

## Endnotes

i. Ordinary cow's milk with a little sugar dissolved in it by bringing it to the boil and allowing it to cool. I must point out that I have since been informed that this is very bad for other native animals who are unable to digest it properly; in ring-tails it causes cataracts, in other species it is more immediately fatal. Powdered milk or soy milk are better.

This does not seem to be true with bushy-tails, who probably owe their success in the suburbs in part to their ability to digest most human food - or for that matter small quantities of dog and cat food.

Some first make their presence known by regularly finishing up milk put out for domestic pets. Many, especially the females, do indeed develop cataracts in later years, but it so happens that those who received milk most regularly from me, Joey, Snoopy, Kylie and Miri, showed no signs of doing so up to the time when I last saw them; Snoopy was then four and a half years old, Kylie three. 'Miri', who might or might not have been the same possum as the baby Miri, did develop cataracts, but in her case the onset coincided with a very bad attack of the unidentified seasonal disease which seems endemic among the Newport possums in late summer and early autumn, and which left her with her hind legs out of commission for several months, and permanently partially disabled, as well as partially blind.

On the other hand, it is difficult for a small baby to adjust to a complete change of diet - all those mentioned had some sort of digestive troubles at first - and one unnamed baby with whom I had to do did indeed die of what appeared to be digestive troubles (see Part II, pp. 176 ff.) Yet another reason why hand-rearing a baby should be tried only as a last resort.

ii. See Jenny's 'twins', p. 299 f. and Bindi's problems handling Miri as well as Meggs, pp. 301 ff. In another instance, which happened without human intervention, one of the Newport females of later times, Dido, herself a 'twin', bemused by some sort of brain disease or injury of which she died shortly thereafter, adopted either the young Juni's son Jemmy, or Toecutter's son Puggy, in addition to her own son - or perhaps lost her own baby and adopted both, cf. Note xxxiii. After she died, despite my efforts to try to sort things out, the two babies 'imprinted' on to each other, each regarding the other as its mother, with potentially disastrous results: in a crisis, each would try to jump on to the other's back to be carried to safety, which resulted in a stationary, scrabbling, vulnerable ball of baby possums on the ground or floor, just waiting to be eaten by the nearest predator. They disappeared very early. Since bushy-tails are meant to be solitary, say one female to 2½ acres, it seems probable that no behavioural provision for this situation has developed. In a bush situation the chances of a young baby wandering into the proximity of the wrong female would be very low. While it seems possible that a 'twinning' gene might occur in a genetically isolated family group of neighbouring females, necessitating the development of some sort of 'normal' behaviour patterns to cover this contingency, this would be a matter of 'local culture', not of something innate in brush-tails as a whole.

iii. With females, at least, this is something of which I have had all too frequent experience - I'm the one who has to clean up. Snoopy, of course, scent-marked her territory daily, trailing the fluid from the rear gland across the floor, and chest-marking objects of particular significance, the corners of the wardrobe which served as boundaries of her scuttling-place, the legs of the chairs, my legs. In the end I ignored the chest-marking, which does not result in too conspicuous a smell to the human nose - although the behaviour of the baby Snoopy, sniffing out where Joey had scent-marked six months before, and of Miri, similarly seeking out Snoopy's favourite spots after a like interval, suggests it is more durable to a possum's sense of smell. As regards the scent-trails, I put down bits of lino where she was most likely to lay one, and cleaned them as little as possible. She was even more upset when I removed one of these scent-trails than when I cleaned away her body wastes; in the latter case her reaction was one of uncontrollable fury, in the former the fury was mingled with utter dismay - I was disorientating her, taking her territory away.

Not only did Snoopy leave trails across the floor at Ingleside, but those of the Newport possums who at one stage or another have had proprietorial feelings about my room - 'Pumpkin', her daughter Chrissie, and 'Miri', frequently laid trails along the window ledge, and elsewhere when possible. On one occasion Dido, who at this point seemed to have conceived (doomed) designs on that room, seized an opportunity and was methodically laying a trail along the top of a low bookcase until she encountered an

obstacle in the form of my leg. Undeterred, she continued blithely over the top of the obstacle, laying her trail all the way. She really was, without doubt, the stupidest possum I've ever met.

The fluid excreted is not urine. Possum urine is a clear, bright orange-brown liquid when fresh, resembling nothing so much as what used to be served on the Manly Ferry under the name of 'orange drink'.

It dries to leave a dark stain. The fluid excreted when marking a trail is a thick, milky viscous liquid which dries to leave a white line on the surface to which it is applied. When laying the trail, the female sometimes squats slightly, as if urinating, and occasionally urine is passed at the same time. However, the fact that the presence of urine is not invariable, in fact infrequent, suggests that this is coincidental, perhaps a separate reflex triggered off by the similarity of the position assumed. The case may be different with possums in other areas, or perhaps even with males - I cannot recall Joey, or for that matter Erik, the two males who most had the run of indoor areas, ever laying a trail as opposed to chest-marking, but that may well mean no more than that they did it, in the manner described, and I took no conscious notice because there was nothing unusual about it.

With Snoopy, there seemed to be a differentiation in the usage of the two forms of marking: the rear gland secretion was used for establishing routes, the chest-marking was used to establish ownership of actual possessions. Possibly the distinction arose purely as a matter of physical convenience: the rear gland secretion is appropriate to horizontal surfaces, such as the ground or horizontal tree branches, along which the possum walks, while vertical surfaces, such as tree trunks, up which a possum usually bounds, and so would leave sizeable gaps in the trail if the anal gland were employed, are more conveniently dealt with by chest-rubbing. However, Snoopy seemed to distinguish not so much between situations which were physically appropriate to one or the other as between situations which were qualitatively appropriate. I was, of course, one of her most treasured possessions, and she re-affirmed her ownership virtually every day by chest-rubbing my legs. Despite the fact that she had ample and frequent opportunity to lay an anal trail across them, when I was sitting on the floor after dinner watching television and she marched to and fro across me at will, I cannot remember her ever attempting to do so; while I cannot be sure that my shoes were never automatically smeared with the fluid, when she was laying a trail and then proceeded to sit down on my foot, she never deliberately laid a trail across me, in the manner of Dido's grand performance. Though of course, it may be that Snoopy was aware of the futility of such an action - that part of the trail was likely to get up and walk away any minute - while Di just didn't seem to think that far.

iv. Therefore, strictly, they are 'home ranges', not 'territories'.

v. For example, there was no distinct female dominant at Newport after Jenny's death, because the candidates were disqualified for one reason or another. Dido had the size, the will, the aggression, and the expanding territorial ambitions, but she was simply too stupid to put them into effect - not as humorous as it first seemed, since it emerged that there was some physical problem with her brain, from which she subsequently died. 'Miri' had all the qualifications, but suffered a disastrous health problem (see Part III), which prevented her from taking over the role. 'Pumpkin', the senior female, had the size, and was not lacking in intelligence; she was a kind of possum version of the emperor Claudius, extremely eccentric, and really a fool in some ways, but highly astute in others. However, she was the gentlest natured of possums, both with humans and with other possums (see below, pp. 336 ff.). She was rather like Snoopy. She was just too nice a possum to ever want to be a dominant. Her daughter Chrissie briefly seemed to be in contention, but was similarly disbarred by her personality (see pp. 336 ff.) The obvious heir apparent was young Juni, but her time was not yet: she was only a few weeks out of the pouch when Jenny died.

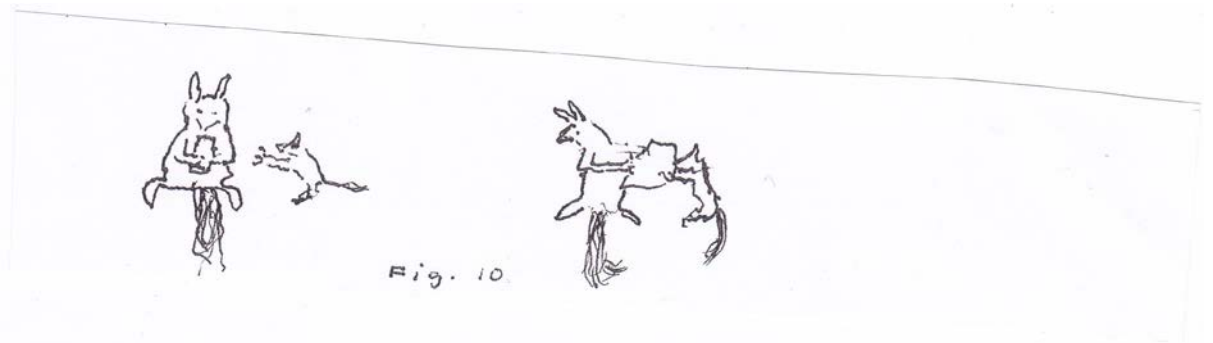
vi. I am reliably informed that the technical term is 'averted gaze'.

vii. There seems some doubt as to whether 'rape' is technically possible; in some other species of marsupials lordosis, and so some response on the part of the female, is necessary for intromission to take place. With brush-tails, however, there is an added factor to take into consideration, since the angle of entry can be varied extensively: while normal, voluntary mating takes place with the couple in the horizontal plane, the male mounting the female from the rear in the common quadruped manner, when an over-

enthusiastic male literally jumps on a female they can be in any relationship to the horizontal plane, including dangling upside down by their tails, so that the angle of the male's body to the females can vary drastically. Whatever the exact truth of the matter, if there is any momentary response by the female in such situations it is very brief, and so instinctual that she herself is unaware of it - she escapes at the first possible moment, never having ceased to struggle and resist, and runs, terrified and panic-stricken.

viii. The only time I've known this to happen it seemed to be an accident. The male, in his ardour, left his departure too late, and found himself caught out in the daylight. In a panic, he squeezed himself into the nearest refuge, the female's nest, preferring the hostile treatment he received there to being exposed during the day.

ix.. This interpretation is, of course, debatable. It has been suggested to me by Mr. Malcolm Smith that Jenny's behaviour was simply a matter of a conflict between two drives, food envy and her inhibition against aggression towards her baby, solved, as in Not Seeing, by turning away and so removing the aggression stimulus. This is possible, but difficult. There appeared to be an extra movement in Jenny's action which needs to be accounted for. Starting with head and body frontal, the food more or less in line with her body, she would turn her head and shoulders to the side, away from the baby, leaving the lower part of her body frontal, at the same time moving her hands, with the bread, towards the baby. All very awkward.



The only alternative to Jenny's encouraging the baby to steal would seem to be that Jenny was actually feeding the baby, which is 'worse'.

At first sight there seems nothing extraordinary about that. But mother possums do not usually feed their babies; at best they hold the food in a position where it is convenient for the baby, as well as themselves, to eat it, but it is the baby who initiates this by evincing a desire for the food, often actually pulling it closer to itself. There is in fact nothing in a possum's experience which would suggest the concept that it itself is a food-giver: babies suck from their mothers; later they share her food, but in both cases it is they who take it from her. It is easy to see why a possum could conceive of its mother as a food-giver, and even transfer the concept to a human who normally provides handouts, but for any individual to conceive of itself in that way seems to involve a conceptual jump of a higher order of magnitude than most possums show capacity for. Jenny, to be sure, was very bright, and bright in just the particular way needed - she had a remarkable ability to comprehend a situation as a whole. But one still wonders what, in her experience, could have given her the idea.

Nevertheless, the point can be settled, at least as far as the possibility of an exceptionally bright mother being able to conceive of herself in this role is concerned. In spring 1977 I was watching Sherry, the brightest of the surviving foxy-possums, eating carrot with her current baby, Spica. They specialized in double-dangling, either hanging side by side with tails overlapping as they twined around

the branch, or, to bring Spica's mouth level with Sherry's, if Sherry were holding a piece of food too heavy for Spica to support in that position, Sherry would hang by her tail from the branch and Spica would hang by her tail, curled not around the branch, but around the base of Sherry's, so that Sherry supported the weight of both. They were dangling side by side like this when they came to the end of the carrot - there were about two mouthfuls left. Spica wanted some of it, but Sherry wanted it too, and held it away from her, out of reach in the hand furthest from the baby. However, she relented. After taking another bite, while she was still chewing it in her interminable foxy-poss way, she moved her arm back diagonally across her body, and literally popped the remaining morsel into the baby's mouth. There is no doubt that Sherry voluntarily and deliberately fed her baby.

x. One of the best examples of this discrimination between individuals comes from late 1989 or early 1990, outside the main period covered by this book, and concerns a possum named Sweetie, my dog Trixie, then a puppy, and a dog on an adjacent property. Sweetie turned up one night with a nasty injury, a deep dog canine tooth mark behind one ear - it must have been a very near thing, the dog must have had her by the back of the neck. I do not know which dog was responsible. Every dog in the neighbourhood was a potential suspect, except Trixie, not because of my partiality for my own, but because of dentition - this was an adult dog tooth mark, and she was still a needle-mouth. However, the prime suspect had to be a dog residing on one of the adjacent properties: at that time Sweetie was in the habit of frequenting the bushes along that fence-line, and the dog had already killed a bandicoot, perhaps by mistake for a rat. In any case, I never again saw Sweetie anywhere near that property - she changed her nightly haunts. She never again appeared with any sign of being molested by a dog.

I had assumed that Trixie, being an oversized cattle dog cross, would be a yard-dog, not a house-dog, let alone a bed-dog, and at that time she was still in the process of re-educating me. She was supposed to sleep outside in the comparative luxury of a retired caravan, and at the least got her nightly grooming there. She was, of course, like all my domestic animals, conditioned from babyhood to the idea that the worst thing she could do was molest the wildlife, but with her things went further of their own accord. Dogs seem to come in two sorts, those which hate cats, and those which love them with a fanaticism which would shame even the most ardent human cat-fancier. Trixie was the latter type - brought up with an adult tom-cat, she regarded him as her father, her pack leader and her god, and thought the world began and ended with him; consequently she proved something of a problem when out on the lead, since the sight of cat was apt to result in the near-dislocation of my shoulder - she wanted to get to the cat, not to chase it, but to love it and lick it, but unfortunately not all cats knew that. She seemed to think the possums were another sort of cat - occasionally some deep buried instinct caused her to tense for a spring towards her potential dinner, but if the possum remained close sheer adoration always outweighed that reflex - heaven was when a possum actually touched noses with her in greeting.

So far from steering clear of the caravan because of the dog-smell after her experience, Sweetie started turning up as soon as I put the light on to groom Trixie, and coming right inside to ask for a handout. Trixie thought all her Christmases had come at once. Since she and I were together, when Sweetie came up to me to ask for bread, Trixie apparently thought she was coming to her. Sweetie very soon got into the habit of coming straight up to Trixie on the floor at my feet and touching noses with her. Since I tossed the bread down from above, it gave the impression that Trixie was giving it to her. Trixie herself seemed have some idea about what the proper ceremony was - if for some reason I didn't produce a piece of bread for Sweetie immediately, not only did I have Sweetie importuning but I also had Trixie agitating for me to perform my proper role. So in a sense she did get her handout from Trixie, at least insofar as Trixie made sure that it was provided.

So, after her experience, she stayed well away from the dog who had attacked her, which was dangerous, but struck up a very close, physically close, relationship with another dog, Trixie, who was safe and possibly useful. Not only did Sweetie make a total distinction between Trixie and her attacker, whoever it was, but she brought up her two subsequent daughters, Sooky and Chooky to follow the same nightly routine, coming into the caravan to get a handout from Trixie. For several years, therefore, Trixie had her own personal possum friends who got their handouts, not so much from me, as from her. The relationship between the possums and the dog was therefore very similar to that which can spring up between possums and horses, described below.

xi. There is apparently some doubt about this gait, perhaps because it is very specialized in regard to the conditions of its use, and so seldom seen, especially in the suburbs. It is used as the gait for long distance travel on the ground through the more sparsely covered marginal areas, such as the slopes up from the creek depression at Ingleside, places where there is still, however, enough general vegetation to hide the presence of the animal concerned. When it becomes necessary for the possum to cover cleared spaces, it reverts to the diagonal scuttling run, which keeps it lower to the ground - the danger of cleared spaces is that it might be seen by a predator when it is out of range of trees, and the last thing it wants is to make itself conspicuous. Nothing could be more conspicuous than possum bobbing up and down across a clearing. Alternatively, it is used when a possum has already been spotted, and is fleeing across the ground to the nearest tree, a situation in which speed is at a premium, and concealment no longer relevant: the diagonal gait is lightning fast, but only over a very short distance. Erik would break into the bounding gait when I was accidentally 'hunting' him, once he regained enough strength in his hind legs to do so.

It is rarely used in the suburbs, because situations appropriate to its use seldom occur. From the possum point of view, the suburban landscape is composed of trees, or their equivalent, such as roofs, above ground routes in any case, open spaces across which it is advisable to run, and safe areas where predators are excluded - by human intervention or otherwise - in which it is permissible to trot in a leisurely manner. I remember vividly the first time I encountered it, probably the best part of a year after I consciously started watching possums. Mrs. Poss was late for her handout, and I was waiting for her in the usual place. The night was fine and I was lying down on the grass beside a tussock about 18" high. Suddenly Mrs. Poss came flying over the tussock, body upright in the air, ears erect, for all the world like an overgrown jackrabbit. I nearly died of shock.

To my mind there is no doubt that it is essentially a bipedal gait. Both hind legs work together, providing the motive power, and the front paws play no effective role. While they may touch the ground between bounds when the possum is travelling comparatively slowly, they do not produce any of the thrust, and when the possum picks up speed, need not touch the ground at all. I was discussing this matter with someone one evening, and returned home with the point still fresh in my mind, when Battered Baby obligingly gave a demonstration of a single movement: she was holding a slice of bread, her mouth in the centre of one side, and one front hand on each of the perpendicular sides, when she bounded over an obstacle about 18" high. Her body remained upright, her hands remained full of her dinner, and she landed on her hind feet. I have since seen at least one other possum do likewise, and in other instances, even when the light was too poor to actually see whether or not the front paws touched the ground, the angle of the body to the ground made it clear that they did not.

xii. At Newport, not long before first drafting this, I saw Sherry, then the brightest of the remaining foxy-possums, apparently use her outer, little finger on her front paw to oppose the others when holding a slice of bread, although the necessary pressure was being applied by the larger fourth finger, which she curved, arching it up against the bread, and the little finger was merely a backboard. It was probably fortuitous, but Sherry was just the sort of possum who might exploit such a happy accident; unfortunately, I never managed to spot her doing it again.

xiii. Snoopy used to do it, accompanied by tail-lashing, in a context which made it quite clear that she was torn between two things: having just chased Kylie or Bindi out the window she was wavering on the sill, torn between rage at the effrontery of the intrusion and the desire to chase the offender further, and fear born of a knowledge of her own physical inferiority and what she could expect from her opponent once she no longer had the advantage of being in her own core territory.

At first I thought it was just Snoopy, who was no doubt eccentric, and could hardly be used as a case to establish the norm. But I later heard other females click, in the same sort of context, indecision and conflict of strong emotions. 'Miri', a normally aggressive and hyper-territorial female (cf. above, Note v), but disabled through illness, was being plagued by a neighbouring female, one of the foxy-poss crosses who seemed to answer to 'Moto', and could possibly have been Foxy's daughter of that name. 'Moto' was making repeated intrusions into 'Miri' 's core territory. Normally this invader was despatched with celerity, but now the ailing territory holder's movements were so hampered that the interloper simply moved ten feet or so when she came towards her, sat down and had a snack from the

nearest tree until 'Miri' made her painful way to within a few feet of her, then flashed away again, as likely as not back in the direction of the nest, by another route which was now too difficult for the incapacitated proprietor. Once clear, 'Moto' sat down and had another snack, waiting until the exasperated 'Miri' caught up with her again, after having to go the long way round. This went on for about twenty minutes, until the intruder happened to be on the periphery of the territory, though by no means out of the precinct usually forbidden her. 'Miri', in obvious distress, began to lash her tail and click, starting off to chase 'Moto' again, then stopping and coming back, starting off again, then finally decided that that would have to do, and returned to the nest.

'Pumpkin', too, clicked when I first tried to examine her injured baby, Marco (cf. below, pp. 336 f.), apparently feeling that she should protect him from me, but doubtful about attacking me, because I was a person she trusted, the one who fed her, and especially the one with whom she had made a practice of parking previous babies. I have since heard many other females click, in circumstances where such precise interpretation is impossible, but always in circumstances consistent with their being in a state of indecision.

xiv. He developed the somewhat annoying habit of coming in the window of the bedroom after I had turned the light out, when I was asleep or nearly asleep, marching up the bed and going 'Nif, Nif, Nif, Where's the bread?' in my ear. Now Pig knew the layout of my bedroom fairly well. He knew where any bread that was left was likely to be, and if I refused to take any notice of him, would root around and find it for himself. He knew full well that it was not kept in my lug-hole. What he was doing with his 'Nif, Nif, Nif' was trying to get my attention and persuade me to get it for him, to save him the time and effort involved in jumping down from the bed and riffling through a plastic bag a food below the aforesaid lug-hole.

Apart from being somewhat irritating when I had only just got to sleep, there was only one real problem with this. Sometimes, annoyed at the interruption and aware that he had already been fed, I would reach out sleepily and brush him away - and encounter something far less innocuous, like Juni, who was still growing out of her adolescent biting phase, or Dido, who never did.

All such activities were curtailed when the bedroom was converted into a makeshift study, but Pig, the chief exponent of the noble art of Nif, Nif, Nif apparently felt that it ought not be allowed to languish. Not long after the conversion he was begging for something I was loth to part with - my cup of tea, I think. He had me trapped in a chair beside the erstwhile dressing table, so I put it as far away as I could on the dressing table, not expecting it to avail me much, since he had previously had no compunctions about jumping up there if the occasion arose. Instead, he planted himself firmly on my lap and proceeded to Nif, Nif, Nif in my face, his nose touching mine. He could just as easily have sniffed it out for himself, as it was only about eighteen inches away, but that, no doubt, would have spoilt the game.

xv. This seems to involve what is known as displacement, with perhaps a degree of reconstitution - for an intelligible explanation of these terms, though in a specifically linguistic context, see Eugene Linden, *Apes, Men and Language* (Pelican Books, 1976), pp. 68-9 etc. In the old days the capacity for this kind of thought was supposed to be the exclusive prerogative of man: animals were prisoners of the moment, unable to reason because they responded only to immediate stimuli (again, for a 'popular' account, *Apes, Men and Language*, e.g. p. 35). The argument never seemed particularly cogent: because man has specialized in reasoning, it doesn't seem to follow necessarily that other species cannot reason at all, particularly when one considers the case with other specialities of the various species. For example, the fact that monkeys (and, among the non-placentals, possums) specialize in climbing does not mean that other animals do not climb at all; even among mammals, cats and rats, for example, climb quite effectively, although they are not in the same class as far as virtuosity goes. Mammals such as otters, seals, beavers, platypuses, and, above all dolphins and whales, have specialized in swimming; this does not mean that other species cannot swim at all; most can in fact swim a little - often not very well, but swim they do when they have to. While some specialities are indeed exclusive, it seems to beg the question to assume *a priori* that mental specialities must fall into this category, rather than the more common one, in which there is a gradation of capacity throughout a range of species. It should hardly be surprising, therefore, that the 'higher mammals' are capable of a minimal amount of forethought and reasoning.

This view of man as the exclusive proprietor of all powers of reasoning, rather than their best exponent, has fortunately been broken down in recent years. In particular, the tool-making chimpanzees of the Gombe Reserve, and the Ameslan-speaking chimps of the American Institute for Primate Studies have cast grave doubts on the physiological arguments advanced in support of the old hypothesis. And a gorilla who tells lies, and, moreover, tells lies in a situation where the truth might involve unpleasant personal consequences, seems likely to prove a lasting embarrassment to special elitists who wish to make all other animals 'prisoners of the moment'.

Given this, it no longer seems outlandish to attribute an even lesser capacity for displacement to 'lower' species still, with the rider that within a given species there will always be a great deal of variation in the capacity of different individuals. Bushy-tail possums are certainly not the lowest of the low; in practice, in everyday life, their performance in terms of what they work out for themselves, as opposed to what they can be taught, suggests to me that they cover roughly the same intelligence range as dogs and cats: a few are extra bright, most are moderately bright, and some are blithering idiots. It is not particularly surprising that Joey did what he did; the astonishing thing is that he did it at such an early age, though later I saw another small baby doing something which appeared to be comparable.

What seems to be a clear adult example of the capacity for at least minimal displacement was provided later by 'Pumpkin', see below, pp. 337 f.

I can think of nothing that sheds much light on the question of how many moves ahead a possum can think, or for that matter the question of numeracy. I did not count the number of bricks in the last sequence which Erik unscrambled; at the time I wasn't trying to devise an intelligence test, I was trying to keep a recalcitrant old invalid in for his own good. 'Miri' seemed to be able to count up to three, at least in the sense of 'that one, and that one, and that one', after which, presumably, there were 'a lot'. When she first became ill, she was quite emaciated, but too weak even to make the effort to eat, unless I put before her something completely irresistible, so that she started eating before she knew it - just like a human invalid. What proved to be irresistible in her case was a certain thin type of biscuit called 'Honey Snaps'; she effectively lived on these for several weeks, going through half a dozen at a session, with a little bit of banana and Jonathan apple thrown in. Naturally, I didn't think this was a good idea on a permanent basis, and as she recovered I started to reduce the number of biscuits, substituting more suitable food. We struck trouble when we got down to four: she seemed to know that there should be that one, and that one, and that one - and more, though how much more she was uncertain. However, again it was a matter of coping *ad hoc* with a particular situation rather than devising an intelligence test; I didn't think of trying to fool her by breaking the biscuits in half, supplying the same number of smaller units, until after the whole situation changed and the point became irrelevant; it is therefore uncertain whether this was an instance of true numeracy or not, whether what she considered her entitlement was a certain number of biscuits, or a certain quantity of biscuit.

xvi. I have since seen this mode of travel used regularly by possums whose nightly route takes them through vegetation such as bamboo. The most spectacular performer was Timmy, who used precisely the same technique, going up the opposite side of the stem to the direction in which he wished to travel, but he practised it on forty-foot bamboo in order to cross over a concrete drive.

This would seem, debatably, to put them in the class of borderline tool-users, as opposed to tool-makers. Another of Joey's baby games seems to point in the same direction: he delighted in playing with a fine rope or cord; if I took a short piece of cord and jiggled it provocatively in front of him, he would seize it with alacrity, and haul it in hand over hand, like a miniature Jack Tar, allowing the excess to fall loosely to the ground below his hands as he acquired the next section; he seldom attempted to climb it; the obvious aim of the game was to capture what was on the end of the rope, namely my hand, to be 'attacked' or cuddled as the mood took him when he finally hauled in his prize. I presume this to be a reflection of a situation where coveted, tender leaves occur at the end of a pliant branch, and can similarly be hauled in by hauling on the stem: while I have never seen an exact parallel, I have seen possums pull supple stems towards them in order to bring the leaves at the end within reach. Again, the tendency of some to allow compliant humans to hold cumbersome pieces of food for them, for example a slice of bread, but place their own hands over the human's and move them as they would their own to turn the food gradually as they eat first one part then another, although it seems purely reflexive (see Note xviii) may point in the same direction. Certainly they are quick to see the use of such tools when

supplied; whenever the babies got themselves cornered by larger possums, out of my reach, I would scout around for a long stick with which I could reach them; they came down this extension of my arm, although it itself was unfamiliar to them, almost instantaneously, if not quite so automatically as they would have come down my arm itself in a similar situation; only after experience had taught them wisdom did they hesitate, questioning my judgment as to whether the stick I had snatched up was strong enough to hold their weight, and whether my arm was strong enough to hold the stick, often about six feet long, steady under their weight when both arm and stick were fully extended. At a much later date I had occasion to try to smooth over an altercation between Dido, her adolescent daughter Tari, and 'Miri', before they jointly destroyed my room and the adjacent area outside. As usual, the method was to distract them and calm the ruffled tempers by presenting them each with a slice of bread. By the time I got to Tari she was up a tree, out of reach; she dangled hopefully, but was still ten feet above my head. The only vehicle for the bread which I could see nearby was a dead casuarina branch, with a twig over which the bread could be hooked about six or eight inches from the end. The end of the branch could just reach Tari, but the bread was still out her reach so she promptly seized the end of the branch and hauled it in until she brought the bread within reach.

The question will not be settled unless and until some extra bright possum, on its own initiative, publicly picks up a stick and uses it to hook a bunch of leaves that is out of its reach, or, less likely because the necessary size of the stick relative to the possum, to form a bridge across a short gap - a gap small enough to be bridged by a stick the size a possum could handle would normally be jumped.

While this is not entirely beyond the bounds of possibility for a possum superbright like the young Jenny, particularly if the possum in question had a previous, serendipitous experience such as those described, I should be startled if a possum ever actually made a tool, trimming a stick to a suitable size and shape for its purpose. While, because of their well-nigh pathological aversion to displaying intelligence except where there is good possum, as opposed to human, reason to do so, it is very difficult to say how intelligent possums aren't, I have never seen anything to suggest that they are quite of that order.

xvii. There are nearly as many definitions of humour as there are of intelligence, but one, certainly, involves taking pleasure in surprise, a sudden reversal of expectations, with an element of absurdity, a paradoxically congruous incongruity. And primitive humour is notoriously cruel, entailing pleasure at the discomfort of another party, a joke at someone else's expense. One incident involving Mephistopheles fulfils both these criteria.

When Meph first arrived his recent eye injury seemed to have upset his binocular vision, and hence his ability to judge distance accurately, particularly close up. He was forever taking part of my hand in mistake for the food I was offering - quite accidentally, and he himself exhibited signs of distress when he realised what had happened. But once he broke the skin the biting reflex took over, and he batted on with the typical possum bulldog grip. If I tried to pull my hand away, I tore it on his teeth, if I left it where it was he sank his teeth in progressively further. I was damned if I did, and damned if I didn't.

My mother made light of the situation, so finally, whenever he appeared, I called her and told her her possum was waiting. Mephistopheles had me terrified, and he knew it.

The other person he had terrified was poor little Foxy, then somewhere between six months and a year old, and coping valiantly with a grossly distended pouch: tiny Foxy, like all her line, was a miniature possum in comparison to the females of the surrounding groups, and the baby, as it turned out, was a cross with the large Jenny-Poss family, who took after them in regard to size. Meph seemed to derive great pleasure from the fact that here was a female small enough and timid enough for him to bully, and proceeded to tease the life out of her.

He haunted us whenever I went out to feed her, chasing her, stealing her bread, and generally disrupting proceedings to the utmost of his ability, all the more so when he found that I'd give him extra food in an attempt to keep him quiet while she had hers. The whole Foxy family seemed to have taken the adage about chewing each mouthful a hundred times as holy writ - something which may perhaps finally have been explained as an hereditary tendency to pancreatitis and digestive troubles generally. Meph, of course, would wolf whatever I gave him, and then be back plaguing Foxy before her lugubrious mastications had made even a perceptible start on her share. From Meph's point of view, the whole situation was



obviously highly satisfactory.

On the occasion in question, he had both me and Foxy thoroughly unnerved. I was reduced to precisely that state in which, above all, one should never allow oneself to be when dealing with animals, namely impotent indecision.

Foxy was on one end of a low branch with Meph approaching, yet again, from the other. I was between them, with a slice of bread in my hand, vacillating between giving it to Foxy in the hope she could escape with it and giving it to Meph, to hold him while I found another for her; my hand and the bread were oscillating backwards and forwards between them in time with my vacillations.

Meph viewed the scene with mild exasperation. And then he sprang.

It was one of those situations where your perceptions speed up to the point where time seems to slow down - a fraction of a second seems like hours. I could see Meph's movement as if it were in slow motion, but I literally couldn't move a muscle to do anything about it. And I thought, 'I'm gone this time, for sure.'

He made one of those huge, exaggerated, predatory pounces, the sort that characterized little Joey's play, arcing high in the air, up on his back legs then down with his front paws. Straight on to my paralysed hand. Gotcha.

But a couple of inches above my hand he checked his movement, and his front paws just brushed my hand, as lightly as a falling leaf.

I nearly fainted.

Mephistopheles sat up there on the branch with his whole body radiating pure delight. He thought it was the funniest thing that had happened since Noah mistook the snake for a sloe-worm. Freely translated, he sat up there on the branch laughing his ruddy head off.

It was some minutes before I could share the joke, and laugh with him.

Apparently, during the period when my mother was handling his regular feeding, he had gradually been adjusting to his disability and now, once more, was capable of judging his movements to perfection. All unbeknownst to me.

All the ingredients are here. The whole point of the episode, the reason for Mephistopheles' enjoyment, was that, contrary to expectation, he had not hurt me. The incongruity is there, too - he nearly frightened me to death by not hurting me. And he certainly seemed to derive a great deal of pleasure out of my discomfort, all the more so because it was absurd - he knew my fears to be baseless.

xviii. This, too, is by no means as astonishing as it first appears, but is perhaps another case of an intelligent possum adapting an established action to a new situation in which it is appropriate. Jenny, as well as some of the others, often took advantage of my compliance if I gave them something bulky to eat, such as a slice of bread, letting me support the weight but placing their hands over mine and guiding the food to the most convenient position for eating, turning it constantly as each section was consumed, to get to the next. What the real origin of this practice is I do not know - perhaps it is somehow connected with the fact that a number of the brighter females regularly hold food in a position where it is convenient for their babies to get it. However, I have never seen a baby place its hands over its mother's to guide it - if the baby wants the food moved closer, it just pulls at it, or snatches a small piece off it. The action of placing their hands over mine seems to be purely reflexive rather than deliberately thought out: they act exactly as if they themselves were holding the object in question, which, in a sense, they are, per medium of the 'handles' in the form of my hands. In similar vein, those fed in the dish on the end of the stick sometimes take hold of the dish, and move it as necessary, rather than taking the food out of it - somewhat irritating in a group situation, since you can't feed the next possum until the current one has finished.

xix. The same was true in the case of Snoopy's own daughter, Kylie. I didn't take as much of a hand in her raising as I did with Snoopy. I simply let Snoopy raise her herself, with only minor assistance where necessary. But I was in close physical contact with Kylie. She slept with Snoopy on or in the bed as the case might be. She shared the food I provided for Snoopy, both her dish of human food and her vases of leaves. Both would cadge some of my food - often exactly the same as what they were given, even cut from the same apple or banana - it was the social aspect of the game which made them leave theirs if they could get some of mine. I petted Kylie and played with her, as I petted and played with Snoopy. Snoopy

showed no signs whatsoever of rejecting Kylie until the proper stage of her development - more than the proper stage, as we found to our cost.

xx. There are others like it, but I haven't included them in this account. I'm sticking to the things which were repeated often enough to rule out coincidence, though there were some beauties.

Kylie, when she grew to independence and was returning to the house for handouts, on one occasion rang the wind-charm on the veranda when she wanted seconds. It's a good story, but a coincidence. It only happened once, and it happened when she came down, as most possums will, to see if she could cadge any more; her route lay past the the wind-charm and she accidentally rang it as she passed.

Mephistopheles `said' his eye injury was caused by a cat. What happened, as always when I say a possum `said' anything more complex than the basics (opinions of food, of sounds in the night - safe or unsafe, interesting or uninteresting - and so forth), was that the possum in question made one of the standard gestures known to both of us which it used when trying to communicate something, and I, through practice and knowledge of the individual animal's attitudes and moods and the circumstances, interpreted what the particular message was, and received some confirmation, either from the possum's reaction or from evidence found later. As any dog owner knows, this, with practice over a period of years, can result in quite sophisticated messages being passed. Well, in that sense, Mephistopheles said it was a cat. And, by coincidence, the sound produced by his own personal vocal equipment, modified by his mood, would be phonetically transcribed as, `kat-kat-kat'. So any way you look at it, `cat' was what he said. Another coincidence.

xxi. `Miri' at Newport developed the same gesture, namely actually throwing away an undesired piece of food, as a means of communication with me during the time she was convalescing from her first illness. At that stage, with her hind legs virtually out of commission, she was very clumsy about holding titbits when she was up a tree: her front paws had to take over some of the gripping and anchoring functions of the hind ones so that she had, at most, one hand to spare for food that would normally have required two.

As a result, she was forever dropping things, peering down, stricken, as her favourite food of the moment tumbled to the ground. Naturally, I would pick up the piece in question and return it to her - it would have taken her about ten minutes to make her painful way down and retrieve it for herself, during which time she would have been at risk from any dog that happened to stray past. But she also dropped pieces of food which I offered her and which she decided she didn't want to eat. I was forever pestering the life out of her by persistently returning what she had already rejected several times, not recognising the difference between deliberate and accidental dropping. In exasperation she finally developed the habit of throwing the offending object away, on occasion, accidentally or otherwise, sending it hurtling down on my guilty head. Even an animal as stupid as a human could hardly mistake that!

Joking aside, possums do not seem to have a very high opinion of human intelligence. On several occasions during that period I caught `Miri' looking at me in what appeared to be astonishment, when I managed to do something right, correctly interpreting her signals as indicating that she wanted to be carried to her nest, or to a particular tree. Jenny behaved in the same manner while we were jointly looking after Snoopy, just as I often looked at her in sheer incredulity when either one of my more complex messages got through, or she worked out the situation for herself and came to the same conclusion as to what was required of her. Clearly, they hadn't realised that humans were so intelligent! Not surprising, considering that most humans, including myself at that stage, are as ignorant of possum etiquette as a backward possum baby, if not more so, which might well be one of the criteria for judging intelligence, or competence, or however they conceive of it. It has even reached the stage where an experienced possum like Big Pink Pig obviously expected to be touched and pawed over whenever he arrived, though he didn't really seem to like it. A great deal is to be laid at the door of inadequate communications, as opposed to inadequate intelligence.

xxii. An undirectional, prolonged loud calling, like a possum crying its territory before going to bed. I have heard at least one other male do it in similar circumstances, immediately after a successful coupling. The male involved was a particularly timid individual - he had even been temporarily put off by my presence when I happened to wander past while he was mounting the female. I had to discretely withdraw, so I cannot, I must admit, be sure he went on with it, although he was still in position when I

last actually saw him. But about twenty minutes later he appeared in a nearby tree yelling his head off, broadcasting in all directions. The area in question was one of the favourite possum haunts of that time of night, and normally he was wont to slink through in perpetual terror, not only of the females but also of the older, larger, resident male. The last thing he would have done was announce his presence so loudly and conspicuously.

xxiii. This 'two-possum' phase seems to be a normal part of adolescence. Not only did both Snoopy and Kylie go through it, manifested in slightly different ways in each case because of their different personalities - in Kylie it merged into her embittered adult vendetta - but Juni (Jenny Junior, whom I inherited when Jenny died, and helped raise on a similar basis to Miri, i.e. not imprinted on me, see Epilogue) went through something very similar at the same age, between about six months and a year from the pouch. My relationship with other female juveniles who remained after they matured was not such that the phase would have been evident, since I seldom came into such physical proximity to them as would trigger off the biting reflex. However, I had noticed that adolescent females tended to be aggressive, but erratic in their behaviour, 'neurotic', even when they were not apparently pregnant. And one of Sherry's daughters, Spica (the baby involved in the feeding incident, above, Note ix), showed very similar behaviour at the same age. As a baby, like all the others of her family who took after the Foxy-possum line, she was so tiny, and so much like a toy possum, that it was hard to keep your hands off her; like several others in her family, she herself actually seem to enjoy a moderate amount of petting. But one evening as I moved to touch her, she suddenly swung round on me, transformed into a miniature raging lion - or female possum. I must admit that I did not, in the interests of science, press the point to make sure that she had gone into a biting phase - I started feeding her with a stick and kept myself at a respectful distance where I would not provoke a biting reflex.

More importantly, Timmy, the first male juvenile not to depart, went through the same phase. All of the others were, or might have been, in early pregnancy: it is common for first babies to be lost so early that no sign of the pregnancy ever becomes apparent without a close medical examination; therefore, if confined to females, this behaviour might have been due entirely to the aggressiveness which characterises the first couple of months of pouch-gravidity, rather than being a special adolescent phase.

But this could hardly apply to Timmy. He would come in the window, as he had since he first started to wander around on his own, ask for bread in exactly the same manner, then, as my hand approached him, he would suddenly sink his teeth into the hand. The next minute he would be back to normal, acting as if nothing had happened. When I cuffed him, his reaction seemed to be one of astonishment. He didn't seem to associate the cuff with the bite, because he didn't even seem to know that he had bitten me. Nevertheless, I continued to cuff him whenever it happened, even though I knew that, at the time, he couldn't help himself: somehow he had to learn to associate the punishment with the crime, and control that reflex; a possum who bites any living thing that comes into its proximity is not long for this world.

Apparently, he was behaving in the same manner with his own kind, and receiving the same sort of aversion therapy, but rather more drastic in its degree: he would go off at night in a certain direction, and we would hear the squawks; he would return later that night or the next, with a considerably proportion of the fur missing from his rump or flank. For several weeks, the plucking of Timmy was an almost nightly ceremony. Fortunately, he too seemed to grow out of the phase, though he remained a singularly bumptious young man.

I have since seen what appeared to be a version of the same thing in another male adolescent; in retrospect, Twiddly may have gone through the same phase, see above, pp. 59 f.

xxiv. Apparently the cat would climb the possum's tree in the daytime, get into its nest and curl up with it. I have no reason to doubt the story. While some cats follow the leonine social model, relating to other cats residing in the same place as to members of the same pride, at least some follow the solitary social model of other large felines such as tigers, preferring the absence of their own kind to their presence and considering them potential rivals: such a cat would be in a similar position to possums - if it wanted a friend, it would have to be a friend of a different species. It would be perfectly possible for such a cat and a possum to find in each other the desired non-cat/non-possum friend: I'm glad those two found each other. In other cases, however, the similarities between cats and possums can preclude such a relationship: just as my dog, Trixie, seemed to like possums because she adored cats, and

considered them some sort of cat variant, so cats and possums can regard each other as potential rivals of their own kind. It all depends on the individual cat and the individual possum. STOP PRESS 2011: When I first wrote this, I was repeating an anecdote told to me, with, I confess, certain inner reservations. However, in 2008 I had my own similar experience. For reasons too complicated to explain, in late 2007 I acquired a very fluffy male ginger kitten named Tenzin. He looked like a cross between a pure bred white Persian and one of the huge, amiable feral ginger tomcats that hang around the fringe of rural areas and national parks. He was, of course, castrated before he could be 'adopted', but he is an instance of something recorded in ancient historical records in regard to some human cases. The effect on his psychology was minimal. Almost the only effect castration had on him was that he was unable to produce sperm. Suffice it to say that as an adult he seems to regard my forearms in a manner similar to that in which certain excitable young male dogs regard their human's legs - wives. He grew up to be very much a tomcat, a very large one. He is of course confined to the house, but as a baby in 2007 he was allowed to hang around when the local Newport possums came for their evening handout, usually perching on the top of the open study (my former bedroom) window. He seemed fascinated by them, absolutely riveted by them. He had seen very few other cats since his long-term memory developed, and while he wasn't sure whether he was a possum or they were cats, he strongly suspected they were both the same kind. Perhaps the fact that their coats were the nearest thing he'd ever encountered to his own Persian-like silk helped. The possums tolerated him, apparently regarding him as a harmless baby possum attached to me - perhaps from their viewpoint the ginger colouring, and size, helped. As is the way with cats he very occasionally made an escape to the outside, and one of the first places he headed towards was the part of the roof occupied by possums. By 2008 a particularly sociable young female possum named Squirt had taken to coming down the window and eating her food on the window ledge beside me, sometimes leaning against me. Tenzin was totally besotted by her. He crept closer and closer, then reached out and patted her with his paw to see what she felt like. Being an exceptionally gentle and good natured possum Squirt tolerated this, even when he approached from behind, which normally triggers an aggression or flight reflex. Then he started reaching out and pulling her tail. She clearly didn't like this, but still tolerated it, though starting to carefully position her tail where he couldn't get it, and sometimes her rump against me, as if for protection. I started to take a hand and tried to push him away from her whenever his pestering became too persistent. But as time went on, and he got bigger, his approaches became more and more frequently from the rear, and seemed to take on an amorous note. That was too much even for Squirt. She retreated up the window and started to prefer to eat there. And Tenzin found himself excluded from the room whenever the possums were around.

xxv. There is, of course, the possibility that she inherited it from her father. Her paternity is not certain: Erik must have been somewhere not too far away at the appropriate time; if he was the father, then the marking was almost certainly due to a throw-back to Jenny. However, what Erik's state of health would have been around the time she was conceived is problematic, and the possibility of a wanderer from afar cannot be ruled out.

xxvi. See Note iii.

xxvii. There are some glimmerings of an explanation for this. There seems no doubt that the red patching in males is an hormonal thing, triggered by puberty but starting to show up only a couple of months later.

At Newport, at one stage, we had a splendid range lined up for comparison: Clumsy, Dido's son, at around seven months old, with adult genitalia but without any visible red; Timmy, 'Miri' 's son, just under a year old, with the red patches just starting to appear on his shoulders; then 'Horrible', a mature, though not old possum, with very red shoulders and fur shot through with red down to the waist; Shy Boy, who in other respects looked a little younger than 'Horrible', was redder - he seemed to be a relation of the Foxy-Poss creek group, i.e. russet-toned to start off with; finally, there was Old Pink Pig, who, from the front, appeared to be red and cream entirely - all his fur above the waist was very reddish, and the rest shot through with reddish hairs, and between his shoulder blades there was one deep, blood-red patch, old Erik's colouring. He arrived at Newport around 1973 or 1974, already a reddish mature male, and so would have been at least five or six at the time of the comparison, and Horrible (i.e. the undoubted original Horrible), then as later not much smaller, but clearly a lot younger, showed up at around the same time.

The scale, obviously, is no precise guide to age, but if it holds as a general guide, then to be blood red all over Erik must have been over eight when he first showed up at Ingleside - I suspect more - and something like ten or more when he died, a very considerable age for any free ranging possum, and a prodigious age for a male, since their lives as travellers mean they almost invariably succumb to misadventure well before it. The lack of red in his regrowth hair may have been due to the temporary absence or abeyance of the hormones responsible.

Or perhaps had nothing at all to do with it. At Newport, at one point, around 1978, Old Pig, after a night's absence, turned up scalped - or at least shaven. The whole of his forehead was bare, as if it had been shaved for an injection, though I could see no mark, and under his chin there was a conical scab, the sort that seems to develop as a kind of negative of a laniate wound. Who knows? If he really had had his head in a dog's mouth it's a wonder he didn't die of fright. Be that as it may, when the fur on his forehead began to grow back, it was noticeably greyer than the rest of his coat.

In any case, it happened.

xxviii. In some cases, literally off-colour, since a possum's normally pink nose reacts to illness in much the same way as a human's face, paling to a yellowish cream when something goes wrong. This is just as reliable, and just as unreliable, as the similar changes in human complexion - a possum can 'go pale' without there being very much amiss with it, or by the same token, when other factors are operating to bring the blood to the head, be very sick indeed without any such sign. For example, the noses of females in season are usually a bright cherry red; there is no way of telling, by that alone, the difference between a pale mating-season nose and the more delicate pink of a possum in good health.

xxix. I had dramatic corroboration of my assessment of his attitude to possums later, at Newport. The window of my room was left open for the cats to go in and out, and, naturally, the possums, once they discovered this, decided to avail themselves of the same convenience. In particular, two of 'Pumpkin's' baby boys, Elephant and Piglet, made a habit of spending a lot of time in my room, especially when, as happens with possums no less than humans, they were temporarily out of sorts with their mother. Needless to say, they became special favourites, and Smiley, sensing potential rivals, regarded them with especial distaste.

Yet one night when I was out, one of them, I forget which, appeared on my window sill, and Smiley called my mother loudly. Thinking he wanted the possum removed, my mother moved to oblige, whereupon he backed up and threatened - and she prudently said, 'All right, keep your possum.'

No doubt he did want the possum removed, but in the accepted manner, by giving it the food it came for. He had apparently, like at least one other tomcat I've known, developed the same sort of vicarious territoriality as dogs do, defending his owner's property as his own. He did not like possums, but he seemed to have decided that they belonged to me, and it was therefore up to him to protect them in my absence. About the only effective counter I know to domestic predators is a territorial animal of the same species, who regards the wildlife as property, to be protected, not prey, to be pursued, and one way or another keeps his fellows off the premises or thoroughly occupied when on them.

xxx. Above, p. 136. In the course of my travels I in fact encountered two possums which were virtually identical, physically, to Snoopy. On the farthest corner of our road block, considerably further, in possum terms, than the adjacent parts of the neighbouring blocks nearer the house, there was a small house group of Jenny-possums. Not inexplicable: some relation of hers was probably once deported to Ingleside, perhaps to the Chase, and did what suburbanite possums naturally do, returned to a suitable house. It took three days, and caused an enormous amount of nuisance to the poor long-suffering householders to establish that Snoopy was not among that group, or somewhere nearby, or, if she was, she was deliberately avoiding me. Once at Bay View I was waiting for the appearance of a possum I'd heard about which had been behaving rather like Snoopy. The possum duly appeared. She looked very like Snoopy, size, build, everything. I called her and she trotted confidently across the lawn to my feet, precisely as Snoopy used to do. She obviously recognised me. The closer she came the more like Snoopy she looked. Even the walk was the same. Yet she had all the digits on both hind feet intact, and it turned out that she was a friend of the people in the house next door. A case of mistaken identity on both sides.

xxxi. I must stress that I have deliberately made it impossible to identify any of the houses involved within a group of six or more, both by using a scale which prevents such precise location and by slightly altering the street patterns, to protect both the people and the possums; the only actual houses which might be relocatable from this map are the two houses where Snoopy lived, at Ingleside and Newport. I must also stress that it reflects the situation in 1975. Since that time a great deal of 'development' has taken place, and it is very likely that there are no longer possums in some of the locations, whether because the bush has been cleared or because clearance nearby has cut the migration routes for males, isolating the resident females. It is included to give a broad idea of distribution in these sorts of areas, in case any one should be interested.

The distribution pattern was as I have stated, small, isolated, infrequent groups in areas where houses are rarer, with larger, overlapping groups, numbering from six to twenty, in places where there is denser human habitation, but also trees, dropping sharply to none where there are houses but no vegetation. In answer to various replies to advertising, I made excursions outside the area, ultimately to places as far afield as Clareville and Avalon to the north, and to the south to one particular part of Manly Vale, to which there seemed to be a route via Narrabeen Lagoon and the back of Dee Why, where there was a stray possum who did indeed appear to have part of one digit missing - it turned out to be an optical illusion caused by very light colouring on part of the foot. And I saw nothing to conflict with this general distribution pattern.

It may be that this pattern, the increase in size and frequency of groups where there is a commensurate increase in the number of houses, is caused by two factors. Firstly, food: the sort of food available around houses seems to be more concentrated in nutritional value than that available in the bush, and consequently the area can support more possums.

Secondly, the restriction of female, as opposed to male, juvenile migration, caused by continuous clearing and 'development' of surrounding land. While there are inbuilt behavioural mechanisms to spread possums as widely as possible, such as the mother-daughter antipathy, a possum, being a pragmatist, will always choose the easier course rather than the harder one. When a female reaches the stage where similarity of habitual routes and a common taste in food, not to mention an attachment to the same nests, brings about an inevitable conflict with her mother, she has a choice of moving away or staying and fighting it out, probably being forced to accept a subordinate social position vis-à-vis her mother's; in areas such as Ingleside, it is easier for, say, Snug to move a little upstream and start a sub-group of her own, rather than tolerate the hostile attentions of Bindi, since there is no lack of facilities or food, and no special danger involved in getting there. In places like Newport, however, there is a limit on the accommodation available - a youngster's scouting expeditions are likely to tell her that upstream, or whatever the equivalent happens to be, the only nests in existence are the well-appointed ones in sheds or roofs, which are already occupied by adult females, even more antagonistic to her than her mother is. And the routes themselves are more difficult and dangerous, and deter her from any longer journeys than absolutely necessary. It is easier for her to tuck herself in somewhere close at hand, and submit to occasional beatings from known females, until she is old enough, and big enough, to start replying in kind.

So much for where the possums are, and the manner of their collocation. But the map means nothing at all in terms of where the possums aren't, save for their absence from totally built-up areas.

There are no implications whatsoever for the absence of possums outside the area indicated. In fact I know that possums do exist in some of the places excluded, from my own spot sorties in answer to calls, and from hearsay, which confirms my own expectations - the area from Bayview to Church Point, for example, looked very much like house-possum country, and I heard of house groups, which sounded remarkably like the ones I know, in that locality.

But even within the area indicated, there are no guarantees about the absence of possums. At the beginning, in an area where sparser human habitation leaves acre upon acre of bush intact, I took no account of that bush, save only for the part of the block adjacent to the house, the margin of Mona Vale Road, and the downstream part of Ku-ring-gai Chase. House possums gravitate to houses if they are displaced, something confirmed by the professional pest exterminators I met, who encountered the same individuals time and again. I was, as a matter of urgency, looking for Snoopy, the consummate house possum. I could not cover the whole area, and there was no point in looking there unless I had special reason to believe she might be there. Nor did I enquire about possums as such, only about Snoopy, or a

possum acting in a conspicuous manner which might be her, unless and until the distribution of groups became relevant. And later, in the higher density areas of Bayview, Mona Vale and Newport, I by-passed obvious possum places in an effort to make up three months, working on what I knew at the time to be the wild assumption that it really was Snoopy I was tracking. It was one of those heart-breaking situations where the time factor forces you to assume a sciolist attitude and act on it, even while you are agonisingly aware of the fallacies of the theory.

xxxii. If I might be permitted a bit of amateur speculation, I would suggest that the cause of this and other apparent discrepancies - gestation period, possible oestrus cycle, age of independence of babies and so forth - about which the books disagree, lies in the degree of variation possible between individuals, the nature and origin of possum groups, and the scope of observations upon which the dicta are based.

Possum groups are essentially family groups, formed by the progressive dispersal of juvenile females. Usually it is only the males who come from afar. In most cases nearly all the possums within a given group are blood relations, and, given the predisposition of males to wander over the areas covered by adjacent groups, there is usually a genetic relationship with the neighbouring groups as well.

There is always a tendency for a group or groups to become isolated, physically, from other possums. In the bush this may occur when fire devastates a large area, or perhaps when a severe flood has a similar effect, leaving open, foodless areas too large to be crossed by males until regrowth occurs. In the suburbs, it occurs when surrounding land is cleared and 'developed', or when there is a marked increase in the volume of traffic on roads which the possum route needs to cross. Regardless of where Snoopy did or did not go, I am convinced that the trail I followed across Bayview to Newport marked old migration routes: in days of yore the males would have percolated backwards and forwards from Ingleside to Newport, but now the traffic is one way, and human assisted, a matter of possums taken from more built-up areas and dumped in the bushier areas.

Under these circumstances there is a tendency for groups to become genetically isolated, and inbred, so that any individual, but heritable aberrations are perpetuated, and gradually become the norm for that group. Twinning seems an obvious case in point - in humans at least, twins tend to 'run in the family'. But the range of variation possible in such matters - when I first had reason to take notice of the Newport possums, the difference in these respects between the Jenny and Foxy groups was so great, and so marked, that they could well have been different, but closely related species, save only that they ultimately interbred - suggests to me that most, if not all, the apparent discrepancies are open to the same explanation.

In other words, everyone is probably right, but only insofar as the possums on which the observations are based are concerned.

That's possums. You have to take them as you find them, without any inviolable preconceptions, if you don't want to have the fundamentals of your intellectual being shattered at regular intervals.

xxxiii. One of the older books I read stated that female possums were fertile throughout the whole year, while others stated that they were fertile for only limited periods, in spring and autumn. I am reliably informed that the latter, if not wholly accurate, is closer to the truth, and it certainly accords better with my own experience. However, there is a rider: the events from late winter 1978 to autumn 1979 at Newport seems to explain both why 'out-of-season' babies are indeed born, and why someone could think that females are fertile throughout the whole year.

In 1978 there were approximately fourteen adult females residing on, or partially on the Newport property ('Pumpkin', Chrissie, Di(do), the precocious Toecutter, Tari, Juni, Battered Baby, Sherry, Spica, Spitfire, 'Moto', Soda, 'Miri', and an unidentified one who looked like Sherry) with four regular males, Old Pig, Travesty and the two younger males born here, Timmy and Brandy, two older previously established males, Shy Boy and 'Horrible' becoming less frequent in their attendance, and the unmistakable white-tipped Elephant, 'Pumpkin's son, apparently based nearby, visiting very occasionally. Of the females, 'Moto' was apparently infertile. Of the remainder, four seemed to have lost their babies, one way or another, in 1978, while they were still in the pouch, or shortly thereafter. Toecutter lost hers in the stage where it was out of the pouch in the nest and just starting to make public appearances somewhere around late August; by late November the replacement was in her pouch. Soda similarly appeared to be pouch gravid in late winter 1978, but also lost the baby and was again heavily pouch gravid by November,

appearing with a little girl, Sparklet, on her back on Jan. 11, 1979. Spitfire may have done something similar, since she too was heavily pouch gravid in November, and produced a son, Felix, on Jan. 4, 1979. The revelation, however, came from Juni, Jenny Junior. She apparently mislaid her baby, fathered probably by Timmy (mating seen) in early August, in the wall of the house, when it would have been in and out of the pouch in the nest; it was about a month after this that the ill-fated Dido appeared with two male babies, different in appearance, Jemmy (for Gemellus) and Puggy, see above, Note ii; of the two, Jemmy, who looked very much like Juni's older son Brandy, may have been Juni's, though there is another possible scenario, the other, Puggy, being Toecutter's lost baby. On Aug. 23 Juni proceeded to mate with Pig and immediately thereafter Timmy - and perhaps 'Shy Boy' had a turn. Things were happening fast and furiously, with one jumping on the rather dazed looking Juni as soon as the previous one had finished. Juni really was Jenny, Junior. The result was that by Dec. 1 she again had a baby in her pouch, and by early summer there was enough uproar from the vicinity of her nest to demonstrate that her new son, Rumpus, was with us. (STOP PRESS: events from around 2007-2011 suggest that sudden cessation of lactation might sometimes, but not always, trigger oestrus, but that's just a wild amateur guess.)

The upshot of all this was that 'spring' 1978 babies appeared continuously throughout spring 1978 and summer 1979, from Sept. 1, 1978 ('Pumpkin's boy Macro) until the public arrival of Juni's Rumpus, Feb. 18/19. The authentic autumn baby, Chrissie's little boy Shamus, was already making his presence known in the nest by March 22, though he didn't appear publically until April 17; theoretically, the 'spring' baby Rumpus was six months older than Shamus, but in reality he was only two months older, as close as many babies born within the same normal spring or autumn season.

It seems that if a female loses a baby at any time during pouch gravidity or soon thereafter (possibly while she is still lactating), she can come into oestrus and mate again shortly afterwards, in Juni's case at least, approximately two weeks after the loss of the baby. Since babies can be lost at various stages during pouch gravidity, this means that 'out-of-season' babies can be born at any time during the year, giving the impression that females remain fertile throughout the year, whereas in fact, under these circumstances, they can become fertile at any time during the year, but do not remain in a state of constant fertility.

But to every rule there is an exception, and apparently nobody told Jenny about this system. She could, and did, at one time, have three babies in thirteen months, discounting the adopted twin.

xxxiv. This baby colourations is something of a mystery, to me at least. Not all babies seem to develop it, though in some cases it may come and go while the baby is still in the pouch outside the nest, before it makes its first public appearance. It could well be vestigial.

But I fail to see its purpose. The lighter colouration makes the baby more conspicuous. It can hardly be intended to make it more conspicuous to other species at the very stage when the baby is most vulnerable to predators such as owls, so it must be intended for their own kind, a placard informing them in block capitals that this possum is too young to know better, and its ill manners should be tolerated.

But how the devil are they supposed to distinguish this colouration? Possums are nocturnal animals. I gather that some other higher species such as dogs and cats have been deemed unable to distinguish colour in any case (though this appears to be changing), and for this mechanism to operate they would have to be able to distinguish the baby colouration from, say, the cream of a small adult possum of the lightest known colour variant. For me, there are only something like three or four nights a year, nights when the full moon coincides with a light cloud cover elsewhere in the sky reflecting its light, on which I can distinguish even the primary colours without artificial lighting. Otherwise it is simply a matter of light colour as opposed to dark colour. And even on the brightest moonlight nights, there is no distinction, for me, between the special baby colouration and the colour of a possum who is one of the lighter greys and favours creamy patches in its facial markings. Granted that possums' night sight is palpably superior to that of humans, it is still not all that much better. This was one of my surprises when I first started sitting beside Mrs. Poss, watching the nocturnal world go by; it is the sense of smell which is most significantly superior to that of humans. Their eyes, bulging out of their heads, with pupils expanded, look enormous, but that's in comparison to the size of the possum, and when you come to think about it, the light collecting surface of an expanded human pupil is not all that much smaller. Quite possibly, on those rare light nights, they may be able to see the distinction - but there are still too many moonless or cloudy nights on which such differentiation would be impossible to make it



worthwhile. In other words, what is the use of baby colouration to a nocturnal animal? One would have thought the other visual signs of babyhood, size and the fluffy 'puppy fur', which works the other way, blurring the outline to confuse a predator, would have been far more effective.

As I said, it may be vestigial - there seem to be other vestigial things, no longer appropriate to the conditions under which possums now live, or to their present behaviour patterns, hints that bushy-tails were once something quite different from what they are now. Some bushy-tails are very good at light-adapting their eyes, and some, not necessarily hand-reared ones, are quite amenable to carrying out some of their normal night-time activities during the day, if conditions make it safe and they deem it beneficial. Perhaps they were once diurnal, or at least, like modern cats, adaptable. I simply don't know.

xxxv. In the same way, all Foxy's babies came to 'Foxy' as well as their own names, and those who were raised in the tree near the creek on our property also came to different appellations. The hole in the tree is so placed that in order to pass food up to it with the feeding stick, it is necessary to stand directly underneath, out of sight of the hole itself. As a result, I seldom see what I am feeding. Often I am vouchsafed no more than a glimpse of a prehensile paw, or disembodied ear. Now in that sort of situation, where you are serving breakfast in bed to a possum that could well be still asleep, it is necessary to have some sort of unalarming auditorial signal to give the possum warning, before putting the stick up into the nest - otherwise you're likely to scare the possum half to death. You need something like the knock we used for Honey's box - a soft, staccato rap imitating the sound of a relaxed, contented possum grooming. Since I was often unsure, in fact, who I was feeding in the tree - from my angle of vision the tree itself seemed to take the bread - in a moment of facetious desperation I started calling, 'Hey, Tree!' So naturally, all the babies raised in that nest came to, 'Hey, Tree!' On one occasion I met Spitfire, the then incumbent, a little distance from the tree, at an unusual time of the evening. Like all her predecessors, she used the tree as a part-time nest, living there for a couple of weeks, then absenting herself for about the same time. She was returning from one of these absences, and took fright when she saw me, unable to recognise me out of context, as it were. 'Spitfire' and her mother's name, 'Sherry', failed to reassure her - nothing worked until, as a last resort, I said, 'Hey, Tree!'

xxxvi. It is very difficult to get an accurate idea of the age of adult possums - without dissection. The following observations on size refer to females, since it is difficult to know about the males since the bulk leave home, if only temporarily, as juveniles, and do not return until they have changed so much as to make it difficult to be sure it is the same possum. Jenny's family seem to go through four distinct stages. The baby grows until it is about a year old, the size of a young adult, then there is a kind of pause, with only very slight, very general growth between 1 and somewhere around 3, when they suddenly fill out to full-sized adults. Then they remain the same for years, until one day you suddenly realise that so-and-so is an old possum, usually after something has happened that just tipped it over the edge, illness or injury, or in a female a spate of difficult babies, one after the other. Possums from other families omit the pause between one and three years, continuing to grow evenly, reaching their full size at an earlier age. The retardation in Jenny's family may be due to their lamentable propensity for having their first babies on their backs before they themselves are a year old, then continuing to produce them at a rate of at least two a year for the first few years, i.e. what should be going into the growth of the mother is diverted to the production of babies.

The red colouration in males is no more than a general guide: a male with no red is usually less than a year old, and one with unobtrusive patches just starting to form in the underfur of his shoulders is usually between 7 months and 2 years; a possum with very reddish colouring above the waist, and the rest of the under-coat shot through with gingery colouring is probably getting on. But within that framework, a great deal of variation is possible. For example, of the two subordinate adult males at Newport in 1978, 'Horrible' and Shy Boy, Shy Boy had more reddish colouring, but I am fairly certain, on other grounds, that 'Horrible' was older. Shy Boy's features suggested that he was connected with a collateral branch of Foxy's family, that is to say, with a reddish tinge to his colouring to start off with.

So all you can really say of an adult possum is that it is young, mature or old. But this is a relative judgment, and how it correlates with exact chronology, with years, is a different matter. What's

happened to the possum within that time affects its growth rate, its appearance and its mental attitude - which in turn governs such things as movements and body signals such as muscle tone. Around Christmas 1974-5 Snoopy looked, acted, and to all intents and purposes, in everything but actual years, was just very slightly younger than her granddaughter Bindi. Both were mature possums, but there was just a slight, perceptible difference. In Snoopy's case this was obviously caused by a combination of factors. Her original debilitation, whatever it was, stunted her initial growth, but after that she led a very easy life from the point of view of food and shelter. And, unlike her kindred at Newport, she produced, and coped with, only one live baby. While she suffered one major injury, and a good many minor ones, later, she was remarkably free from disease and other minor ailments to which the others are subject. While at times she was physically weak, from that point of view, she was always in superb condition.

The same thing happened, to a less dramatic extent, with Battered Baby at Newport. Baby suffered severe injuries when she was a few days out of the pouch, and this seemed to inhibit her initial growth. But the nature of those injuries advertised her plight to the world, specifically the human world. The loss of the ear was not a particularly serious matter. It may or may not have impaired her ability to pick up distant sounds from that side, but in any case it happened early enough in her life for her to learn to compensate for it automatically, and she grew a ruff of fur around the ear-hole itself, giving some protection from dirt and parasites. The loss of the tail was more important - a fair proportion of the leaves of the sort that possums prefer occur at the end of branches too thin for them to walk on, so the only way to reach them is dangling from above, by the hind feet and tail, sometimes, for extra length, by the tail alone. Baby's ability to feed on such leaves was obviously inhibited, particularly when she herself was carrying a heavy baby, so that the added weight made the strain too great for back legs alone in situations which demanded the maintenance of a body plane at angles to the branch to which she was anchored.

Naturally, since this was patently obvious, everyone who either liked possums or was not actively opposed to them took a special interest in Baby. We went out of our way to make sure she got her share of the dinner - and her distinctive appearance meant that she was in no danger of losing her dinner, as some the others may do, because with low light and quick movements it is possible to feed the same possum twice, while a similar one misses out because of the misapprehension that it has already been fed. As I said, she managed to persuade some of the neighbours that it was necessary that she should live in a woodshed near the fenceline of the property. She didn't always stay there - and it is far from impossible that she had persuaded someone else further afield to provide alternative, equally luxurious accommodation. Add to which the fact that she did not produce a live baby until she was 2 years old, and, like her ancestors on the Foxy side of the family seemed to settle for having one a year, rather than two a year (although she took after the Jenny-possums physically, and so was of a size more appropriate to coping with Jenny-cross babies). The upshot was that she was the sleekest, plumpest, healthiest possum in the bunch. With horrible regularity, towards the end of every summer, all the Foxy possums came down with that blight, whatever it is, that causes fur loss on the rump and tail and weakness in the back legs. It seems to be to do with a vitamin A deficiency, presumably connected with the seasonal vegetation situation in their demesne, and perhaps also with a congenital tendency to pancreatic problems in the family - one at least was diagnosed with pancreatic failure, see below, p. 343 - and an hereditary susceptibility to digestive problems, as their habit of chewing each mouthful interminably suggests. But even the big greys who live in the house, Jenny's people, all suffered from what appears to be the same thing, to a lesser degree, at one time or another, save only the very youngest. Not so Baby. She never, to my knowledge, showed any sign of that trouble, and for that matter rarely if at all suffered from the other, more minor complaints such as 'conjunctivitis' to which the rest are subject. I saw Baby looking even more battered, particularly after an unusually frenetic mating season, but I never saw her sick, thin, unkempt or worn out, as I did, at one time or another, all the others.

The net result was that, although obviously a mature possum, she looked a lot younger than the females who had had to rough it, not only her real contemporaries, but even, say Spitfire, if you discounted the fact that Baby was larger, on the grounds that Spitfire took after the Foxy line.

xxxvii.. Taking account of all the ifs and ans in the previous note, my impression, for what it is worth, is that 'Pumpkin' was just a little too old to be the original Pumpkin, a little too close to Jenny when she first arrived. If she were Jenny's daughter, she ought to have been Jenny's eldest daughter - but

when she showed up Jenny's eldest daughter, Snoopy, was safely ensconced at Ingleside. Big Brat would certainly be a possibility - she was only six months younger than Snoopy, which is nothing at all once a possum is mature. Like so many possums, she did a character reversal as she grew up, so that her soubriquet was sheer slander. From that point of view she would fit, as well as from the point of view of having a known affinity for the positions under the eaves. Her only physical distinction was that the iris of her eyes was a markedly lighter brown than that of the others, something which would have been obscured by the cataracts, and the mistiness which preceded their development.

There is another candidate for the dubious honour, if one lays aside her propensity to answer to 'Jenny', which seems to indicate a daughter, taking it as of a piece with the fact that she answered to anything - actually she may have answered to the calling note of the voice, regardless of which particular phoneme served as its medium at the time. We had always woven a highly imaginative fantasy about Jenny.

Before we were aware of the possums as individuals, we knew that there was a mother possum living in the roof somewhere, who appeared on odd occasions, complete with a baby on her back. At one time the baby grew and grew and still refused to get off its mother's back, although it was obviously perfectly healthy.

The poor mother came battling past the window, night after night, struggling to carry something going on for half her own size. Eventually my father caught the baby, marched it off through what was then bush, and deposited it somewhere a couple of hundred yards away over the creek - that, in our ignorance, seemed quite far enough. Naturally the baby, who must have been, even allowing for gigantism, at least three months old and perfectly capable of looking after itself within its mother's general ambit, came straight back, and was once again on its mother's back the next night. After which we gave up. But we always wondered whether that overly-maternal, long-suffering mother might have been Mrs. Poss, and the obstinate baby Jenny - although my more recent experience suggests that that trick is more often played by a male baby. Nevertheless, the speculation that stolid, bear-like, droll, affectionate, motherly old Mrs. Poss might be the mother of our wild, wayward, brilliant, beautiful Jenny was well-nigh irresistible.

There is no real evidence, but the general connection between the two families does not seem to be in doubt. Without realising the implications of what I was writing, I earlier said that Snoopy, when she matured, began to remind me very much, in looks and character, of old Mrs. Poss. In this scenario, Mrs. Poss would have been her grandmother. Then, too, at a time when 'Pumpkin' was frequenting my room, together with her enormous daughter Chrissie, and the putative father, Old Pink Pig, I found myself automatically slipping into addressing them as Mumma Bear, Poppa Bear and Baby Bear. The same general ursine quality, those stubby teddy-bear looks, was always a particular attribute of Mrs. Poss.

The group of banksias where I used to meet Mrs. Poss and her group - all of which by then had come down in a storm - was a reasonable distance by the circuitous human route from the house, but actually on top of a bank on the other side of the drive, directly opposite the eaves under which 'Pumpkin' so determinedly planted herself, a few yards away through the trees, by the direct possum route. All Mrs. Poss' tribe would have been familiar with that side of our house at least, and 'Pumpkin', when she first arrived, did indeed go up that way, through the trees, towards the house where Mrs. Poss had found her new friends. Now Mrs. Poss had a daughter who was used, from the time she was in the pouch, to perching on human shoulders, and considered all that sort of thing quite natural, a daughter who, if the scenario has any basis in fact, would have been Jenny's younger sister, and a contemporary of Snoopy's - Pom.

But the people who knew Mrs. Poss after I left had lost track of both her and Pom, as individuals, some time before the question arose. And 'Pumpkin' answered to 'Pom' no more, and no less, readily than she answered to 'Pumpkin' or 'Brat' - or indeed 'Mumma Bear'. She could have been anyone - a possum belonging to a collateral line of Mrs. Poss' family that we had never met before, although I think the chances are that she was one of those three, Pumpkin, Brat or Pom. In any case, as far as she was concerned, she belonged here, in this place, and with us - and she 'always' had done. I suppose that's all that matters.

xxxviii. The Jenny-'Pumpkin' mix-up had one unfortunate result - it obscured the significance of an incident which might otherwise have decided the question of whether mothers ever actively train or teach their babies, as opposed to the babies' learning coincidentally by observing and copying their mothers. My mother saw, one night, as she thought, Jenny, training Elephant. Elephant was planted up a tree, in full view, and Jenny was racing round and round frantically, showing all the signs of a mother possum looking for a lost baby. My mother fell for it, trying to help her, drawing 'Jenny''s attention to

Elephant, repeatedly indicating the direction, say, 'Look, Jenny - here he is,' something that would almost certainly have worked with a mother genuinely unable to locate her baby, given that the level of communications between us and the whole local group was roughly equivalent to that between humans and dogs or cats. All she got was a disgusted look, 'I know that, you fool!', and 'Jenny' would continue to 'search'. while Elephant continued to freeze, not moving a muscle.

The incident seemed quite clear. The baby was being trained to freeze in a crisis, not moving, no matter what, even if his mother was racing around distraught with anxiety, until the mother actually found him. It connected up very nicely with some of my experiences - Joey's baby games of 'hide-and-peek'. Those were initiated by the baby, and I was an unwilling participant - I really couldn't find him. But even if the game was initiated by the baby in this case too, there is little doubt that the mother's participation was in some sense voluntary - if Elephant was obvious to my mother, he would have been quadruply obvious to her, even without my mother's indication of his whereabouts.

But if the female involved was the real Jenny, then the whole thing was probably illusory - Elephant wasn't her baby, and, whatever she was looking for, it probably wasn't him.

For what it is worth, even when we finally sorted out who was who, and who Elephant actually belonged to, it did not dispel my impression that I'd seen him with the real Jenny. With her record for adopting babies, that's by no means as silly as it sounds - if he'd been left alone and she'd stumbled across him, she could easily have taken him in charge temporarily, and Elephant was unlikely to have made any objection. He was always a friendly, gentle, amenable little chap, and if the whole world had volunteered to be mummy that would have suited him down to the ground. So even if the female in question was Jenny, the episode might still have been what it appeared to be. But one simply cannot be sure.

xxxix. See above, Note xxxvi.

xl. One possible explanation would be that the tail, which appeared to be that of a juvenile rather than a baby, was automatically seriously bitten by one of the adults (Twiddy?) who failed to notice the real age of its owner.

xli. In 1988 there was a very good example of what can happen with this. A young creek gentleman called Flame, born with a magnificent white tip on his tail, initially developed the said tail very early, like Juni, and grew enormous ears, like Snoopy. At this point he and his mother suffered a mild attack of the 'blight', with the result that what was between the ears and the tail missed out on growing. At about 3-4 months old he was a scaled-up version of the 'little donkey' stage which usually belongs in the last few weeks when the baby is out of the pouch in the nest but in the pouch outside.

xlii. Above, Note ix.

xliii. Cf. above, Note xiii.

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