animal of higher elevations (1220-1830m), enjoying temperate climate. They live in herds of 5-50 individuals; even larger herds are seen occasionally. They are highly adapted to climbing up and down the steep hill slopes. They are active early in the morning and evening, and feed mainly on grasses and herbs. The herd possesses a territory. Old bucks often lead a solitary life except during the breeding season. When the herd rests, one or more stand as 'sentinels' This behaviour is seen in many other wild goats. Major predators of the Tahr are, Panther, Tiger and Wild dog.

Breeding season probably extend throughout the year, as lambs can be seen in most months. One or two young ones are born after a gestation period of about 180 days.

Status : Endangered. This is an endemic species of Southern Western Ghats. The population of this endangered animal has suffered heavily due to poaching, habitat loss, establishment of human settlements and diseases. According to the 1977 census, around 2200 individuals in 17 populations existed in its range. 1986-87 censuses for Kerala state alone, figured around 1008. The Nilgiri Tahr is placed in Schedule I of Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Eravikulam and Silent Valley National Parks; Periyar Tiger Reserve; Parambikulam and Peechi-Vazhani wildlife sanctuaries; Nelliampathy and Ponmudi Hills.

Order PHOLIDOTA
Pangolins

The order Pholidota comprises of animals commonly known as Scaly anteaters or Pangolins. There is only one family represented. Its members are small to medium sized animals having their body covered with hard, flattened, movable, overlapping and sharp edged scales. They are all nocturnal in habit and adapted to the burrowing mode of life, feeding mostly on termites and ants (hence the name, 'ant eaters'). Snout is pointed, tongue long, pointed, protrusible and glutinous. Jaws are toothless. Forelimbs with strong claws act as a kind of digging tools. Eyes are small with thick eyelids. External ears are much reduced. The animal can roll up more or less completely to escape from enemies and it is very difficult to dislodge it from this condition. Order Pholidota includes seven species distributed in Africa, South and S.E. Asia. Two species are known from India, of which a single species is present in Kerala.

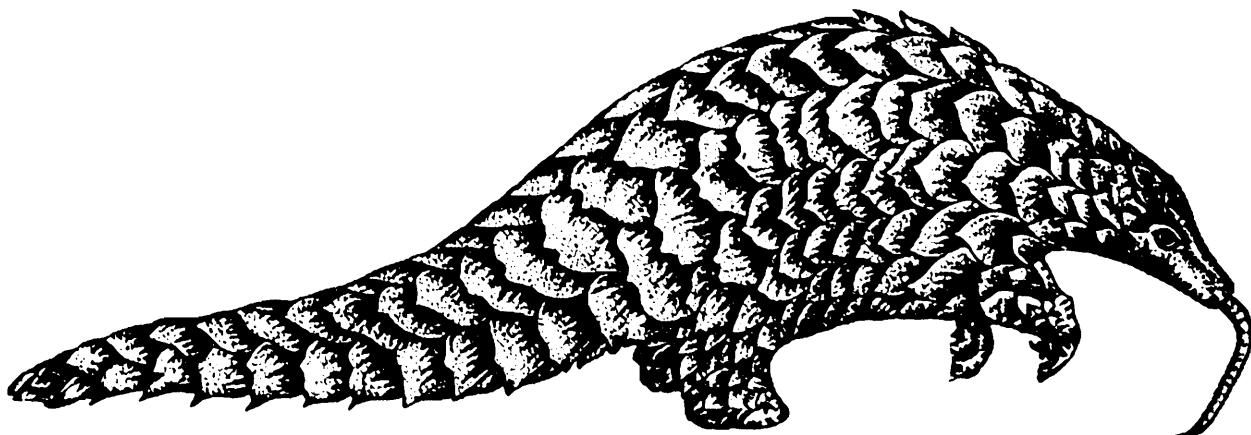
73. INDIAN PANGOLIN

Manis crassicaudata Gray

Mal. Name : *Enampechi, Alungu, Urumbutheeni*

Range : India, Sri Lanka, Bangladesh, Nepal, Myanmar and S.China.

Habitat : Moist deciduous forests.



Size : HBL : 60-75 cm. TL : 45-55 cm. Wt : 8-9 Kg.

This nocturnal animal is well characterised by hard, overlapping scales, which cover the upper parts of the head, back, sides of the body, limbs and whole of its tail. Scales that are modified hairs are yellowish brown in colour and striated at the base. There are 11-13 rows of scales round the body. A few thick bristle-like hairs are seen on the underside and between the scales. Feet are provided with strong claws for digging. Middle claws are prominently larger. Tail that is broader at the base is slightly shorter than the body. The animal can curl itself into a ball when attacked. Pangolins live in burrows dug by it with the help of its strong curved claws. It generally moves very slowly with its tail held above the ground. It often stands on its hind legs to have a better view of the surroundings. Main food items are, termites, ants and their eggs. Termite and ant mounts are broken with the strong forelimbs and the insects are caught with the help of glutinous tongue and swallowed. They have an acute sense of smell that helps in locating food. Sight and hearing are poorly developed. The only sound that the animal produces is an aggressive snort or loud hiss.

Very little is known about the breeding biology of this animal. Usually one, rarely two young ones are born. The newborn has soft scales. The mother on its tail carries young ones and when disturbed will hold the baby on its ventral side and curl on.

Status : This animal is fairly distributed throughout India. The threat faced by this species in many parts of India is hunting by man due to his superstitious belief regarding the aphrodisiac properties of its flesh. Tribals also use its scales as ornaments. The animal is placed in Schedule I of the Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Throughout, but patchy in distribution.

Order LAGOMORPHA
Rabbits*, Hares and Pikas*

Rabbits, Hares and Pikas comprise this order. There are 58 species under 11 genera in 2 families (1. Leporidae : hares and rabbits; 2. Ochotonidae : mouse hares). Though formerly classified along with rodents, they are distinct in many features. Their fur is long and soft and the feet are fully furred. Ears are large. Two pairs of incisors are present on the upper jaw. The nose has a slit like nostril that can be closed by a fold of skin above. Testes are permanently external. Lagomorphs are predominantly vegetarians, feeding on grasses, rhizomes, leaves and bark.

* Not represented in India.

Family LEPORIDAE
Hares & Rabbits*

This family of small herbivorous mammals comprises of about 44 species in 10 genera, distributed in most parts of the globe. Long, well-developed limbs and feet of these animals are their adaptations for fast running. Neck is short. Ears are long and mobile. Tail is short and soles haired. A median fissure on the upper lip called "hareline fissure", divide the upper lip. Teeth are adapted for gnawing and the chisel shaped incisors grow throughout life.

*Not native to India.

74. THE INDIAN HARE/BLACK NAPED HARE
Lepus nigricollis F. Cuvier
 Mal. Name : *Muryal, Chevian, Komban.*

Range : India, Pakistan, Bangladesh, Sri Lanka and Nepal.

Habitat : Deciduous forests, Bush lands and Grasslands.

Size : HBL : 48 cm. TL : 6 cm. Ear : 12 cm. Wt : 2.2-3.6 Kg.

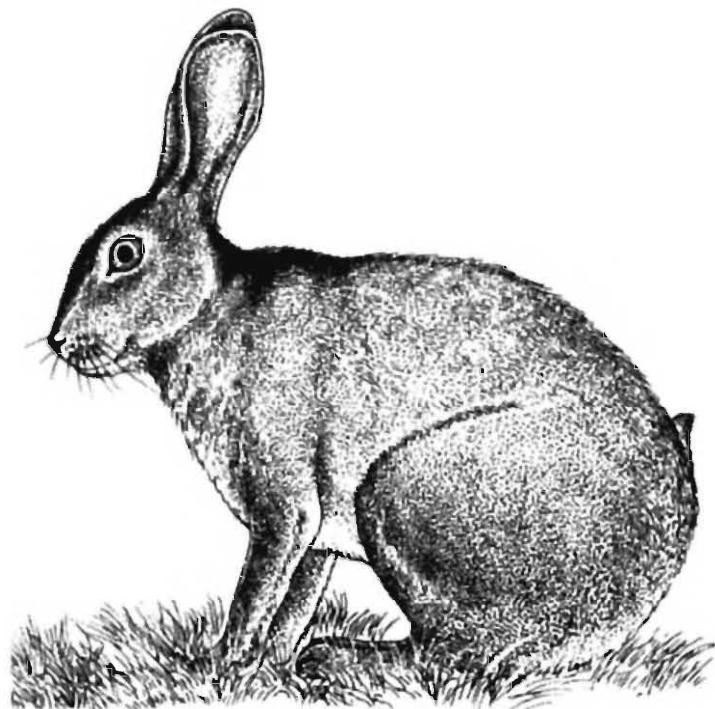
The dark brown or black patch on the back of its neck is characteristic, hence the name 'black naped hare' to this species. The upper part of the body is greyish red, mottled with a few black hairs. Chin and abdomen are white.

Ears long, black at the base, greyish brown internally and white at the apex. Feet yellowish. Tail grizzled, but white beneath.

This animal is seen throughout Kerala in open country, forests and low hills. They do not live in burrows as rabbits do, but hide under grasses or bushes. They are non-social and mostly nocturnal or crepuscular. They feed on grasses, rhizomes and leaves. Apart from large carnivores, jackal, fox, dogs, mongoose, jungle cat and large birds of prey often prey upon them. Instant flight by leaping is the way to escape from predators and often they get into burrows or holes to escape. Breeding season is between October and February. Litter size varies from one to four. Out of 7 subspecies represented in India, the subspecies *Lepus nigricollis nigricollis* is found in Kerala.

Status : Apart from the diminishing habitats, hunting for its flesh is the major reason for decline in population of this animal.

Distribution in Kerala : Throughout.



Lepus nigricollis F. Cuvier

Order RODENTIA
Rats, Mice, Squirrels, Porcupines etc.

Rodents are comparatively small sized animals and form the largest group of mammals comprising of about 1700 species in 389 genera under 30 families. Rodents include squirrels, rats, mice, marmots**, porcupine, beavers*, jerboas, gophers, cavies* etc. They are all herbivores and their mode of feeding includes gnawing, scraping or nibbling. They possess four sharp chisel shaped incisors (2 each on upper and lower jaw), which grow throughout life to compensate for the wear and tear. Many rodents are serious pests destroying crops and stored food grains. Some like rats are carriers of serious diseases like Bubonic Plague. They have a high breeding rate and many show periodic increase in population commencing with the availability of food. Three families of rodents occur in Kerala. They are :

1. Sciuridae (Squirrels); 2. Muridae (Rats, Mice, Gerbils and Dormouse);
3. Hystricidae (Porcupines).

*Not represented in India ** Represented in India but not in Kerala.

However, recent classification places dormouse in a separate family of Platacanthomysidae.

Family SCIURIDAE
Squirrel family

This family includes squirrels and marmots**. The group comprises of 267 species in 49 genera. Their size vary from mouse-like African Pygmy squirrels (5") to cat sized marmots. The long cylindrical body with a bushy tail characterises them. They usually have large eyes and sharp eyesight. Fore limbs are much shorter than the hind limbs. Squirrels are adapted to arboreal mode of life. Males, females and young ones are similar in appearance. They are largely vegetarians feeding on nuts, seeds, fruits, etc. Gestation period is about 3-6 weeks. Longevity is about 10-20 years. Squirrels in Kerala can be broadly classified into three categories; they are :

1. Striped Squirrels; 2. Giant Squirrels; 3. Flying Squirrels.

**Represented in India but not in Kerala.

STRIPED SQUIRRELS

Striped squirrels are small sized squirrels having distinct longitudinal stripes on their back. There are three species of striped squirrels in Kerala. They are: Three-striped palm squirrel, Jungle striped squirrel, and Dusky striped squirrel. The latter two are forest species.

75. THREE STRIPED PALM SQUIRREL

Funambulus palmarum (Linnaeus)

Mal. Name : *Annan, Annakottan, Annara kannan.*

Range : Peninsular India and Sri Lanka.

Habitat : Forests and countryside.

Size : HBL : 16-17 cm. TL : 14-15 cm.

This is the commonest squirrel seen in the villages of Kerala. This small squirrel has its upper parts dusky greenish grey in colour with three yellowish white lines on its back. There are two additional fainter lines, one each on either side of the flanks. Under parts are paler or white. Tail is bushy with the hair colour variegated with red and black. Ears are rounded.



This diurnal animal is very active moving from tree to tree frequently flicking its tail and making the characteristic 'chill-chill' sound. They eat fruits, nuts, buds, tender shoots, bark, nectar etc. When coral trees and silk cotton trees flower, a number of squirrels assemble there to drink nectar. During the breeding season, the females build nests made of leaves, fibers, dry grasses etc. 2-3 young ones are born in a litter, after a gestation period of about 6 weeks. The newborn are blind. Among the 4 or more races of this animal, the one present in Kerala is *F. palmarum palmarum*.

Status : This squirrel is very common in villages and in many areas it is considered as a pest of orchards.

Distribution in Kerala : Throughout.

76. JUNGLE STRIPED SQUIRREL

Funambulus tristriatus (Waterhouse)

Mal. Name : *Varayan annan*

Range : India and Sri Lanka.

Habitat : Forests.

Size : HBL : 18-19 cm. TL : 18-19 cm.

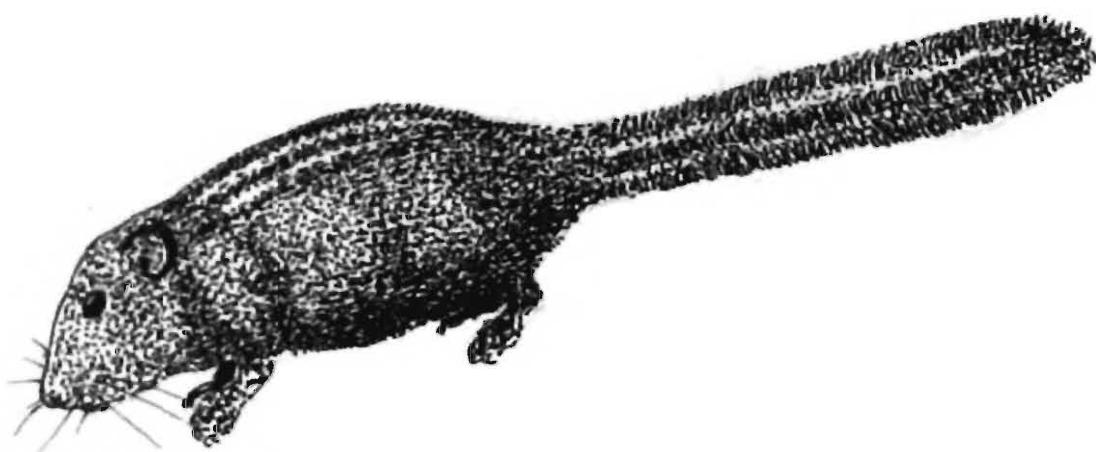
This forest species is slightly larger than the common palm squirrel. Its coat colour is darker when compared to the common palm squirrel. The stripes are small, narrower and dark brown or black. Face, back, forehead and haunches are tinged with rusty red, but more grayish on shoulders. Tail rusty red below and the sides darker than that of the common palm squirrel.

This squirrel is mostly confined to forests or well-wooded areas. They are generally shy and rarely approach human habitations. Not much is known about the habits of this animal. Races represented in Kerala are *F. tristriatus tristriatus* and *F. t. wroughtoni*.

Status : Uncommon.

Distribution in Kerala : Eravikulam National Park; Kollam, Ernakulam, Thiruvananthapuram and Kasaragod districts.

77. DUSKY STRIPED SQUIRREL
***Funambulus sublineatus* (Waterhouse)**
 Mal. Name : *Irunda Varayannan*



Range : S. India (Karnataka, Kerala, Tamil Nadu) and Sri Lanka.

Habitat : Hill forests.

Size : HBL : 14-16 cm. TL : 15 cm.

About the size of a palm squirrel, this animal is distinctly smaller than other forest squirrels of Kerala. Its distinctive features are the soft and dense dark grizzled olive brown coat with three pale lines alternating with four dark lines on the dorsal side. Tail is also grizzled olive brown in colour.

This shy diurnal animal is seen in dense forests of hilly areas. It has a strange habit of foraging with hunting parties of birds. Not much is known about the breeding habits of this animal. Race in Kerala is *F. sublineatus sublineatus*.

Status : Apparently rare.

Distribution in Kerala : Thiruvananthapuram, Ernakulam and Wyanad districts.

GIANT SQUIRRELS

Giant squirrels are large sized tree squirrels, weighing up to 3 Kg. In fact, the genus *Ratufa* has the largest known tree squirrels. Among the three Indian species, two are represented in Kerala. These are the Indian Giant Squirrel and the Grizzled Giant Squirrel.

78. THE INDIAN GIANT SQUIRREL

Ratufa indica (Erxleben)

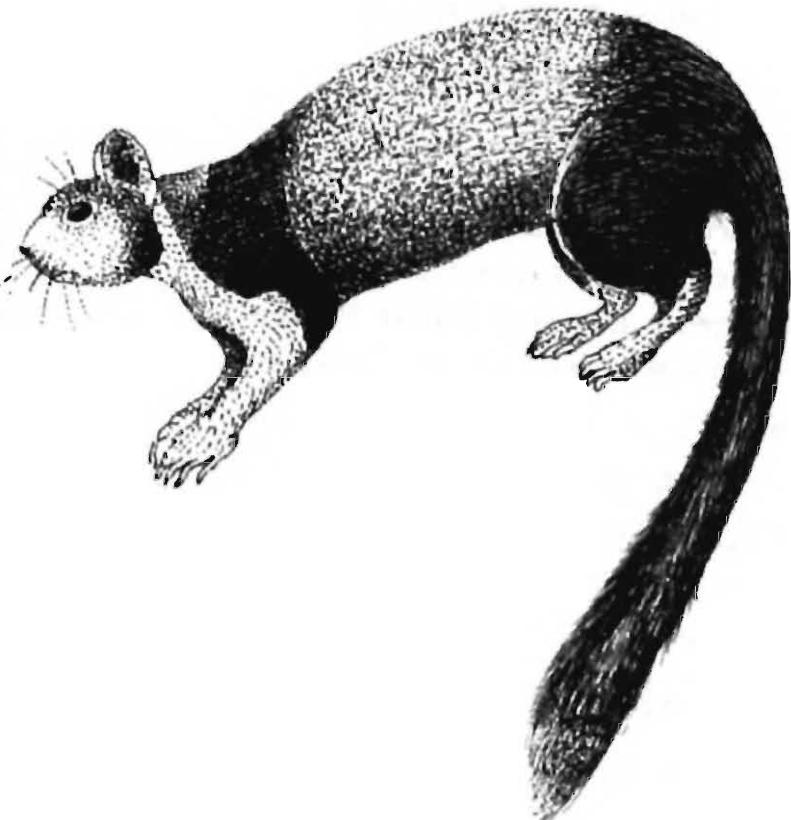
Mal. Name : *Malayannan*.

Range : Central and South India.

Habitat : Semi evergreen and deciduous forests.

Size : HBL : 40-46 cm. TL : 50-54 cm.

In India, a number of races of this squirrel are reported. *Ratufa indica maxima*, the subspecies found in Kerala, is characterised by its coat colour, which is bright maroon chestnut on its back and flanks. Rump, upper regions of the limbs and tail are black. Forehead is reddish brown and the Muzzle and cheeks are rufous. Under parts and inner side of legs are yellowish. Ears are small, rounded and hairy.



This beautifully coloured forest squirrel readily catches the attention by its elegant appearance and rattling call. They are highly arboreal and seldom come to the ground. They are very active, moving from trees to trees at amazing speed. Giant squirrels are solitary or live in pairs and are diurnal in habit, mostly active in the morning and evening. Frequently they make rattling calls. They make a few (2-4) large globular nests in different trees using twigs, leaves etc. Young ones are born in these nests. Young can be easily tamed.

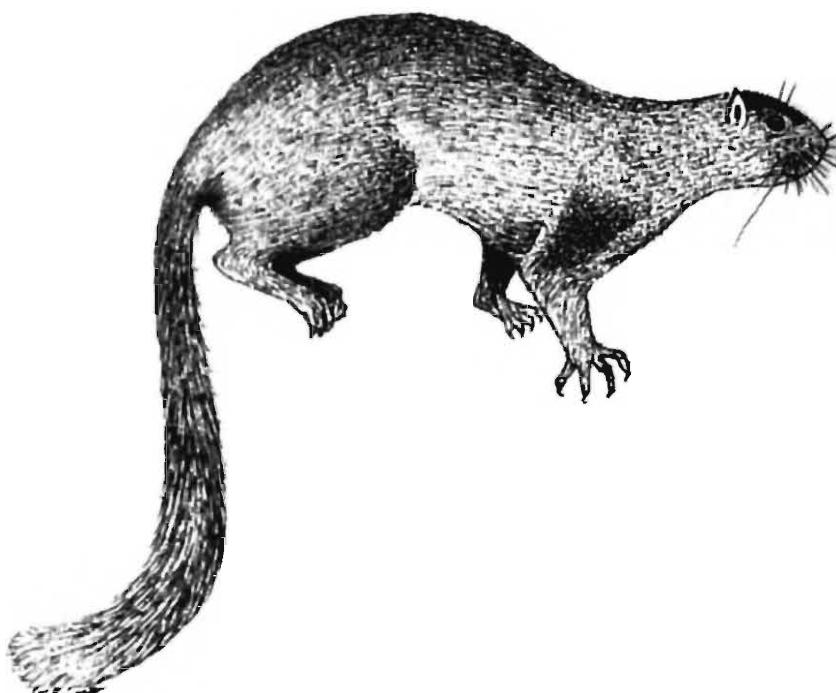
Status : This is a fairly common animal found in most of the forest tracts of Kerala. The population of this species has declined considerably owing to the habitat loss, hunting for flesh and fur, collection of young ones as pets, etc.

Distribution in Kerala : Forested tracts.

79. GRIZZLED GIANT SQUIRREL

Ratufa macroura (Pennant)

Mal. Name : *Chambal Malayannan, Puliylayannan*



Range : South India and Sri Lanka.

Habitat : Deciduous and evergreen forests.

Size : HBL : 29-41 cm. TL : 35-40 cm.

This large sized squirrel is distributed in Kerala, Tamil Nadu and Sri Lanka. In Kerala, it is seen in Chinnar Wildlife sanctuary alone.

Slightly smaller than the Malabar Giant Squirrel, this animal is characterized by its coat colour which is brownish grey grizzled with white on upper parts of the body and tail. Crown of the head, shoulders and toes are blackish brown. Ventral side including chin and neck and inner side of limbs are white or yellowish white. Ears are ovate and pointed but not tufted. This is also a diurnal squirrel inhabiting deciduous and evergreen forests. They are highly arboreal, seldom descending to the ground. They feed on fruits, leaves, nuts, insects etc. They build large globular nests on trees made of twigs and leaves. One or two young ones are born in these nests. The race in India is *R. macroura dandolena*.

Status : In India, this species has a limited distribution, limited to Srivilliputhur in Tamil Nadu, Kavery Valley in Karnataka and Chinnar in Kerala. In Kerala, their population is not much. Their localized Habitat and small population size emphasizes the need for protecting their habitat. The animal is placed in Schedule-I of Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Chinnar wildlife sanctuary.

FLYING SQUIRRELS

Flying squirrels possess a fold of skin called patagium, which connects their fore and hind limbs. By outstretching the patagium, they can glide through the air at considerable distance. They are slender bodied, with a bushy tail. Large and Small flying squirrels are represented in Kerala by a single species each.

80. LARGE BROWN FLYING SQUIRREL

Petaurista philippensis (Elliot)

Mal. Name : *Parachathan, Valia paran, Parayannan, Paran*

Range : India, Sri Lanka, China, Taiwan and Java.

Habitat : Evergreen, semi evergreen and deciduous forests.



Petaurista philippensis (Elliot)

Size : HBL : 30-45 cm. TL : 32-61 cm. Wt : 0.6-2.5 Kg.

The Large brown flying squirrel has its upper parts dusky brownish red, grizzled with white in colour. Under parts are brownish grey to white, which extends below the tail. The patagium and upper parts of the limbs are more brownish. The muzzle, feet and terminal half of the tail are dark brown to black. The male has an irregular rufous patch on the sides of the neck, which in female is pale fawn in colour. Tail is very bushy and is longer than the head and body, put together. Female has six mammae; two are pectoral and four abdominal.

This nocturnal, almost arboreal squirrel is more restricted to the forested areas. They spend the daytime in holes of trees and come out at dusk. The soft long cooing sound of the flying squirrel is peculiar. They mainly feed on fruits, shoots, bark, insect larvae, beetles, etc. Females make nests out of leaves, fibers etc. in holes of trees. One or two young ones are born in a litter. They can be easily tamed when taken young, but the survival rate in captivity is very low.

Status : Once common to forests and well wooded areas in villages of Kerala, they are now more confined to forests only.

Distribution in Kerala : Throughout.

81. THE SMALL TRAVANCORE FLYING SQUIRREL

Petinomys fuscocapillus (Jerdon)
Mal. Name : *Cheu Paran, Konchan Paran*

Range : South India and Sri Lanka.

Habitat : Evergreen and deciduous forests.

Size : HBL : 19 cm. TL : 17 cm.

This species is much smaller than the Large Brown Flying Squirrel. The upper part of the body and tail is reddish brown in colour, and head is darker. Cheek, throat and belly are rufous white. The patagium is dark brown above and yellowish below, and the margins rufo-fulvous. Tail is shorter than head and the body, and with a white tip. Ears are of moderate size, and ovate shaped in the posterior. General habit of this animal is not known much.

Status : The subspecies *P. fuscocapillus fuscocapillus* is a rare and little known squirrel restricted mostly to the forests of South Kerala. Being endangered, it is placed in Schedule I of Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Pathanamthitta, Idukki, Kollam, Ernakulam, Thrissur, Wayanad, Palakkad and Kannur districts.

Family HYSTRICIDAE Porcupines

Family Hystricidae includes porcupines, which are large rodents with short limbs. Porcupines are primarily ground living animals. They are nocturnal in habits, living in burrows dug by them. Most of the hairs on the back, sides and tail are modified into long spines. Both sexes look alike. They are vegetarians, feeding mainly on roots, tubers, barks, fruits etc. Distributed in Africa and Asia, this family includes 12 species in 4 genera. India is represented with three species, of which a single species is seen in Kerala.



82. INDIAN PORCUPINE

Hystrix indica Kerr

Mal. Name : *Mullan Pannni*

Range : Syria, Iraq, Saudi Arabia, Iran, Turkey, Kazakhstan, Indian Subcontinent and Tibet.

Habitat : Forests, scrubs, countryside, open lands, rocky hillsides.

Size : HBL : 70-90 cm. TL : 8-10 cm. Wt : 11-18 Kg.

Porcupines are unique among rodents by their large size, presence of long spines called quills and thick bristles on the body. The quills, which are 15-30cm. long, are mostly confined to back and tail. These are actually modified hairs and coloured alternatively with dark brown or black and white. The crown of the head has a crest of long, thick and mostly black bristles; hence, the animal is sometimes called, 'the Crested Porcupine' Neck and shoulders are covered with thick bristles. Quills and bristles are interspersed with hairs. Whiskers are long and black.

Porcupine is a nocturnal animal and it becomes active after dusk. They live in burrows dug by them. The burrow has several openings to facilitate escape in emergencies. Their sense of smell is highly developed. When

alarmed, they erect their quills and make a grunting noise. When approached by enemies, they fearlessly attack them. The mode of attack is peculiar i.e., they move backwards towards the enemy with the erect quills and these quills of the hindquarters are thrust into the body of the enemy.



Contrary to the common belief, they are not able to shoot quills towards the enemy. Even tigers and leopards are sometimes attacked and killed. Porcupines feed mainly on roots, tubers, fruits etc. They have the habit of gnawing the bones and shed antlers of deers. This enables them to restore the calcium loss suffered by shedding of quills.

One to four young ones are born in a litter. Young when born are with open eyes and body covered with short and soft spines. Young ones can be tamed.

Status : This animal is fairly common in rocky areas, forests and wooded countryside throughout Kerala. The subspecies in Kerala is *H. indica indica*. This animal is placed in Schedule II of Indian Wildlife (Protection) Act, 1972.

Distribution in Kerala : Throughout.

Family MURIDAE
Bandicoot rats, Rats, Mice, Gerbils etc.

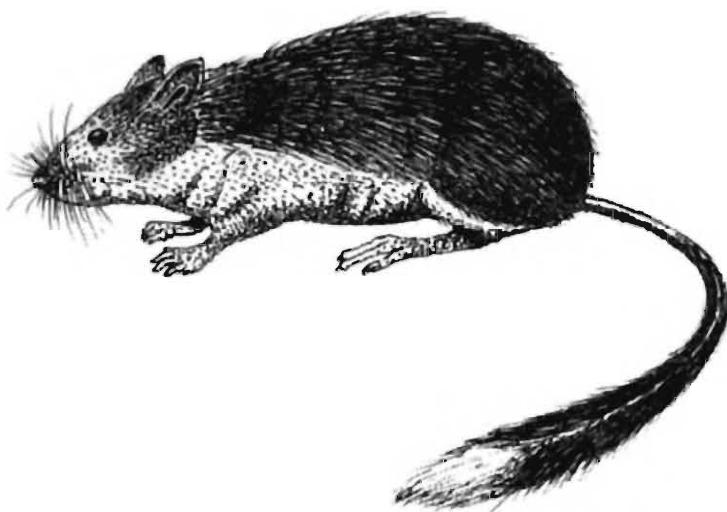
The family Muridae comprises of Bandicoot rats, Rats, Mice, Gerbils, Dormice, Metads etc. They are probably the most successful mammals, adapted to varied and hostile conditions. About one sixth of all mammals are murids. Many are pests destroying stored grains, root crops and house hold articles. Some act as reservoirs of many diseases like Plague, Typhus, Rabies, Leptospirosis etc. They have a high reproductive rate, which sometimes lead to rapid increase in population. There are about 1082 species distributed worldwide in 241 genera under 15 subfamilies. The three subfamilies of Muridae represented in Kerala are,

1. *Platacanthominae* (Oriental dormice);
2. *Gerbilinae* (Gerbils) and
3. *Murinae* (Old world rats and mice).

83. MALABAR SPINY DORMOUSE

Platacanthomys lasiurus BlythMal. Name : *Mutteli/ Mulleli.**Range* : South India.*Habitat* : Forests.*Size* : HBL : 13-21 cm.
TL : 7.5-10 cm.

The sub family *Platacanthomyinae* (Oriental Dormice) of the family Muridae is represented by 2 species under 2 genera only. They are, *Platacanthomys lasiurus* of south India and *Typhlomys cinereus* (Chinese Dormice) of south China and Vietnam forests. Oriental Dormice resemble true Dormice (Family:Gliridae) in external features and in the pattern of traverse ridges on the molar teeth. There are only 3 molar teeth on each row that are not preceded by a premolar. The fur is interspersed with pointed spines. Tail is bushy.



This animal is seen in wooded rocky hills. They are well adapted to tree climbing. Their feet are provided with sharp claws and padded soles and the digits spread widely. They make nests using moss and leaves in tree holes, cavities or rock crevices. Diet includes seeds, gram, fruits etc. and it is a pest of pepper in many areas; hence, it is known as, 'pepper rats'. They also attack cardamom and jack fruits. Further details of its habits are not available.

Status : Apparently rare. This is the only species of the genus *Platacanthomys* and it is endemic to Western Ghats. Kani and Mannan tribes use them for medicinal purpose, as they believe that the flesh and spines of this species are a cure for respiratory diseases.

Distribution in Kerala : Eravikulam and Silent Valley National Parks, Periyar Tiger Reserve and Aralam, Wayanad and Peppara Wildlife Sanctuary. A recent study by Jayahari (pers. Comn.) recorded this species from almost all procted areas of the state.

84. INDIAN GERBIL/ANTELOPE RAT

Tatera indica (Hardwicke)

Mal. Name : *Vayaleli/Velleli*

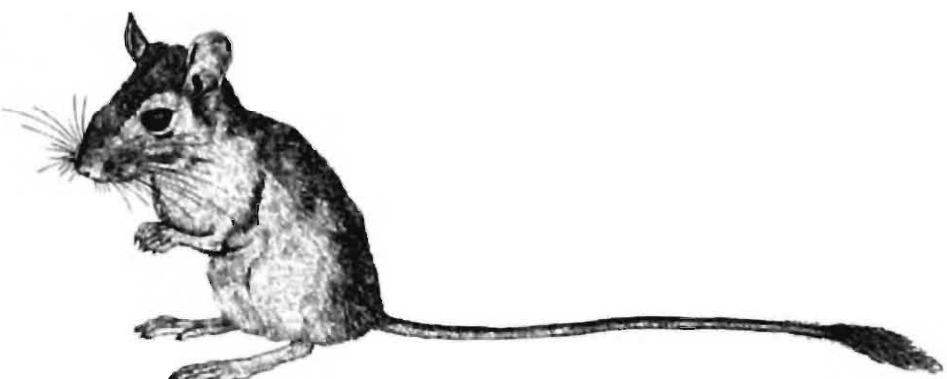
Range : India, Pakistan, Nepal, Sri Lanka, Afghanistan, Iran, Iraq and Syria.

Habitat : Crop fields, fallow and wastelands.

Size : HBL : 14-19 cm. TL : 15-20 cm. Wt : 100-230 gm.

The subfamily Gerbilinae differs from rats (Murinae) by having a long hairy tail (longer than head and body), ending in a tassel as well as having long hind limbs. Indian Gerbil is a large soft furred animal. Its coat colour is sandy brown or reddish brown above, paler on sides and white below. Whiskers are long and black. Whitish eyebrows are present. Ears are large and almost nude. Hind feet are white in colour. It has four pairs of mammae.

This communal animal is seen in dry areas, cultivated lands, grasslands and bush lands. It lives in deep burrows with numerous entrances and chambers. The nest chamber of the burrow is lined with grass. The animal eats grass, seeds, shoots, roots, insects etc. They store grains in burrows. They run, and hop and sit on their hind legs to have



a better view of the surroundings. When alarmed, they quickly leap into burrows to escape. Major enemies of Gerbils are fox, mongoose, owls and snakes. 8-12 young ones are born in a litter in the nesting chamber inside the burrow. Longevity in captivity is about 7 years. The subspecies represented in Kerala is *T. indica cuvieri*.

Status : Not uncommon. This species is destructive to paddy. They also destroy coconut seedlings by feeding on the tender parts of the shoot.

Distribution in Kerala : Thiruvanthapuram, Palakkad, Thrissur, Kannur and Kasaragod districts.

85. LARGE BANDICOOT RAT

Bandicota indica (Bechstein)

Mal. Name : *Peruchazhi, Thurappan, Panni Eli*

Range : Indian subcontinent, China, Vietnam and Indonesia.

Habitat : Forests, fields, compounds.

Size : HBL : 30-40 cm. TL : 30-35 cm. Wt. : 0.9-1.4 Kg.

Bandicoots differ from rats by their larger size, sturdy body, rounded head, short muzzle and rounded ears. The animal has the habit of raising its hairs like a mane when excited. A large Bandicoot rat can be readily distinguished from the Lesser Bandicoot rat by its large size. The coat



colour is dusky olive brown above with some black bristly hairs and its ventral side is grey. Palm and feet are dark. Tail is dark and uniformly coloured, covered with thin minute spiny hairs. Six pairs of mammae are present.

This animal is seen around human habitations in both villages and towns. They sometimes make damages to buildings or compound walls by their burrowing habit. They are omnivorous, but mainly feed on grains, tubers and other vegetable matter. Bandicoots breed throughout the year and 5-10 young ones are born in a litter after a gestation period of 20-21 days. Race represented in Kerala is *B. indica malabarica*.

Status : A common pest.

Distribution in Kerala : Throughout.

86. LESSER BANDICOOT RAT/INDIAN MOLE RAT

Bandicota bengalensis (Gray)

Mal. Name : *Chinna Peruchazhi, Chinna Panni Eli*

Range : Indian subcontinent, Malaysia and Indonesia.

Habitat : Forests, Agricultural lands.

Size : HBL : 15-23 cm. TL : 13-18 cm.

This rodent is similar to the Large Bandicoot rat in general appearance but distinctively smaller. Hairs on the body are coarse in texture and are dark greyish brown above and pale grey to dark grey below, in colour; tail is dark and hind feet are brown. They are seen in forests, cultivated lands and



gardens. They make small to extensive burrows leading to circular chambers which are used as resting quarters, hoarding place of food, nurseries etc. Burrow has a number of exit holes and escape routes. Only one individual or a female with young is seen in a single burrow. These animals store large quantities of grains in their burrows. *Irula* and other tribes dig their burrows to catch bandicoots as well to collect the grains hoarded in these burrows. This rodent also feed on tubers, roots, shoots, grass etc. They breed throughout the year and 8-12 young ones are born in a litter after a gestation period of 20-21 days with a break of about a month between pregnancies. Race represented in Kerala is *B. bengalensis kok*.

Status : Common. In Kerala, they are notorious pests destroying Tapioca, Plantain, Colocassia, Pumpkin, seedlings of coconut etc.

Distribution in Kerala : Throughout.

87. COMMON HOUSE RAT

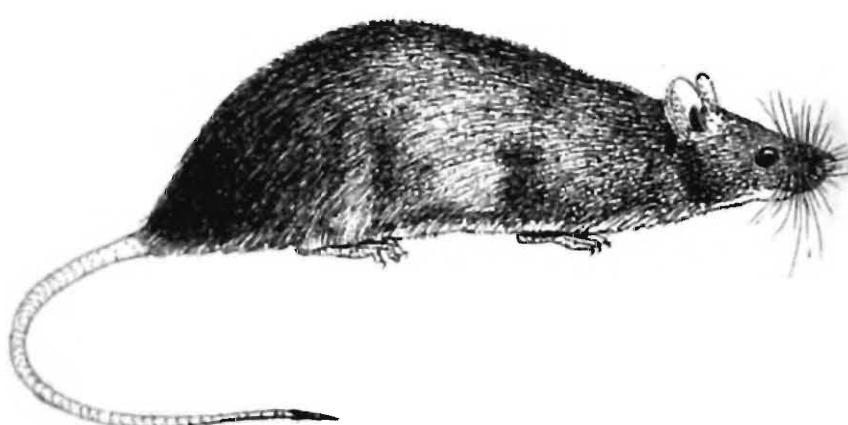
Rattus rattus (Linnaeus)

Mal. Name : *Eli, Veetteli*

Range : Throughout the world.

Habitat : Close to human habitations.

Size : HBL : 16-19 cm. TL : 19-22 cm. Wt : 135-240 gm.



This is a familiar rat seen in houses. Originally a native of Asia, the House Rat is distributed worldwide and is a serious pest in many countries destroying stored food grains.

This rodent is known by various common names such as the Common House Rat, Black Rat, Ship Rat or White Belly Rat. The coat colour of its back is greyish black, ventral side being ashy. The tail is longer than the body and is hairless. Ears are large, rounded and slightly fulvous externally. Having a number of geographical races, most of them live as commensals with man. A few races live in open country or in forested areas. In addition to destroying grains, they sometimes cause the spread of diseases like Plague, Typhus, and Leptospirosis.

This nocturnal animal is highly successful in survival due to its wide distribution and very high fecundity. In addition to grains, fruits and other vegetables, they also feed on human food. It breeds throughout the year and usually 7-10 young ones are born in a litter after a gestation period of 22-24 days. In addition to making burrows, they also make nests on palms, trees, shrubs and fences. Young ones attain sexual maturity in 2-3 months. Races represented in Kerala are *R. rattus wroughtoni* and *R. rattus rufescens*.

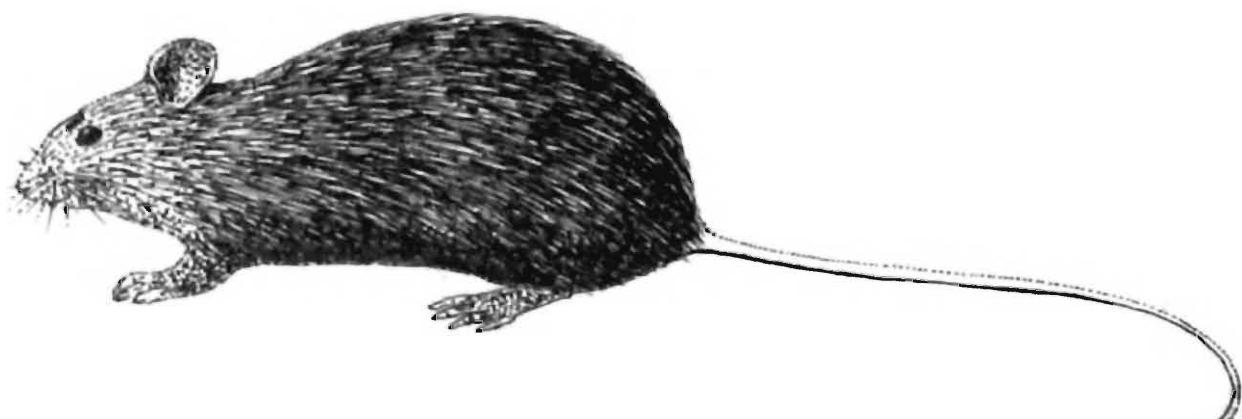
Status : This is also a serious pest in Kerala.

Distribution in Kerala : Throughout.

88. BLANFORD'S RAT/WHITE TAILED WOOD RAT

Cremnomys blanfordi (Thomas)

Mal. Name : *Katteli*



Range : Central and South India and Sri Lanka.

Habitat : Forests and scrub jungles.

Size : HBL : 15-18.2 cm. TL : 18.5-20.8 cm.

Slightly smaller than the Common House Rat, this animal is seen in forests and scrub jungles leading more or less an arboreal life. The coat colour is greyish brown and whitish underneath. Its well haired tail is bi-coloured, dark proximally and white distally and has a tufted tip. Hind foot is white. Mamuae are three pairs.

This nocturnal animal lives in different types of habitats like deciduous forests, scrub jungles, rocky areas etc. They feed mainly on plant matter. 2-3 young ones are born in a litter.

Status : Uncommon.

Distribution in Kerala : Thiruvananthapuram, Ernakulam, Thrisur and Kannur districts.

89. RANJINI'S FIELD RAT/KERALA RAT

Rattus ranjiniae Agrawal & Ghosal

Mal. Name : *Eli*

Range : Kerala.

Habitat : Rice fields.

Size : HBL : 21-26.1 cm. TL : 21-23.2 cm.

This is a large sized field rat with long fur interspersed with soft spines. Tail length is equal to or shorter than the length of head and body put together, in adult specimens; in sub adults it may be a little larger. Colour of the back is bistre, and hinder parts darker. Ventral side is dirty white. Tail is unicoloured, thin and tapering. Feet are light fawn on upper surface.

In addition, it has large claws relative to body size and its hind feet are very long and slender.

Not much is known about the habits of this animal.

Status : Not Known. Endemic to Kerala.

Distribution in Kerala : Thiruvananthapuram, Aleppey, Palakkad and Thrissur districts.

90. HOUSE MOUSE

Mus musculus Linnaeus

Mal. Name : *Chundeli*

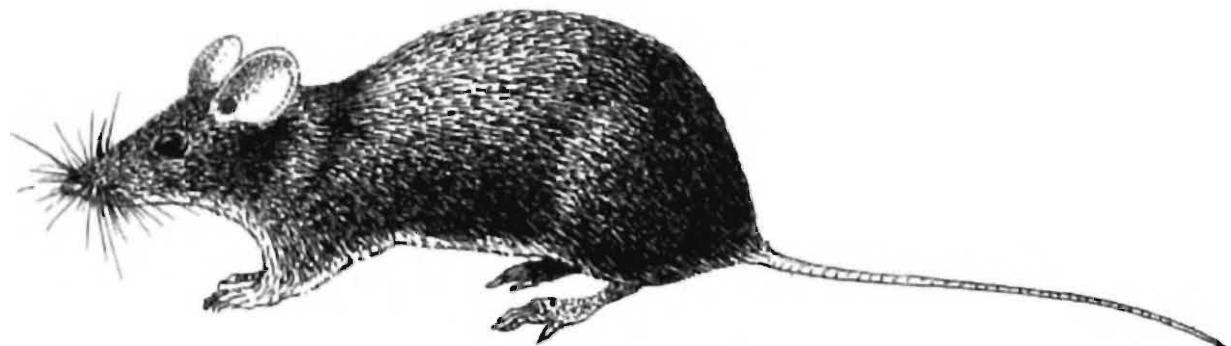
Range : Nearly world wide, as a commensal with man.

Habitat : Human habitations.

Size : HBL : 5.5-9.4 cm. TL : 6.4-10 cm. Wt : 10-25 gm.

Closely related to rats, mice can be distinguished by their smaller size and enlarged first molar teeth. They are characterized by their faintly bicoloured tail, which is longer than head and body. Upper parts are dusky brown, lower parts being white to ochreous brown. Tail, which is dark above and white below, is thick at its base. Young ones are duskier.

House mouse lives in dark corners of houses, other buildings, fields and gardens. This nocturnal animal is very active and is omnivorous, feeding



on seeds, insects, soap, glue etc. They build soft nests in hidden places such as inside of shelves, unused wooden cases, holes, crevices etc. They breed 3-5 times a year and about 4-8 young ones are born in a litter. Gestation period is about 21 days. Young ones attain sexual maturity in 1-2 months. Longevity in captivity is about 3-4 years.

Status : Subspecies represented in Kerala is *M. musculus castaneus* and it is a common indoor pest.

Distribution in Kerala : Throughout.

91. COMMON INDIAN FIELD MOUSE/INDIAN PYGMY FIELD MOUSE/INDIAN WILD MOUSE

Mus booduga (Gray)

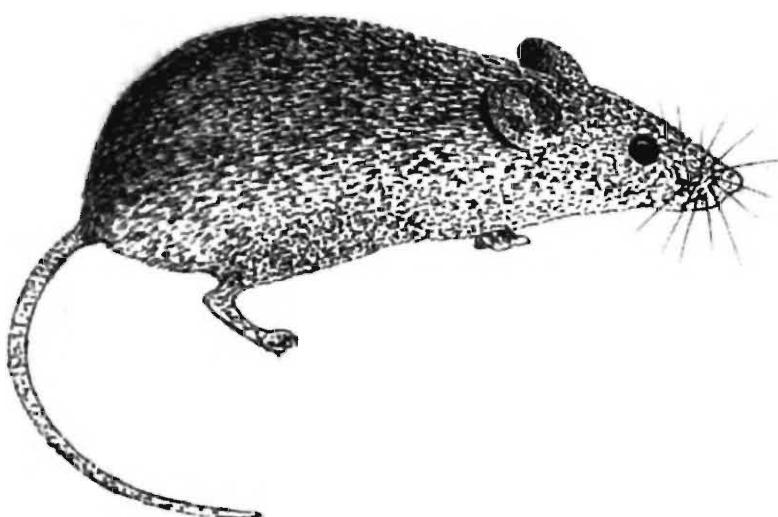
Mal. Name : *Kattu Chundeli*

Range : Indian Subcontinent.

Habitat : Cultivated fields, scrubs.

Size : HBL : 5-8 cm. TL : 5 cm.

Common Indian Field Mouse is a small, soft-furred burrowing mouse seen in fields, gardens and compounds. Upper part of the body is brown in colour and the lower parts white. Tail is bi-coloured, dark above and paler below. 5 pairs of mammae are present.



This fossorial mouse inhabits burrows. It feeds on plant matter and is a pest of crops. It breeds throughout the year.

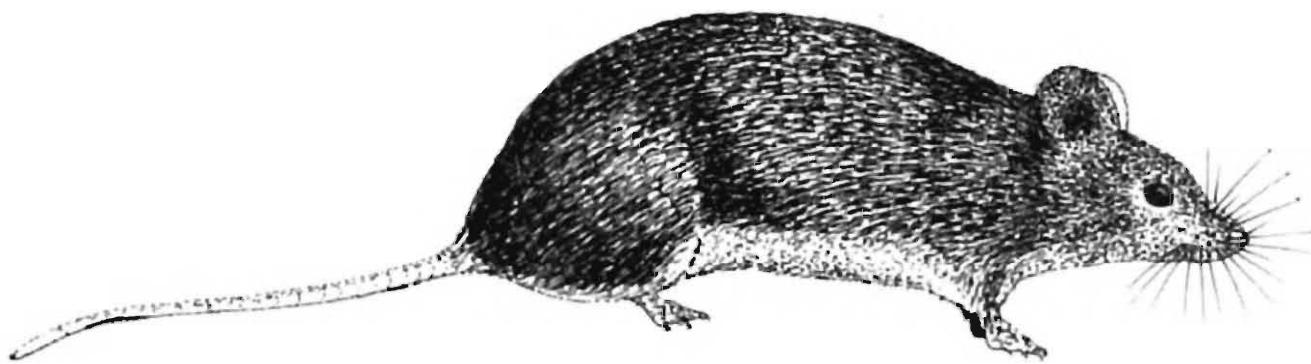
Status : A common species in its distributional range..

Distribution in Kerala : Idukki, Palakkad and Thrissur districts..

92. BROWN SPINY MOUSE

Mus platythrix Bennett

Mal. Name : *Thavittu mullan chundeli*.



Range : India.

Habitat : Sandy, rocky or gravelly habitats.

Size : HBL : 8.2-12 cm. TL : 6.3-9 cm.

This is a medium sized large mouse. Tail is shorter than head and body. The fur is crisp and tends to be spiny. Colour is pale brown to dark brown above and white below with a clear demarcation along the sides. Head is long and muzzle pointed. The ears are large, oblong and rounded. They live in red gravelly soil and avoid irrigated croplands. The animal is omnivorous in diet.

Status : Not known.

Distribution in Kerala : Palakkad and Thrissur districts.

93. RYLEY'S SPINY MOUSE

Mus cookii RyleyMal. Name : *Mullan Chunndeli**Range* : India, Nepal, Myanmar, China, Thailand, Vietnam and Laos.*Habitat* : Grasslands and cultivated fields near forests in mostly mountainous region.*Size* : HBL : 7-10 cm. TL : 5.6-9.6 cm.

The subspecies reported from Kerala and a few other states is *M. cookii nagrum*. This race is slightly smaller than the race, *M. cookii cookii* of Naga Hills. It is characterised by its bristly fur, which is light brown above and grey beneath; feet are darker. Mammae are 5 pairs.

Not much is known about its habits.

Status : Not Known.

Distribution in Kerala : Kannur district (Agrawal, 2000).

94. FAWN COLOURED MOUSE

Mus cervicolor HodgsonMal. Name : *Thavidan Chundeli**Range* : India, Nepal, Myanmar and South East Asia.*Habitat* : Grasslands and cultivated fields near forests, in mostly mountainous region.*Size* : HBL : 9.5 cm. TL : 7.6 cm.

This soft furred mouse is dark brown above and greyish white below in coat colour. Tail is dark above and pale below in colour, shorter than

the length of head and body put together. Hind foot is whitish. Mammae are five pairs.

This nocturnal and fossorial mouse lives in forests, scrubs and cultivated fields. It is an omnivore feeding on plant matter and insects. 5 to 12 young ones are born in a litter.

Status : Unknown.

Distribution in Kerala : Eravikulam National Park (ZSI, 2002).

95. BONHOTE'S MOUSE

Mus famulus Bonhote

Mal. Name : *Bonhote's Chundeli*

Range : South India.

Habitat : Grasslands and cultivated fields near forests, in mostly mountainous region.

Size : HBL : 9 cm. TL : 8 cm.

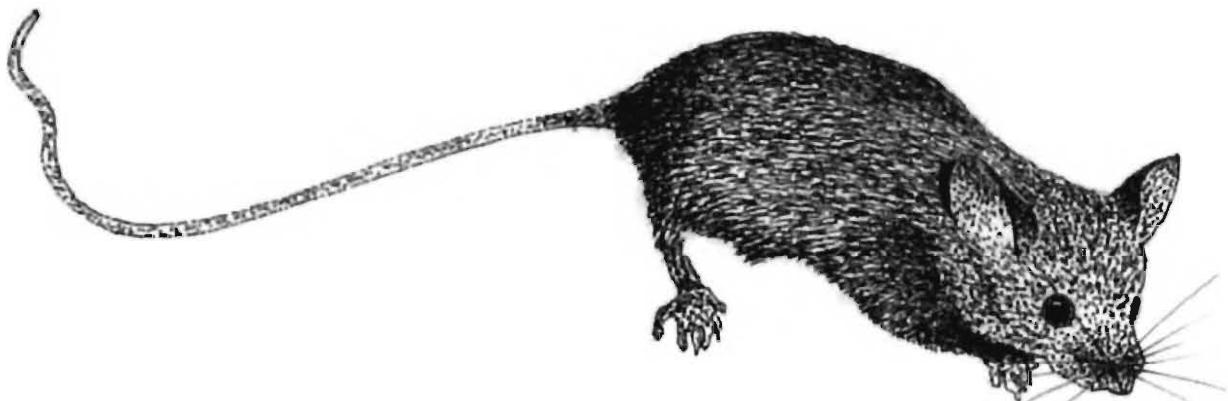
This soft furred mouse is seldom seen. Tail is shorter than head and body. The colour is reddish or chocolate brown above, brownish below, sharply demarcated along the flanks. Tail is dark and the hind foot dark brown in colour. There are 3 pairs of mammae.

Reported very rarely from the evergreen forests of high elevations. This is a nocturnal and fossorial mouse.

Status : Uncommon.

Distribution in Kerala : Eravikulam National Park and Thrissur districts.

96. INDIAN LONG -TAILED TREE MOUSE

Vandeleuria oleracea (Bennett)Mal. Name : *Marachundeli*

Range : India, Sri Lanka, Nepal, China, Myanmar and Thailand.

Habitat : Forested tracts in higher elevations.

Size : HBL : 10 cm. TL : 15 cm.

This is an arboreal mouse with a long tail. Tail is not well haired. Upper part is dull brown in colour and the ventral side white. Tail is dark. Hind foot pale. Hallux and fifth toe clawless but provided with short nails. There are 4 pairs of mammae. Narrow upper incisors are yellowish in colour.

This nocturnal and arboreal mouse is an omnivore feeding on shoots, buds, fruits, insects etc. They build globular nests in hollows of trees, in bamboo thickets and on thatched roofs.

The subspecies represented in South India and Gujarat is *Vandeleuria oleracea oleracea*, which is dull brown in colour, whereas the subspecies represented in Northern India is rusty or reddish brown.

Status : Uncommon.

Distribution in Kerala : Aralam Wildlife Sanctuary, Wyanad and Idukki districts.

Order SIRENIA
Dugong and Manatees

This order consists of two families, two genera and four species (One Dugong and three Manatees) distributed in geographically isolated tropical coastal waters and estuaries. Members have streamlined body, flipper-like fore limbs, presence of horizontal tail flukes and absence of hind limbs as the aquatic adaptations. They are non-ruminant herbivores, primarily feeding on plants. Head is large with small eyes and with pinpointed ear openings. There is a pair of valve-like nostrils on the top of the head. Movement is slow and languid. Life span is about 30-55 years and the reproductive rate is low.

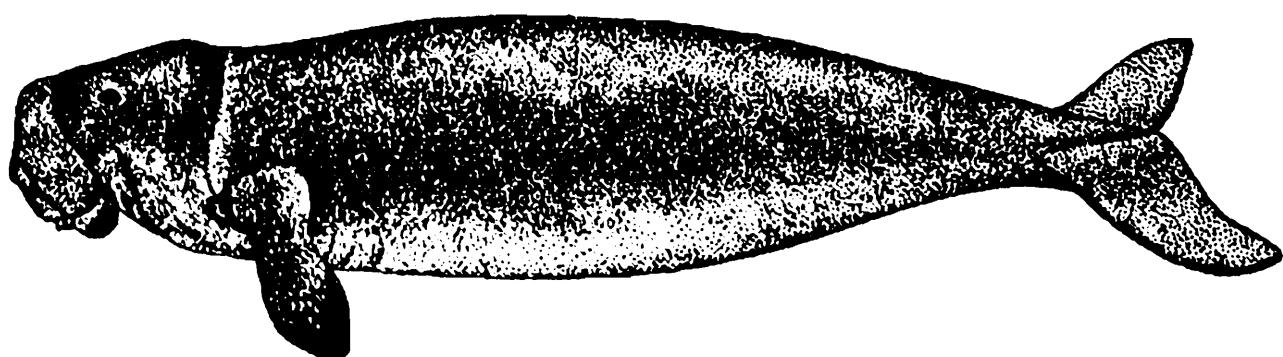
Family DUGONGIDAE
Dugong

Only one species of this family survive now. Large size with a streamlined body, crescent shaped fluke, partially divided snout, presence of a pair of tusks in males are the prominent features of this family. The animal lives solitarily and feeds most of the time.

97. SEA COW/DUGONG

Dugong dugong (Muller)

Mal. Name : *Kadal pasu*



Range : Coasts of East Africa, Indian Ocean, Red Sea and South East Asia to North Australia.

Habitat : Coastal shallow waters.

Size : HTL : 1-4 m. Wt : 230-900 Kg.

The Dugong is distinguished from other Sirenids by its tail, which has a straight or slightly concave trailing edge. The head is heavy and is truncated anteriorly, ending in a downward facing flexible disc and a slit like mouth. The body is cylindrical but the belly is somewhat flat. The male has two tusks, which are modified incisors. The fore limbs are modified into flippers and the tail fluke is placed horizontally to the body. The upper lip projects beyond the lower lip and form a sort of fleshy pad overhanging the mouth. Bristles around the mouth region are sensory in function. Eyes are small and deeply sunk. External ears are in the form of a small circular aperture. Mamuae are situated just behind the flippers. Colour of the animal varies from dull brownish grey dorsally, to grey on the sides and that of flesh ventrally.

The animal leads a shy solitary life near the sea bottom in shallow areas. They may also be seen in small family groups. They feed mainly on sea grasses especially the rhizomes (storage roots). The horseshoe shaped disc of the mouth is very useful in feeding. Gestation period is about one year and a single young one is born at a time. Very little is known about the ecology and behaviour of this animal. As a slow breeding animal, it produces only a few offspring during its entire life. This is a species requiring top priority in conservation and management plans.

Status : Endangered. Placed in Appendix-I of CITES. Fishing industry (fishing nets), pollution, oil slicks and hunting for its flesh are the threats faced by this slow breeding animal.

Distribution in Kerala : Observed at Vizhinjam coast (Thruvananthapuram district).

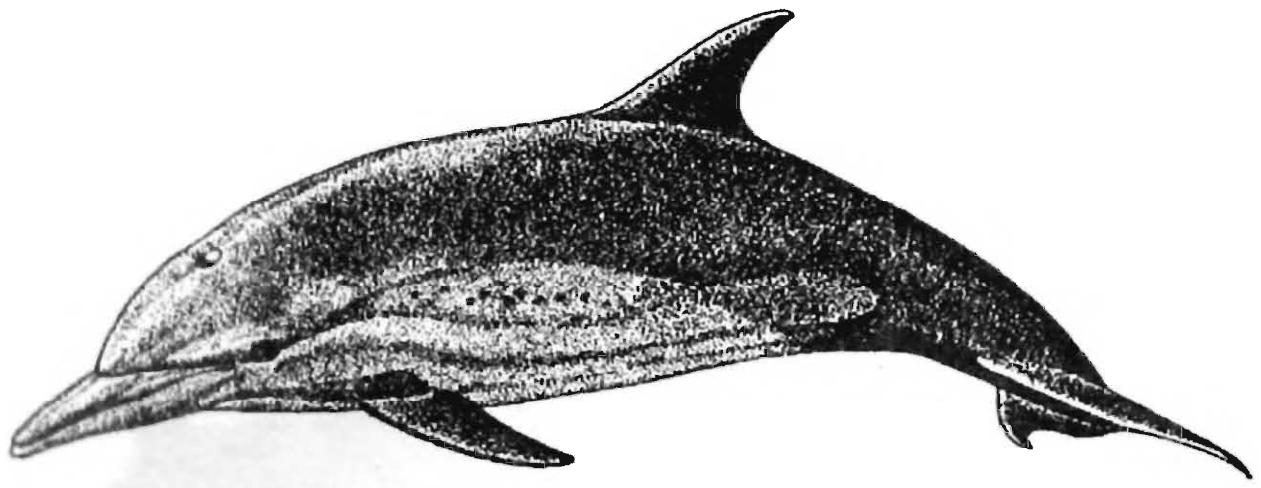
Order CETACEA
Whales, Dolphins and Porpoises

Cetaceans are true aquatic mammals spending their whole life in water. They are adapted for aquatic life in a variety of ways. Body is streamlined in shape, which offers the least resistance in water. Fore limbs are modified into paddle like flippers. Tail is horizontally set as tail flukes. Hind limbs are absent. Eyes are small. External ears are absent and the ear orifice is minute. The nostrils open either separately (closed by a movable muscular pad) or by a single hole raised above the extremity of the snout (blow hole). Most of the whales have teeth in one or both the jaws (Toothed whales), while in others, replaced by baleen plates (Baleen Whales). Baleen or whalebone acts as a sieve to extract food organisms during feeding. A layer of dermal fat (blubber) act as an insulator and also act as stored food. Whales are physiologically adapted for deep diving and also to remain submerged for long periods. Most species migrate periodically between sub polar and tropical territories. They give birth to young ones in water and usually a single young one is born at a time.

Family DELPHINIDAE
Dolphins

This is the largest and the most diverse of cetaceans consisting of 32 species distributed world over. Dolphins have a bulging forehead, beaked snout and a slender stream lined body. Most animals are small to medium sized, but a few like Killer Whales are larger. Males are usually larger than females. Dolphins are gregarious and have hierarchies within the group. They swim fast and make shallow dives at intervals to feed.

98. COMMON DOLPHIN

Delphinus delphis LinnaeusMal. Name : *Kadal Panni/Kadaledi*

Range : Temperate and tropical marine waters of the world.

Habitat : Marine waters.

Size : HTL : 2.1-2.6 m. Wt : 80-120 Kg.

This animal is characterized by its slender torpedo shaped body and a long slender beak, which is separated by a groove from the distinct fore head. Skin is hairless and smooth. Colour is black or dark grey above and on upper flanks. Ventral side is whitish whereas the sides of the body are having bands of yellowish or fulvous colour. Dorsal fin is slender, curved and is centrally placed on the back. Pectoral fin is falcate. There is a single blowhole as in other toothed whales. Teeth exceed 35 in number.

This fast moving animal lives in shoals of 20-100 or more individuals. They often have the habit of accompanying ships for long distances. The animal makes use of the echolocatory ability for communication. Cohesiveness among the members in a group is strong and the individuals in the group help each other in feeding and while in danger. They feed on squids and fish. Gestation period is 10-11 months; young ones are born in summer.

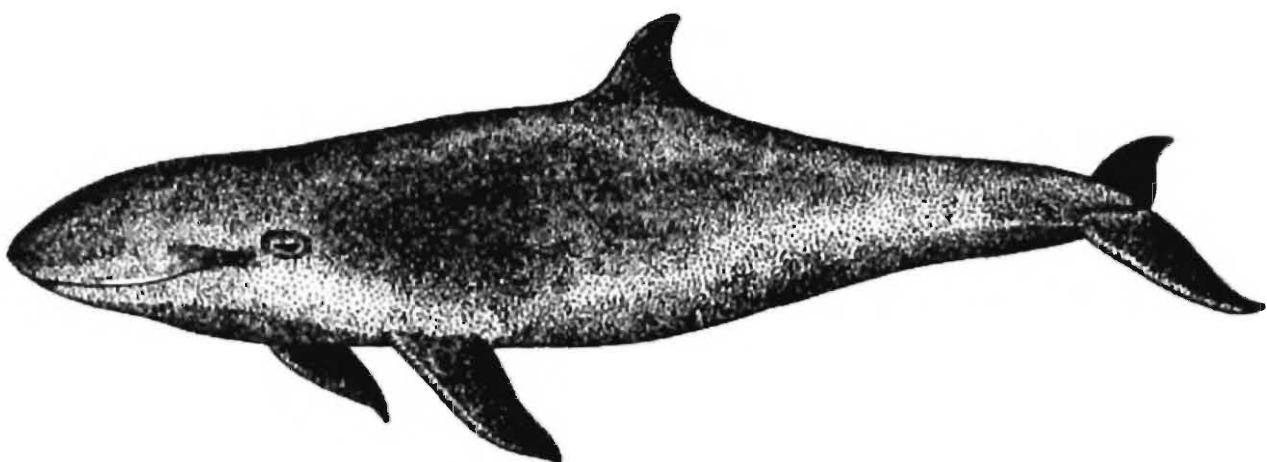
Status : Placed in Schedule. II of Indian Wildlife (Protection) Act (1972) and Appendix-II of CITES.

Distribution in Kerala : Coastal seawaters.

99. FALSE KILLER WHALE

Pseudorca crassidens (Owen)

Mal. Name : *Kolayali Thimingalam*



Range : Worldwide.

Habitat : Temperate and tropical sea waters.

Size : Male : HTL : 5.5 m. Wt : 2 Tonnes. Females : HTL : 5 m. Wt : 1.2 Tonnes.

The False Killer Whale is characterised by its long slender body, rounded head with no distinct beak etc. A tall sickle shaped dorsal fin is placed just behind the mid point of the back. Dorsal fin is curved backwards. Teeth are large, conspicuous and 8-11 in number on each side of both jaws. General colour of the body is black except for a grey area on belly between flippers.

They live in schools of a few to large numbers, feeding mainly on squids and fishes. Biology of this species is little studied.

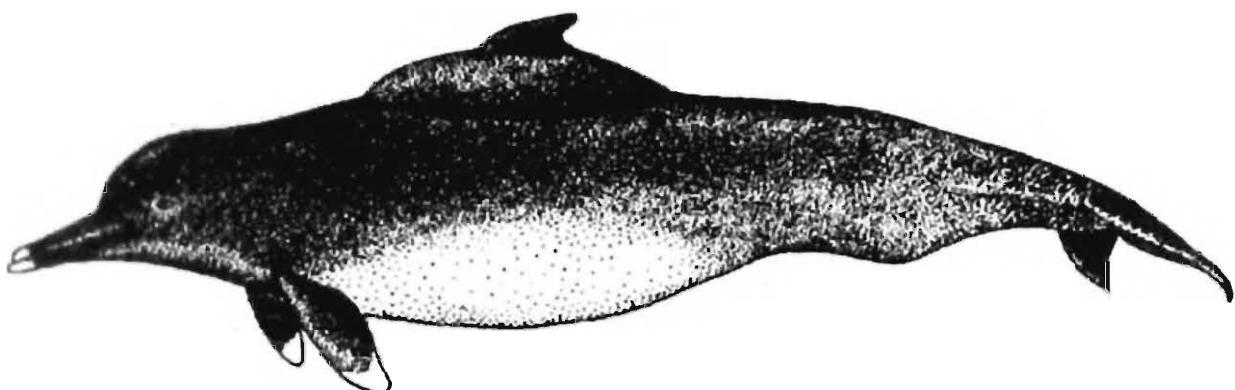
Status : Placed in Schedule-II of Indian Wildlife (Protection) Act (1972) and included in Appendix-II of CITES.

Distribution in Kerala : Coastal sea waters.

100. PLUMBEOUS DOLPHIN/INDO-PACIFIC HUMPBACKED DOLPHIN

Sousa chinensis (Osbeck)

Mal. Name : *Punnan Edi*



Range : S.W. Pacific Ocean, Yangtze River, Indian Ocean and the Malabar coast of India.

Habitat : Coasts, estuaries and swamps.

Size : HTL:2-3 m. Wt:90-150 Kg.

The Plumbeous Dolphin or Lead coloured Dolphin is similar to the Common Dolphin, but its snout is distinctly longer. The colour in general is lead, the lower jaw being white. The adults have humps of fatty tissues on the back, hence the name, 'humpbacked Dolphin'. The adults may develop spots of varying colours on the body. Dorsal fin, which is centrally placed, is sickle-shaped in young, triangular in adult, and becomes rounded in older individuals. Flippers are tipped white. There are a total of 120 teeth in jaws.

They are gregarious creatures living in groups of up to 20 individuals. They feed in shallow waters on fish, mollusks and crustaceans. They make

use of the ability of echolocation for movement, communication and catching the prey. Reproductive behaviour is not well studied.

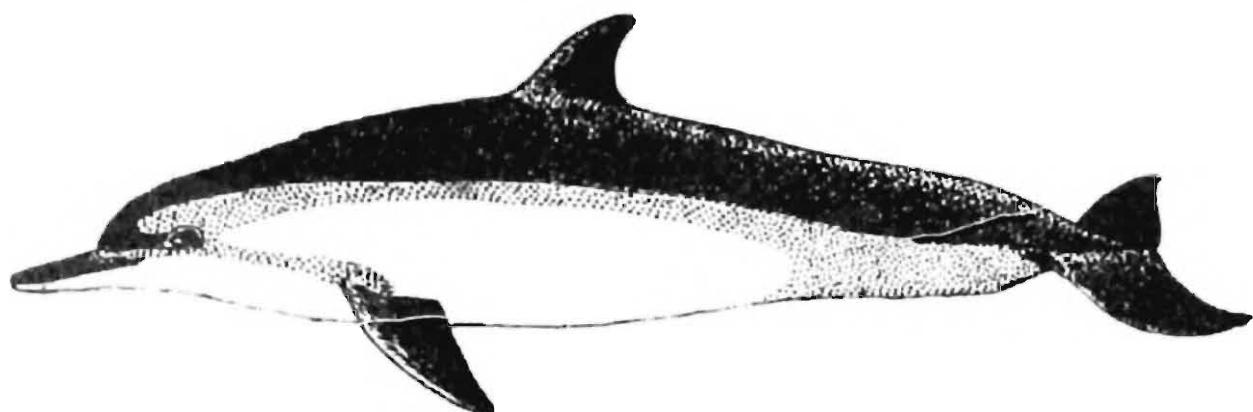
Status : Placed in Schedule. II of Indian Wildlife (Protection) Act (1972). Included in Appendix-II of CITES.

Distribution in Kerala : Coastal sea waters.

101. SPINNER DOLPHIN

Stenella longirostris (Gray)

Mal. Name : *Chankan Edi*



Range : Tropical to temperate marine waters of the world.

Habitat : Marine waters.

Size : HTL : 1.8 m. Wt : 75 Kg.

This animal is characterised by its slender and torpedo shaped body, long slender beak, distinct forehead and lean erect to sickle shaped, centrally placed dorsal fin. The body colour is dark greyish brown or black on the back, light grey tan or yellowish tan on the flanks and white on belly. There is a distinct black to light grey stripe from eyes to flippers.

This animal lives in huge shoals of up to 1000 individuals. They mainly feed on squids and bottom dwelling fishes. Gestation period is about 10½ months and a single young is born at birth.

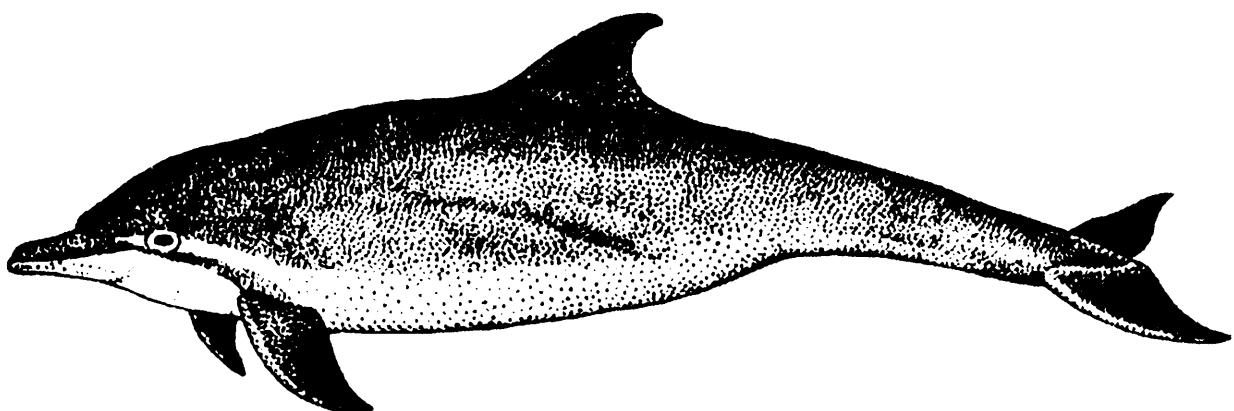
Status : Placed in Schedule-II of Indian Wildlife (Protection) Act (1972) and Appendix-II of CITES.

Distribution in Kerala : Coastal sea waters.

102. BOTTLENOSED DOLPHIN

Tursiops truncatus (Montagu)

Mal. Name : *Chankan Edi*



Range : World wide, in Temperate and tropical waters.

Habitat : Coastal waters.

Size : HTL : 3.4 m. Wt : 150 kg.

Its torpedo-shaped body and robust head with a thick medium-long beak characterises this dolphin. Lower jaw projects slightly beyond the upper jaw. Tail is moderately keeled. Dorsal fin is tall, sickle-shaped and centrally placed. The body colour is dark grey above and the belly is slightly reddish. Fins are darker in colour.

Bottle nosed Dolphins prefer coastal waters and usually live in groups of up to 15 individuals; rarely, groups of 100 individuals are also seen. There is much co-operation and communication between members of the group. They make use of the ability of echolocation. They feed on crustaceans and fishes.

The courting movements of breeding pairs are very characteristic. Usually a single young is born per birth. Other females help in delivery, taking the calf to the surface for the first breath.

Status : Placed in Schedule-II of Indian Wildlife (Protection) Act (1972) and Included in Appendix-II of CITES. These widely distributed and intelligent dolphins are kept in zoos and they are trained to perform tricks.

Distribution in Kerala : Coastal waters.

Family PHOCOENIDAE
Porpoises

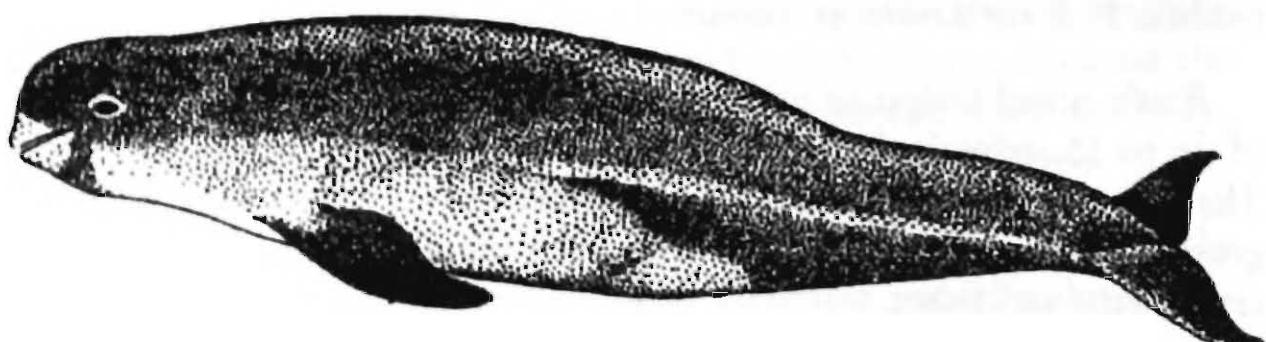
Porpoises are small cetaceans, rarely over 5 feet long, living in bays and shallow coastal waters. Snout is not beaked. A triangular and prominent dorsal fin is present except in the finless porpoises. Teeth, 60-120 in numbers, are laterally compressed and flattened in to a spade at the tip. 6 species are distributed worldwide.

103. LITTLE INDIAN PORPOISE/BLACK FINLESS PORPOISE

Neophocoena phocaenoides (G. Cuvier)

Mal. Name : *Elian Edi*

Range : Persian Gulf to coasts of Pakistan, India and south East Asia.



Habitat : Coasts, estuaries and rivers.

Size : HTL : 1.4-1.8 m. Wt : 30-45 kg.

The Finless Porpoise is distinguished by the absence of a dorsal fin. Other features of this slender animal are the prominent rounded and abruptly raised forehead, small but distinct neck, small and elliptical flippers, horizontally compressed and centrally notched tail fluke and small rounded projections on the hinder part of the back. The colour is black, and purple patches may be present on the upper lip and throat. Males are slightly larger than females.

They live in shallow coastal and estuarine waters in groups of 2-3 individuals. Rarely, groups of 20 or more individuals are also seen. They feed on crabs, shrimps and small fishes. Females carry young ones on their back. Very little is known about their breeding biology.

Status : Placed in Schedule-I of Indian Wildlife (Protection) Act (1972) and in Appendix-I of CITES. Destruction and pollution of rivers, estuaries and mangroves are the major threats faced by this animal. They are also hunted for their meat and oil. They are accidentally trapped in fishing nets and also collide with fishing boats causing mortality.

Data on Indian population is not available.

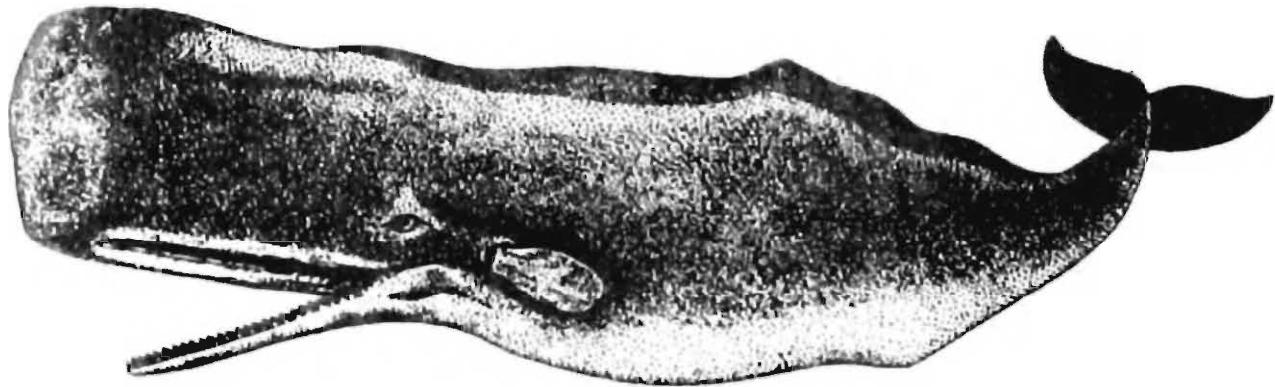
Distribution in Kerala : Coastal sea waters.

Family PHYSETERIDAE

Sperm Whales

Three species under 2 genera are distributed worldwide. Body is compact and robust and tapered abruptly at the tail end. They have an under slung lower jaw. The term Sperm Whale has its origin from 'spermaceti', an organ located above the upper jaw that contains a characteristic waxy fluid, which controls buoyancy.

104. THE SPERM WHALE/CACHALOT

Physeter macrocephalus LinnaeusMal. Name : *Enna Thimingalam*

Range : Worldwide.

Habitat : Prefers deep waters of the ocean.

Size : HTL : Male : 10-18 m; Female : 8-9m. Wt : Male : 45-70 Tonnes; Female : 15-20 Tonnes.

Largest among the toothed whales, its huge square cut head occupying one third of its body length and a small lower jaw, set well back from the snout, characterises the sperm whale. Blowhole, which is asymmetrical and 's' shaped, opens at one side of the head. The oil reservoir (spermaceti) of the head serves to control buoyancy in water. There is no dorsal fin but in its place, a fleshy hump followed by a series of smaller humps is present. Flippers are small but tail large, broad, powerful and notched in the middle. General color of the body is black, belly being lighter. There are no functional teeth in upper jaw where as the lower jaw is provided with 18-27 large teeth on each side.

Cachalot lives in groups of up to 50 individuals feeding on squids, cuttle fish, lobsters and fishes in deep waters. They migrate extensively. They are polygamous, the adult male holding 'harems' of 20-30 breeding females. When the female gives birth, other females help and assist the new born to have its first breath at the surface. Gestation period is about

14-15 months. Generally a single young one is born. Longevity is about 70 years.

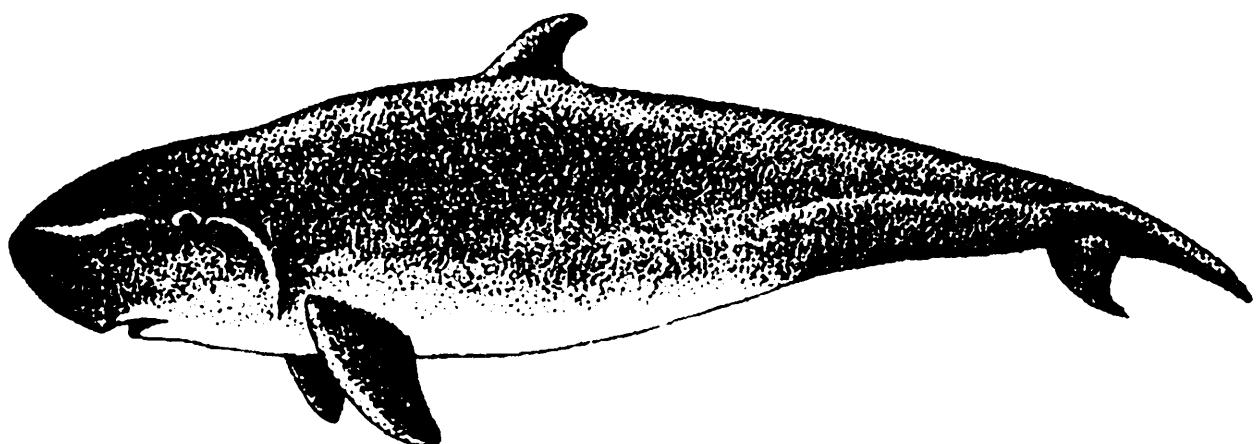
Status : Endangered. Placed in Schedule-II of Indian Wildlife (Protection) Act (1972) and Appendix-I of CITES. International Whaling Commission protects this species from whaling since 1986.

Distribution in Kerala : Coastal sea waters.

105. DWARF SPERM WHALE/OWEN'S PIGMY WHALE

Kogia simus (Owen)

Mal. Name : *Kullan Enna Thiminglam*



Range : Worldwide.

Habitat : Tropical and temperate Ocean.

Size : HTL : 2.4 -2.7 m. Wt. : 350 Kg.

The Dwarf Sperm Whale is characterised by its comparatively rounded head, under slung lower jaw, dorsal fin located in anterior half of the back, blowhole located at the anterior end of the forehead and obtusely falcate black flippers. Body is dark grey above and grey white below. White, gill shaped marks are seen on the sides of the head. Teeth 8-13 pairs set in the lower jaw.

Very little is known about the biology of this whale. They feed on cephalopods, crustaceans and fishes.

Status : Placed in Schedule-II of Indian Wildlife (Protection) Act (1972) and Appendix-II of CITES.

Distribution in Kerala : Coastal sea waters.

Family BALAENOPTERIDAE

Rorquals/Fin whales

Baleen whales include 6 species under 2 genera, distributed in all the major oceans of the world. They form the largest animals on earth and their size and weight varies from 11meters -10 Tonnes (Mink Whale) to 27meters-150 Tonnes (Blue Whales). They are characterised by their large size, stream lined body and pointed head. Teeth are replaced by numerous keratinous baleen plates, which project down from the upper jaw helping in sieving the food organisms. Dorsal fin is small and falcate, situated on the posterior third of the back. Flippers are narrow and pointed. The presence of throat-grooves helps the animal in expanding the mouth cavity greatly. External openings of the nostrils are separate and longitudinal. Females are larger than males.

106. BLUE WHALE

Balaenoptera musculus (Linnaeus)

Mal. Name : *Neela thimingalam*



Range : Worldwide.

Habitat : Open seas.

Size : HTL : Male : 20-25 m; Female : 21-27 m. Wt : 80-112 Tonnes.

Blue Whale is the largest animal on earth. Its streamlined body is practically hairless except for a few on the lips. The head is larger than other Rorquals. The blowholes are set in bulging muscular pads. The dorsal fin is small, falcate and located far back. Flippers are long and tapering. The throat grooves, 80-100 in number, extend down the front third of the body. This part distends, as the animal feeds. Females are slightly larger than males. The body is bluish grey in colour, often mottled with yellowish grey.

This animal lives singly or in pairs. Large schools are rarely seen. They feed mainly on crustacean planktons, and are selective in feeding. Regular migration occurs between the equatorial waters (breeding grounds) and the Polar Regions (feeding grounds). Gestation period is 11-12 months.

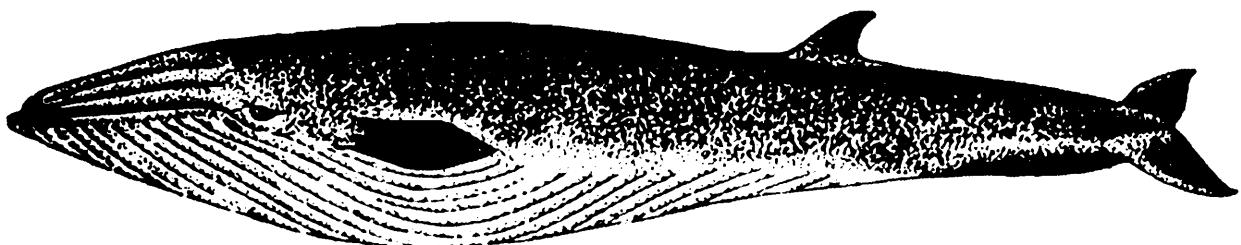
Status : Placed in Schedule-II of Indian Wildlife (Protection) Act (1972) and Appendix-I of CITES. Hunting by man is the main threat faced by this animal.

Distribution in Kerala : Coastal sea waters.

107. BRYDE'S WHALE

Balaenoptera edeni Anderson

Mal. Name : *Thimingalam*



Range : Worldwide.

Habitat : Tropical and sub tropical seas.

Size : HTL : 13 m. Wt : 26 Tonnes.

This medium sized Rorqual is characterised by its "V" shaped head having three prominent ridges, a small dorsal fin, 47-70 throat grooves and 230-370 baleen plates on each side of the jaw. Body is dark grey above and whitish below in colour. Dorsal fin and flippers are black in colour.

They live singly or in groups of up to 7 individuals, feeding on fishes, squids and krill. Gestation period is about 11½ months and a single young one is born in a birth.

Status : This whale is placed in Schedule-II of Indian Wildlife (Protection) Act (1972) and Appendix-I of CITES.

Distribution in Kerala : Coastal sea waters.

108. MINKE WHALE/PIKED WHALE

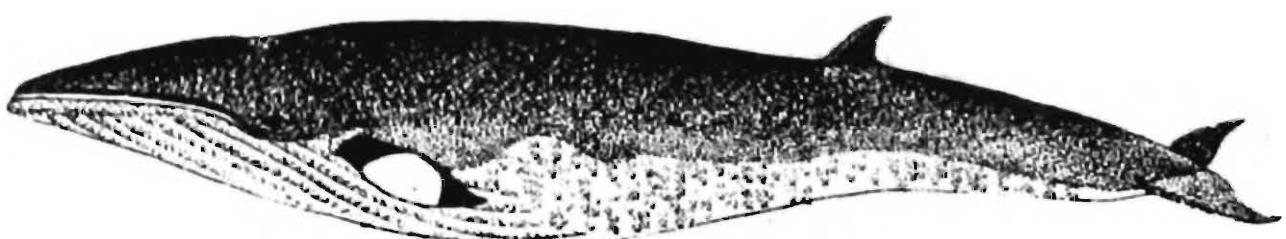
Balaenoptera acutorostrata Lacepede

Mal. Name : *Thimingalam*

Range : Worldwide.

Habitat : Shallow water estuaries, rivers and inland seas.

Size : HTL : 08-10 m. Wt : 06-09 Tonnes.



This animal is the smallest in the Rorqual family, characterised by its pointed and sleek snout, 60-70 throat grooves and the presence of a white band on dorsal side of the flipper. Body is dark grey to black above and white below. Females are slightly larger than the males.

Though they live singly or in pairs, they may form large shoals in their feeding grounds. They mainly feed on pelagic crustaceans (mostly Krill) and small fishes.

Usually a single young one is born after a gestation period of 10-11 months.

Status : Though not considered as a threatened species, the population of this whale has suffered due to whaling during the past many decades. This whale is included in schedule-II of the Wildlife (protection) Act, 1972 and Appendix-I of CITES.

Distribution in Kerala : Coastal sea waters.

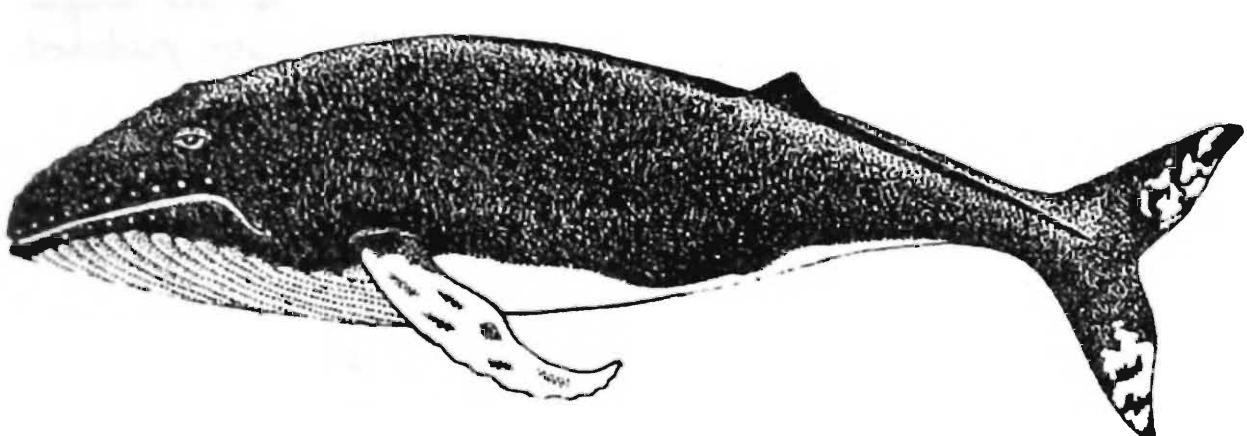
109. HUMP BACK WHALE

Megaptera novaeangliae (Borowski)

Mal. Name : *Koonan Thimingalam*

Range : Worldwide from polar to tropical waters.

Habitat : Oceanic and coastal waters.



Size : HTL : 14-17 m. Wt. 33-50 Tonnes.

Its short and stout body, broad head, large tail fluke that is pleated below and a small recurved dorsal fin set far back, characterises this whale. The streamer-shaped flippers are long and narrow and are about one third the length of body. Lower jaw is distinctly curved and the ventral grooves are 14-24 in number. There are many wart-like nodes on the body and flippers. Baleen plates are 270-400 in number and blackish in colour. Body colour is black above, white on throat, breast and flippers.

They live in a family group of 3-4 individuals and one group may communicate with other groups. They feed on planktonic crustaceans and small fishes. Hump back whales regularly migrate between Polar Regions (feeding grounds) and Equatorial Regions (breeding grounds).

Status : They are hunted to near extinction and the current world population is estimated to be around 25,000 of which about 500 are in the Indian Ocean (Winn and Reichley, 1985). This whale is placed in Schedule-II of Indian Wildlife (Protection) Act (1972) and Appendix-I of CITES.

Distribution in Kerala : Coastal sea waters.

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