Tropical Topics

An interpretive newsletter for the tourism industry

Rainforest possums

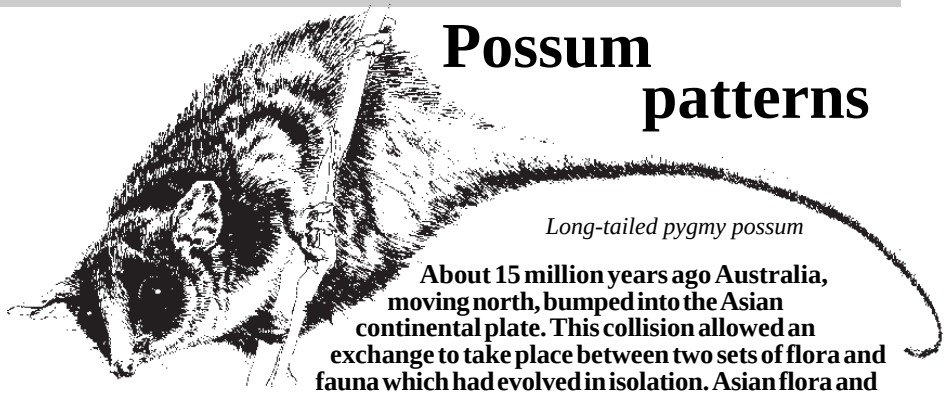
Vol 1 No. 7 November 1992

Notes from the Editor

The Atherton and Evelyn Tablelands, where rainforest exists next to areas of tall open eucalypt forests, is home to one of the largest concentrations of possums in Australia. It is possible (in theory!) to see 13 species of possums and gliders within an area of a few kilometres.

This month's *Tropical Topics* deals with the rainforest species, specifically the green, lemuroid, Herbert River and Daintree River ringtails, the coppery brushtail, the striped possum and the long-tailed pygmy possum. Some of the open forest possums, notably the sugar glider, do enter the rainforest but there is a fairly clear distinction between rainforest and open forest types. To tackle all in one short issue would lead to overload, so we have decided to keep the open forest possums and gliders for a future issue.

Readers of (or glancers at) *Tropical Topics* often react with surprise when they discover a marine item in a Wet Tropics issue and vice versa. Since every issue goes to both groups of tour operators we try to include something of interest for everyone.



Long-tailed pygmy possum

Possum patterns

About 15 million years ago Australia, moving north, bumped into the Asian continental plate. This collision allowed an exchange to take place between two sets of flora and fauna which had evolved in isolation. Asian flora and fauna, including many placental rats, moved into Australia. At the same time Australian species moved north. Many animals colonised Papua New Guinea, a new high altitude land mass which had been created by pressure between the Asian and Australian plates. Some, like the Dorcopsis wallaby, thrived in their new home while relatives left in Australia became extinct.

Changing climatic conditions caused Australia to dry out. Rainforest which had covered much of the continent retreated to 'refugia' — river valleys and cool, moist mountain tops. Then, about 8000 years ago, the climate became wetter and the rainforests expanded again.

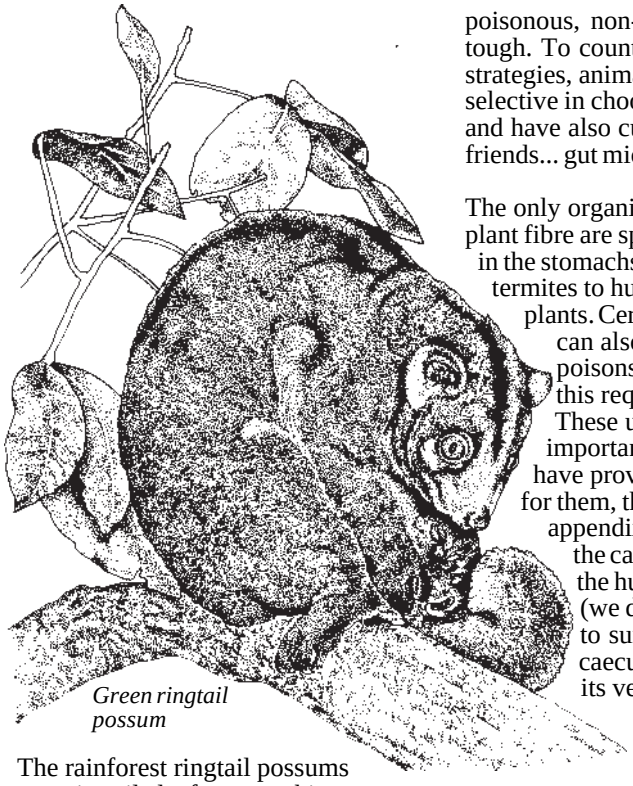
Today's Wet Tropics possum distributions reflect these changes. The rainforest ringtails — the green, lemuroid, Herbert River and Daintree River ringtails — remained in the rainforests, retreating with them into the refugia sites and expanding their range again when conditions became wetter. As 'relict' species they have evolved very little and survive in primitive forms.

Other species adapted to the drier conditions; the common ringtail, the brushtail and the sugar glider evolved to survive in open forests. Later, to a certain extent, they re-entered the rainforest to live alongside the relict ringtail species, although they are more commonly seen in open forests.

Because cuscuses (possums related to brushtails) are found only in northern Cape York, they were assumed to have originated in New Guinea, moving to Australia only quite recently. Fossils of ancient (and extinct) cuscuses discovered in Queensland and Victoria, however, turned this story around. It is now believed that these animals were once widespread in Australia but died out, possibly during its driest period about 18 000 years ago. Those which had already moved to New Guinea thrived, two species eventually returning to Australia as conditions there improved.

Working out this ancient puzzle is a slow process and the discovery of different pieces means that the story is constantly being rewritten. Many questions remain. The distribution of the long-tailed pygmy possum, for example, still poses problems because it exists in New Guinea and Australia but is absent from northern Cape York in between. It will be some time before scientists are able to answer all the questions.

Diets and dens



Green ringtail possum

The rainforest ringtail possums are primarily leaf eaters, taking an occasional snack of flowers and fruits on the side. Not all leaves, however, are edible.

As leaves are a plant's solar cells, essential for survival, plants protect them from insect and mammal predators. Common protection methods involve making the leaves poisonous, non-nutritious and/or tough. To counter these protection strategies, animals have become very selective in choosing their leafy meals and have also cultivated some useful friends... gut microbes.

The only organisms able to digest plant fibre are special microbes found in the stomachs of all animals, from termites to humans, which eat plants. Certain micro-organisms can also break down the poisons found in leaves but this requires a lot of energy. These useful microbes are so important to possums that they have provided a special home for them, the caecum. The human appendix is the equivalent of the caecum. However while the human appendix is small (we don't rely on plant fibre to survive), the possum's caecum is large, reflecting its vegetarian diet.

Research has found that not only are possums very selective eaters, but their behaviour also depends largely on the energy available in their diet. Lemuroid ringtails choose leaves low in fibre such as the young leaves of Queensland maple (*Flindersia brayleyana*) and white carabeen (*Sloanea langii*). Because they use less energy to digest their food they have more to spend. This species is therefore the most energetic of the three ringtail possums, leaping between trees and returning to a fixed den at the end of the night's activity.

In contrast to the lemuroid possum, the green ringtail is the sloth of the rainforest. Its diet consists of tough and poisonous fig leaves, the leaves of some laurels and even those of the shining stinger! Such a diet is low in energy but easy to find, because there are few other animals wanting to eat such poor quality food. Green ringtails therefore do not have to search far for something to eat. Then, at the end of the night, these low-energy possums save on fuel by curling up wherever they are. Consequently, green ringtails don't have a fixed den but change their sleeping site nightly, depending on the location of their last meal.

Herbert River ringtails feed on regrowth species such as sarsaparilla (*Alphitonia petriei*) and quandongs such as *Elaeocarpus ruminatus*. Their energy intake falls somewhere between that of the green and the lemuroid ringtails, and so does their den requirement. 'Herbies' will return to dens if they are close to home at the end of the night's activities. Otherwise, they will not waste energy and often prefer to camp in nearby epiphytic ferns.

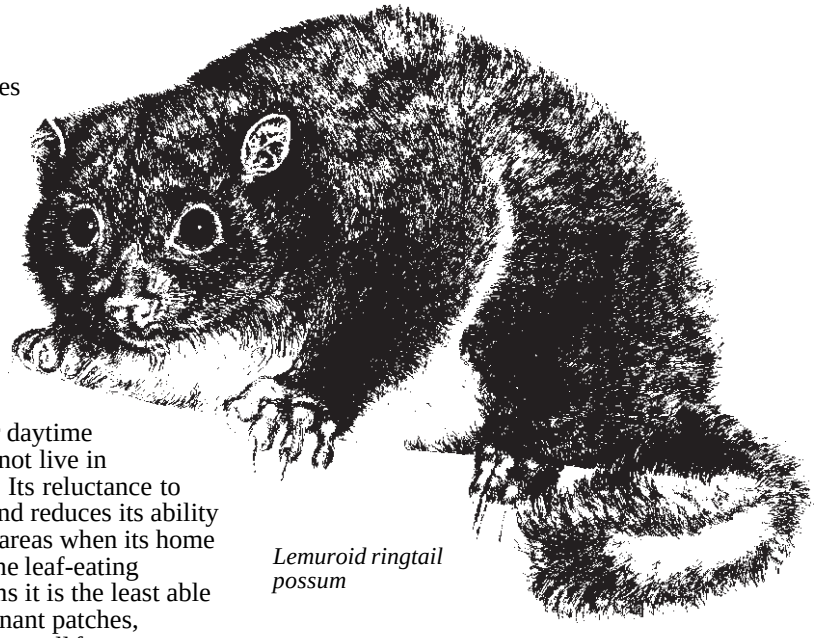
Acknowledgments to Dr Nicky Goudberg.

Possums and patches

Research shows that different species of possums can co-exist in the same area of rainforest by feeding on different plants. This variation in diet, and related lifestyle, leads to different responses to destruction and fragmentation of forest.

Green ringtails and coppery brushtails are the most adaptable and can be found in quite small patches of forest as well as in disturbed areas. These animals feed on secondary growth and pioneer species which commonly result from disturbance, as well as species such as fig trees which are not removed by loggers. They are also willing to travel along the ground, even through open areas away from rainforest, enabling them to move between small forest patches. The green ringtail is not dependent on den sites such as tree hollows or epiphytic ferns.

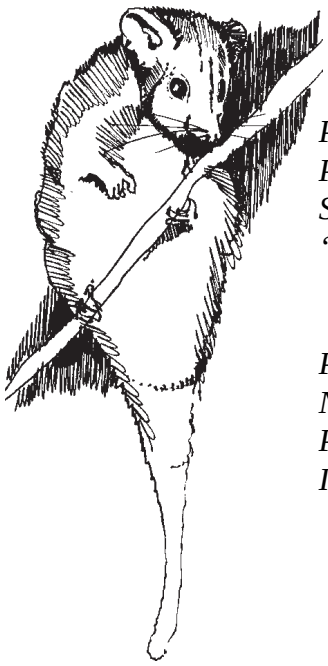
Lemuroid ringtails and Herbert River ringtails are more vulnerable. The lemuroid is a high canopy dweller which never comes down to the ground. Unfortunately its diet consists largely of mature rainforest tree foliage, particularly those cabinet timber trees which are the target of loggers. It needs a den for daytime resting and does not live in secondary forest. Its reluctance to come to the ground reduces its ability to move to other areas when its home is disturbed. Of the leaf-eating rainforest possums it is the least able to survive in remnant patches, disappearing from small fragments within nine years and from fragments of 40-80ha within 35-60 years.



Lemuroid ringtail possum

The Herbert River ringtail has similar dietary and den requirements to the lemuroid but is able to feed on some secondary trees. It is less of a canopy dweller and will come to the ground, enabling it to escape from areas which are disturbed. Numbers decline sharply in areas under 20ha in size.

Acknowledgments to Dr Bill Laurance



Possum tucker

Possum's got a belly ache
Positively crook
Spare a thought for possum's sake
'Cos possum's not a sook

Possum lives on forest food
Not on tourist snacks
Possum doesn't feel too good
It's sympathy he lacks

Possum lives in possum land
A finely balanced state
Feeding possum from the hand
Endangers possum's fate

By all means look and listen
And savour possum's play
But keep the tucker hidden
Let possum live his way!

Robin Filkin

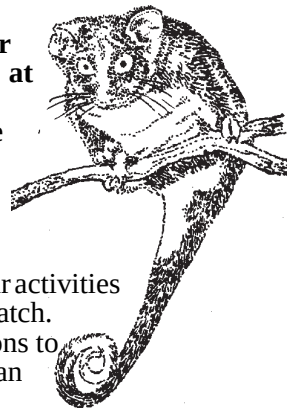
Possums and humans do not have the same digestive systems. If fed a diet of leaves our health would suffer. Similarly, possums cannot cope with bread and other 'human' foods. They might as well be eating cotton wool. It makes them feel full so they eat fewer leaves, causing malnutrition and ill health.

Feeding possums not only leads to a dependence but can also change population balances. Generally it is the brushtails which will approach humans for handouts. This artificial increase in food supply leads to a population boom in that particular species. Other types of possum are pushed out of the area and the diversity of species decreases.

Unnaturally tame possums which have become accustomed to coming down to the ground for food are also in danger from dogs. If you *must* feed a possum, please give it fruit or carrot (avoid cabbage and other brassicas). However, with a little effort, careful spotlighting will reveal a greater variety of possums without damaging the animals. Bear in mind, also, that feeding of animals in national parks is illegal.

Spotlighting for possums

As possums are nocturnal animals, the best way to find them at night is to look for their eyeshine with a spotlight. Eyeshine is caused by a membrane, or 'tapetum', at the back of the eye which reflects light back through the eye a second time to enhance night vision. The more reflected light — in other words, the brighter the eyeshine — the better the animal can see at night. Thus our dull red eyeshine, seen in flash photos, reveals our night vision to be inferior to that of the cat, with its bright white glare.



Rainforest possums also have different coloured eyeshine depending on the species. With practice the colours and brightness can be used to help identify the different species; lemuroid ringtails have the brightest eyeshine — a brilliant white/yellow glare — Herbert River ringtails have a pink/yellow eyeshine, green ringtails a dimmer red eyeshine and brushtails and striped possums have a pinkish eyeshine. Sometimes the colours appear different if the animals are not looking straight at you or if they are juveniles, so use the eyeshine merely as an indicator.

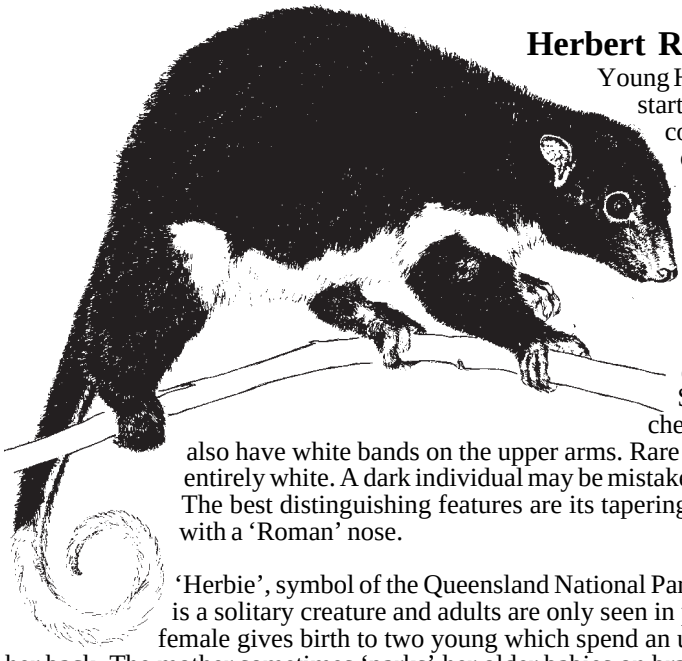
Thoughtless spotlighting can cause distress to animals. Night-adapted eyes are very light sensitive so avoid 100 watt spotlights. Although eyeshine can be picked up with a small torch, to view the animal a 30 watt spotlight (in conjunction with binoculars) is best. Always place the spotlight directly in front of your face so you can look along the beam, otherwise you often miss the eyeshine. Once an animal has been located and identified, swing a red filter, such as a single layer of red cellophane, over the white light. Although this dims the light a little, possums are far less disturbed by the red light and will continue their activities while you watch. Their reactions to white light can vary from prolonged grooming, which is a sign of nervousness, to moving away completely. Usually animals become less light-tolerant as the evening progresses.

While looking for animals try to remain quiet — often sounds of activity guide you to an animal. Likewise, keep quiet while watching. Repeated disturbance scares animals away from an area and makes finding them difficult for everyone.

Acknowledgments to Dr Nicky Goudberg.

Possum portraits

Seven possums have their homes in the rainforests of North Queensland. Six of them — the green, lemuroid, Herbert River and Daintree River ringtails, the coppery brushtail and the long-tailed pygmy possum — are endemic to the Wet Tropics and therefore occur nowhere else. (The long-tailed pygmy possum's relative in New Guinea is a subspecies.)



Herbert River ringtail

Young Herbert River ringtails start life with a pale brown coat and a long dark stripe on the head and upper back. Within a year the coat gradually changes. The adult is dark brown, almost black, with varying amounts of white. Most have at least a white spot on the chest and a white tail tip. Some have a pure white chest and/or belly and some also have white bands on the upper arms. Rare individuals are almost entirely white. A dark individual may be mistaken for a lemuroid ringtail. The best distinguishing features are its tapering tail and pointed face with a 'Roman' nose.

'Herbie', symbol of the Queensland National Parks and Wildlife Service, is a solitary creature and adults are only seen in pairs before mating. The female gives birth to two young which spend an unusually short time on her back. The mother sometimes 'parks' her older babies on branches; these should not be moved as the mother will return to them.

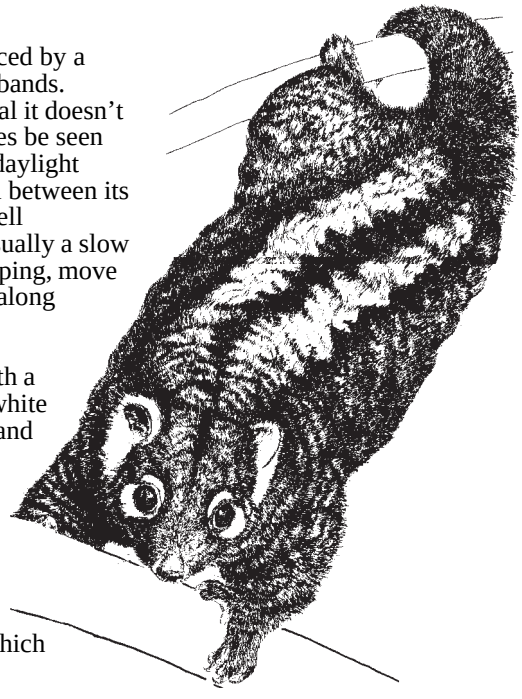
Tree hollows, epiphytic ferns or mistletoes are preferred for dens but some animals have been observed to construct nests, all less than two metres from the ground. Like the common ringtails, the Herbie carries thin branches in its curled tail and weaves them into a cup-shaped or a domed structure with a side entrance.

Daintree River ringtail

This possum is very similar to the Herbert River ringtail but the pale brown colour of the young 'Herbie' is retained by the adult of this species. The two possums have separate distributions, the Daintree species occupying an area to the north of the 'Herbie's' range. They were recognised as different species only in 1989 on the basis of having different chromosome numbers.

Green ringtail possum

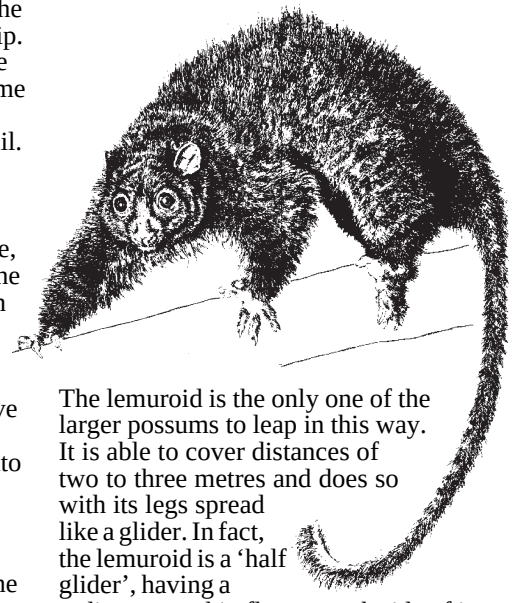
The green of this possum's fur is produced by a combination of black, white and yellow bands. Although, like all possums, it is nocturnal it doesn't retire to a den at night and can sometimes be seen feeding during the day. It spends most daylight hours, however, hunched up with its tail between its legs and curled tightly under its nose, well camouflaged by its fur. Although it is usually a slow mover, the green ringtail can, when escaping, move rapidly through the canopy by running along branches.



The green ringtail has a dumpy body with a pointed face and small ears. Its belly is white and it has white patches under its eyes and ears as well as two silvery stripes along its back. Its tail is thick at the base and tapers to a naked finger-like tip. It is the most solitary of the tree-dwelling ringtails. When two are seen together it is usually a mother with a young one. Although she has two teats, the female usually gives birth to only one young which stays with her for about 10 months.

Lemuroid ringtail possum

This possum was named, in 1884, because its large eyes reminded Swedish zoologist, Robert Collet, of the lemurs from Madagascar which were common in European zoos at the time. These eyes are set to the front of its head and may well give this animal the stereoscopic vision it needs for its free-fall leaps between forest branches.

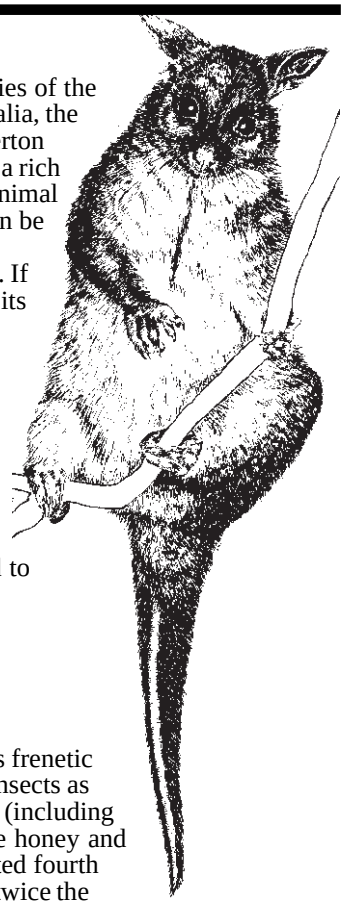


The lemuroid is the only one of the larger possums to leap in this way. It is able to cover distances of two to three metres and does so with its legs spread like a glider. In fact, the lemuroid is a 'half glider', having a rudimentary skin flap on each side of its body. This is particularly visible in young ones.

The lemuroid characteristically has a round fluffy shape with a short-nosed pug-like face. Unlike other ringtails its tail doesn't taper and is used as a rudder when the animal is leaping. The majority of lemuroids are a charcoal grey to brown colour with a yellowish tinge below. Above 1100m on the Carbine Tableland, however, 30 percent of the animals have white coats. This variation is present in three in 10 000 of the general population; these animals are not a different species but are equivalent of the blonds the among the brunettes!

It is not unusual to see lemuroid ringtail family groups of mother, father and one young together. They usually share the same den site, in a hollow tree, and when disturbed will sit closely together in a tight group. Lemuroids are the most gregarious of the ringtails and sometimes feed in groups of up to eight in one tree.

Coppery brushtail possum



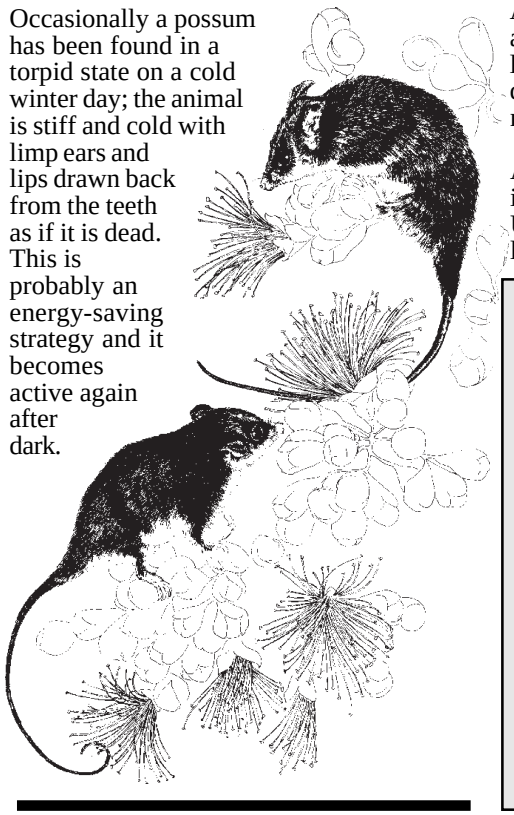
This is the largest of the rainforest possums. A sub-species of the common brushtail which is found extensively over Australia, the coppery brushtail is restricted to the uplands of the Atherton Tableland. Colours vary from grey to yellowish brown to a rich copper, with or without a white tail tip. A grey-coloured animal can easily be confused with the common brushtail but can be identified from its location; if it's in the rainforest it's a coppery and if it's in dry country it's a common brushtail. If confused with its fellow rainforest dwellers, the ringtails, its ears give it away; brushtails have large triangular ears in contrast to ringtails' small rounded ones.

Coppery brushtails are highly territorial, each pair defending their territory from other brushtails, although they usually tolerate ringtails. They use tree hollows as dens and consume a variety of fruits, flowers, leaves and insects. Brushtails move more easily on the ground than many other possums and have the confidence to scavenge around picnic grounds and in rubbish bins and to approach people for food.

Long-tailed pygmy possum

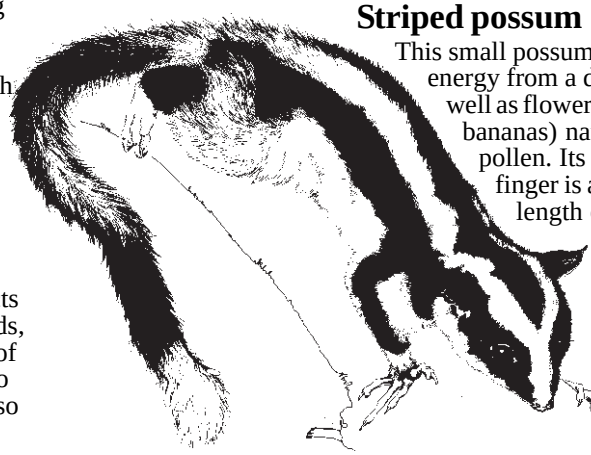
This tiny possum has a body only 10cm long. It has a black patch around each eye, crinkled ears and a furred base to its tail. It is similar in size to a mouse or rat but can be most easily distinguished by its typical possum hind feet with two grooming toes and opposable thumb. Its tail, which is often tightly curled, is one and a half times the length of its body. It has a bumpy appearance due to the long bones under the thin skin which show a change in angle between each segment. The little possum can hang from a branch and then climb up its own tail.

Favourite food includes nectar, pollen and insects. Up to three or four have been found feeding on the trunk-flowering bumpy satinash (*Syzygium cormiflorum*) but the long-tailed pygmy possum is generally solitary. It constructs a spherical nest from leaves or fern fronds, in a tree hollow, hollow stump or clump of ferns. Females share their nest with up to four young. Adults (but not couples) also sometimes share.



Occasionally a possum has been found in a torpid state on a cold winter day; the animal is stiff and cold with limp ears and lips drawn back from the teeth as if it is dead. This is probably an energy-saving strategy and it becomes active again after dark.

Striped possum



This small possum gets its frenetic energy from a diet of insects as well as flowers, fruits (including bananas) native bee honey and pollen. Its elongated fourth finger is almost twice the length of other fingers and is used to probe rotten wood for beetle larvae while its chisel-like teeth are used to rip open dead wood. In fact, the noise of these activities may first alert the observer to its presence. During the day the sight of scratched and ripped forest logs indicate that striped possums are around.

As its name suggests, the striped possum has unmistakable black and white stripes along its body. It is long and slender with a long bushy tail and a head which looks large in relation to its body. It has a very strong, musky smell which may make it distasteful to predators in which case its striking coat, instead of making it vulnerable, may function as a highly visible warning.

Although a rainforest dweller, the striped possum will venture up to several kilometres into nearby open forest. It is a fast, agile climber and makes leaps of one to two metres. Usually solitary, the striped possum uses holes in trees for its den, lining them with leaves which it carries in its curled tail.

Where are they?

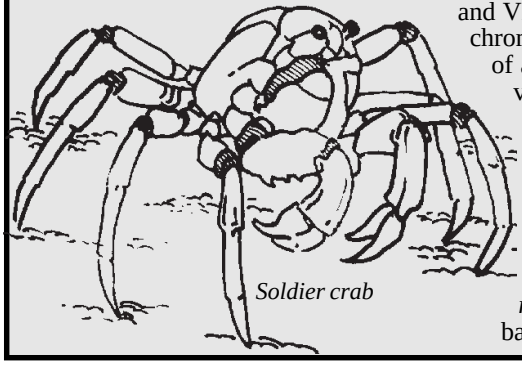
Ringtails and coppery brushtails are all found in the upland rainforests of the Wet Tropics. The green ringtail is the most widely distributed, and is found between Mt Misery in the north and the Paluma Range in the south. The lemuroid is found from the Carbine Tableland to the Cardwell Range. The Herbert River ringtail is distributed between the Lamb Range, near Cairns, and the Seaview Range, north of Townsville, while the very similar Daintree River ringtail is found to the north, from Thornton Peak (Daintree) to the Carbine Tableland. Although these ranges seem quite extensive, as these possums are upland dwellers (above 300-450m) many exist only in isolated populations on mountain tops.

Only the long-tailed pygmy possum and the striped possum are found in lowland as well as upland forests. The striped possum is widely (but sparsely) distributed, from Mt Spec to the tip of Cape York and into New Guinea. The long-tailed pygmy possum is found from Daintree to the Paluma Range and in New Guinea. Its apparent absence from Cape York may be because it simply hasn't been recorded there.

Questions & Answers

Q I refer to two enclosed photos, both taken on Hinchinbrook Island. Which crab is responsible for the sand castings which are very common on Mulligans Beach? How and why is the sand processed and what does the crab look like? Are the little blue crabs, photographed at Zoe Bay, soldier crabs? Do they have any interesting characteristics worthy of mention?

A The small sandy pellets are the feeding trails of a small ghost crab, probably of the genus *Scopimera*. It lives on the middle beach which is covered by all except the most extreme neap tides. It slips nimbly in and out of a deep vertical burrow leaving trails of sand balls, like lead shot, radiating out along the paths of its recent feeding journeys. They are probably left to the side of the paths so that the crab has a clear route back to its burrow in moments of danger. The crab works over the surface sand using its outer mouth parts to feed on algal slime. It is easy to watch this process by lying quietly and motionless beside a burrow until the crab emerges and begins to feed. The smallest and commonest of these crabs is *Scopimera intermedia*. It is 1.5cm across, and has a bluish-green shell which is wider at the back. Its long eye-stalks are either erect or folded into grooves.



Soldier crab

The blue crabs are indeed soldier crabs (*Mictyris longicarpus*). Each crab is about the size of a cherry and has a round blue shell with white legs and red knees. The body is elevated and the eye-stalks are short. Soldier crabs live on sandy tidal flats. Before the high tide each crab builds an igloo-like convex mound over its shallow burrow. When the tide recedes the crabs emerge one by one until large numbers of them appear on the previously empty beach. They form small groups which merge into armies sometimes thousands strong, picking up sand and leaving pear-shaped pellets behind.

Unlike other species the soldier crab can walk forwards instead of sideways. It also has a distinctive 'corkscrew' burrowing technique. It digs down with legs on one side while walking backwards with the legs of the other side, vanishing rapidly in a spiral movement into the soft sand.

Q Is it true the rainforest jumping ant is an extremely primitive life form consisting of just two chromosomes?

A Bulldog and jumper ants belong to the genus *Myrmecia*, which has about 60 species, and are found only in Australia. They are the most primitive ants in the world. *Myrmecia pilosula* occurs in New South Wales and Victoria and has only two chromosomes, the smallest number of any animal. Other species have various chromosome numbers up to about 50. There are several species of *Myrmecia* which occur in North Queensland rainforests but nothing is known about their chromosome numbers. The most interesting is *Myrmecia mjobergi*, which nests in the base of epiphytes in the canopy.

Tourist talk

ENGLISH	GERMAN	JAPANESE	
possum	Opossum	fukuronezumi	フクロネズミ
tail	Schwanz	shiipo	尻尾
ears	Ohren	mimi	耳
eyeshine	Augenglanz	ganquuhanshya	眼球反射
den	Höhle/Bau	ana	穴
diet	Diät	joshoku	常食
endemic	einzigartig	chihoutokuyu no	地方特有の
nocturnal	nächtlich	yakosei no	夜行性の
forest	Wald	shinlin	森林
distribution	Verteilung	boonpu	分布

Facts and stats

on possums

Predators on possums include owls (sooty and rufous) as well as pythons (particularly carpet pythons) and, possibly, spotted quolls.

Ringtails are very quiet animals, the adults generally remaining silent while the young may produce a quiet noise when separated from their mothers. Coppery brushtails make more noise while striped possums are the most vocal, producing a variety of harsh growling calls and loud shrieks while mating. Their presence is also indicated by their noisy and messy eating habits — rustling, scratching, snorting, slurping, chewing and falling debris!

A ringtail's tail is prehensile and can be used as a fifth limb. When it is not in use it keeps it neatly curled up. A brushtail's tail is only moderately prehensile so it's not so useful.

Ringtails have large sharp teeth which cut and grind leaves efficiently. Green ringtails, particularly, have enormous salivary glands with a buffering solution which allows them to deal with the many toxic leaves in their diet. This possum's food is so low in energy it eats its own faecal pellets, thus digesting the same material twice!

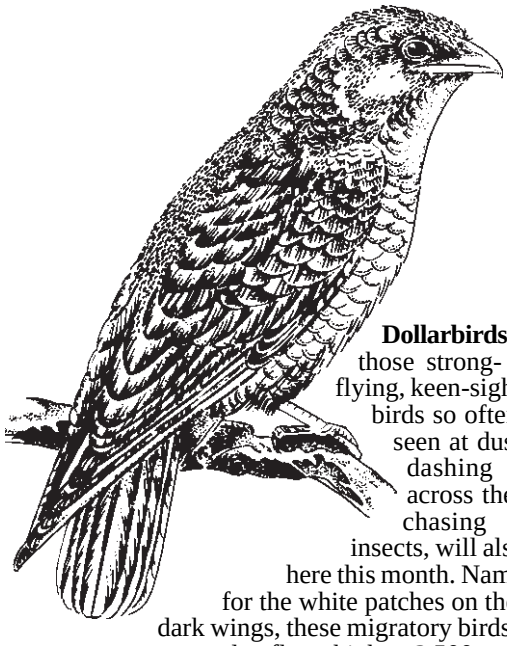
Striped possums have been seen tapping branches with their front feet when searching for food. This tapping may reveal hollow parts of the wood where beetle larvae are to be found.

The green ringtail, when disturbed at night, will curl up and sit motionless for hours staring calmly down at the intruder. Presumably this strategy conceals it from most predators. However, it can move quickly, often as soon as the observer turns away.

Nature notes

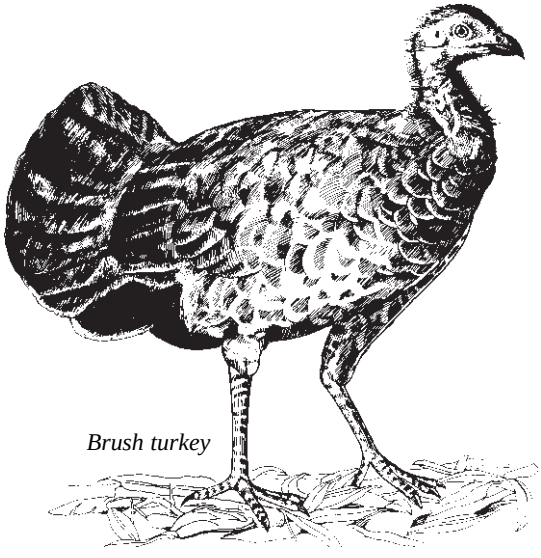
A diary of natural events creates a pleasing journal which grows richer with the passage of time. Watching for the recurrence of an event after noting it in a previous year, and trying to understand what could have caused changes in timing, is intriguing.

These notes are from the author's own notebook, or were offered by researchers and fellow naturalists. Readers will, inevitably, note variations between their observations and those appearing here. If you do not keep a nature diary perhaps this will inspire you to begin one.



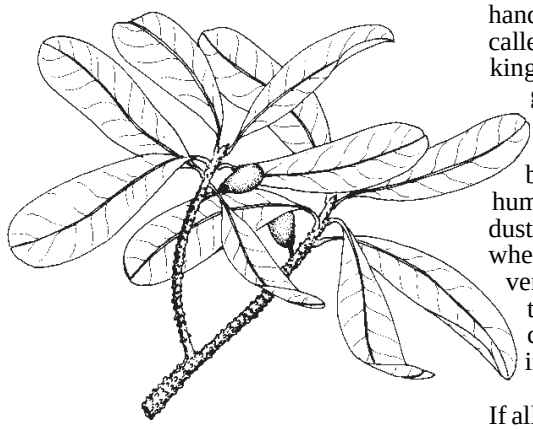
Dollarbirds, those strong-flying, keen-sighted birds so often seen at dusk dashing across the sky chasing insects, will also be here this month. Named for the white patches on their dark wings, these migratory birds are reported to fly as high as 2 500m when travelling south from New Guinea. (Source: *Readers Digest Complete Book of Australian Birds*.)

Because their loud, grating, chatter is quite audible on still evenings, dollar birds are detectable above the rainforest canopy. However, they are probably more at home in eucalypt woodlands. These birds nest in hollow branches of tall trees; old eucalypts and rainforest emergents are ideal. Dollar birds remained in the Daintree area until well into April of this year, which means they spend no more than half the year in New Guinea.



Brush turkey

Fruit on the tall, strikingly-buttressed **pencil cedar** (*Palaquium galactoxylum*) should ripen this month, following a good flowering in May. The fruit attracts a variety of birds as well as fruit bats. Large enough to fully occupy a teaspoon, pencil cedar fruits are yellow and soft when fully ripe, at which stage they are quite tasty, by bush standards. The seed carries a distinctive longitudinal scar which is typical of the Sapotaceae family. (Have a look at the seed of the next sapodilla you eat.) The primary leaves of the broken seed are bright pink. While some pencil cedars maintained a full crown of foliage, a high percentage shed all or most of their leaves in September this year and will consequently not fruit.



The two mound builders of the Wet Tropics, the **Australian brush-turkey** and the **orange-footed scrubfowl** have been busy since August, gathering leaf litter for the compost heaps which will incubate their eggs. Both species should lay several eggs this month, although early birds may have begun in spring. A brush turkey's egg weighs about 180gms, three times the size of an egg laid by a bird of comparable body weight which incubates its eggs by sitting on them in the conventional manner. As a result young brush turkeys are more mature and completely independent when they hatch. The eggs are unusually thin-shelled and very porous, allowing for maximum gas exchange in the rather stuffy atmosphere of the wonderful compost heap.
(Acknowledgments to Roger Seymour in *Scientific American*, December 1991.)

November is the month when **buff-breasted paradise-kingfishers** arrive in the Wet Tropics to select nest sites and raise new broods. These handsome birds, also called white-tailed kingfishers, breed in ground-level termite mounds found in rainforests. Soft-bodied termites prefer a humid atmosphere and a dust-free environment, so when their dome homes are ventilated by a kingfisher the termites seal off the chamber dug by this invasive bird.

If all goes well for the kingfisher couple, their three or four eggs will hatch by Christmas or early New Year. The youngsters will squawk, guzzle and squirt for the next month or so, until they are ready to emerge from the nursery. It is surprising that the reproductive success of this species is quite high because the young could be expected to provide easy meat for snakes and small goannas. Perhaps the smell of the nest chamber and the stabbing beaks of the babies are adequate repellents.

Adult buff-breasted paradise-kingfishers commonly use a loud *kek-kek-kek* call but they vary this with a pleasant, subdued trill. By mid-April, at the latest, the adults and their offspring will fly to New Guinea until the following November.

Bookshelf

Spotlight on Possums
Rupert Russell
University of Queensland Press (1980)

This delightful book is based on the author's fieldwork around the Atherton Tableland. It is a personal, anecdotal and informative account of most of the Wet Tropics possums and gliders and is superbly illustrated. Happily we have been given kind permission to reproduce some of the illustrations in this chapter.

Complete Book of Australian Mammals
Ronald Strahan (ed)
Angus and Robertson Publishers (1995)

This book provides an account of every species of native mammal known (in 1995) to have existed in Australia since European settlement and every introduced species now living in a wild state. There are several chapters on possums (Wet Tropics species and others). Each species is described and illustrated with excellent photographs over two to three pages. A statistics section gives details of size, identification, status and so on.

Rainforest Animals
Atlas of Vertebrates Endemic to Australia's Wet Tropics
H.A. Nix and M.A. Switzer
An Australian National Parks and Wildlife Service Publication (Kowari 1) (1991)

Five endemic possums are included in the mammal section (the coppery brushtail has not been included, perhaps because of its close relationship to the common brushtail). For each there is a picture, a map showing recorded and predicted locations, a description and data on its range. The chapter has an introduction by John Winter which mentions possums in conjunction with other mammals of the region.

Australian Natural History Vol. 21 No. 1
Charming ambassadors of our northern forests
Possums of Australia Part 2 - the north
John Winter

This very interesting, informative and readable article concentrates mainly on rainforest species and the cuscuses of Cape York with a mention of the gliders of the open forests.

Nature Australia Vol. 25 No. 5 Winter 1996
Possum patterns plucked from stone
Michael Archer

A look at the implications of the author's discovery of an ancient cuscus fossil in Queensland.

For the academics

Possums and Gliders
Andrew Smith and Ian Hume (eds)
Surrey Beatty and Sons Pty Ltd (1984)

Possums and Gliders Studies in Evolution
Michael Archer (ed)
Surrey Beatty and Sons Pty Ltd (1987).

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WET TROPICS MANAGEMENT AUTHORITY

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Environmental Protection Agency
Queensland Parks and Wildlife Service