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Observations on Owls in the Upper Manning River District, N.S.W.

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Observations extending over many years on the habitat, calls, behaviour and breeding habits of the five species of owls occurring in the Upper Manning River district of New South Wales, mostly within a radius of 20 kilometres east and south of 'Mernot' (31°45' S., 151°37' E.) (Map Figure 1), are recorded with particular reference to two little known species, the Sooty Owl *Tyto tenebricosa* and Masked Owl *T. novaehollandiae.*

During some thirty years residence in this area, up to 1958, I had recorded no observations of any interest on owls. Boobook Owls *Ninox novaeseelandiae* and Barn Owls *T. alba* were occasionally heard calling or seen along the roadsides in the car headlights at night. The Powerful Owl *N. strenua* had been seen three times only, the Masked Owl once and the Sooty Owl four times, all as single individuals roosting in vine-covered trees in dense brush (rain forest) lining mountain gullies.

Powerful Owl

On 3 May 1958 a pair of Powerful Owls was discovered roosting high up in an Antarctic Beech *Nothofagus moorei* in a patch of beech forest in Kangaroo Creek, which flows into the Upper Manning River, and it was resolved to try to keep the birds under observation in an effort to find the nest tree. After dusk on the day of discovery both birds called several times in the vicinity of the roost then apparently went off to hunt. About an hour later one bird returned and called insistently with the usual deep, double call until answered in the distance by its mate. It immediately set off in the direction of the call with a sustained wailing cry, which is apparently unusual as I have heard it only that one occasion. Another call heard only once was a loud, emphatic single note like 'boo!' uttered by a solitary bird in another locality at dawn.

Two weeks later, on 18 May 1958, the birds were again roosting in the same tree in the beech scrub. The male was clutching the hind parts of a Greater Possum Glider *Schoinobates volans,* which he carried out and handed over to the female on a limb of a eucalypt when the pair left the scrub at dusk. The following week they had disappeared and were not even heard during the night. On 1 June they were found about two kilometres from their original camp, roosting together in the top of a tall beech in a patch of scrub at the head of a small side gully. They would have been overlooked had the male not growled menacingly and uttered a couple of subdued "woo-hoo's" as I walked below the tree.

On 10 June the male, holding part of a Greater Possum Glider, was roosting alone at the new site. A search of the forest country outside the beech scrub revealed splashes of excreta and several glider tails under a tree close to some big eucalypts containing likely looking hollows. For some half hour before dusk peculiar wheezing sounds were heard at intervals and seemed to be coming from the broken-off hollow top of one of the big trees. Just before dusk the deep voice of the male owl sounded down in the beech forest, a voice majestic and "big" rather than loud, that seemed to fill the gully and come rolling up towards a listener on the ridge above. Following this call there was a marked change in the wheezing, which became loud and insistent then changed to a strange bubbling sound. It ended with the female owl appearing at the entrance to the hollow and giving a full-throated "woo-hoo" before flying down the gully to be fed by her mate, who later occompanied her back to the nest tree before flying off. She had been absent from the nest for an hour and ten minutes. When the owl had been incubating for about three weeks the nest was examined and both eggs were found to be infertile.

The following autumn, May 1959, the owls were located about two kilometres east of their previous nesting area and again the nest tree was located. The tree was an old, very large eucalypt, and although several suitable looking hollows could be seen between 20 and 30 metres above the ground, it was not known at the time which one was in use. On another visit to the site a few evenings later I was fortunate to see the male owl bring his mate her evening feed. It was an unforgettable sight to see the great owl sweep into a tree top clutching part of a Greater Possum Glider with its streamer-like tail trailing out behind.

The night the nest tree was found the female was seen to make several swooping dives over a nearby 15-metre dead stump, which puzzled me until on moving around to get the stump silhouetted against the sky I could see a possum standing on top of it with back arched and tail waving like an angry cat. It seemed that the owl was not interested in the possum as food, but merely as an intruder near her nest.

At about the time it was thought the eggs would be hatched, the tree was climbed. The first hollow at about 20 metres was occupied by a possum. The owl was in the next one, some three metres further up and a little more than one metre deep. She was sitting on two eggs and refused to leave the hollow. With considerable difficulty the eggs were extracted for examination and again found to be infertile.

The following season the female had disappeared and each autumn up to 1966 the male could be heard calling in the area, but apparently never succeeded in attracting another mate.

The species favours the high country, generally above 1000 metres, and though it has been heard at various places from the Gloucester Tops northward to Nowendoc, only two pairs have been recorded, and the others have appeared to be solitary birds.

One was heard at intervals between 1960 and 1964, ranging all around the steep slopes and brush-filled gullies of Mt Myra about ten kilometres east of 'Mernot', a locality where I have spent countless evenings and many entire nights studying Sooty and Masked Owls. One evening this particular Powerful Owl began to call in the brush just below me half an hour before dusk with the usual deep, deliberate "woo-hoo" which it kept up continuously, although after about ten minutes its voice seemed to be breaking down and the notes got shorter and sharper until they were more like the quick "woop-woop" of the Barking Owl *N. connivens*. After half an hour the calls had degenerated into little more than squeaks, but at dusk the owl gave a couple of full-throated "woo-hoo's" and flew silently off, to be heard no more than that evening. The evening was also memorable for the fact that four species of owls, the Powerful, Southern Boobook, Masked and Sooty Owls were heard in the one gully, joined by Australian Owlet-nightjar *Aegotheles cristatus* and White-throated Nightjar *Caprimulgus mystacalis*.

After 1964 this owl was not heard in the area until 1967, and then only on one evening in February, although there was no way of knowing if it was the same individual. Then there was a four-year break to 1971, when in May a pair showed up and stayed in the area until June without showing any sign of breeding. After that they were heard only a few times, and from 1973 to April 1975 only a solitary bird has been heard.

It is my experience that the Powerful Owl feeds only on possum gliders, although doubtless there would be an occasional change of diet. Some years ago a neighbour told me he was driving at night to Nowendoc and flushed a "very big owl" from the middle of the road. When the bird flew, a Red-legged Pademelon *Thylogale thetis* picked itself up and dived into the roadside undergrowth, but it would have had to be lucky to survive after having the efficient-looking talons of the owl driven into it.

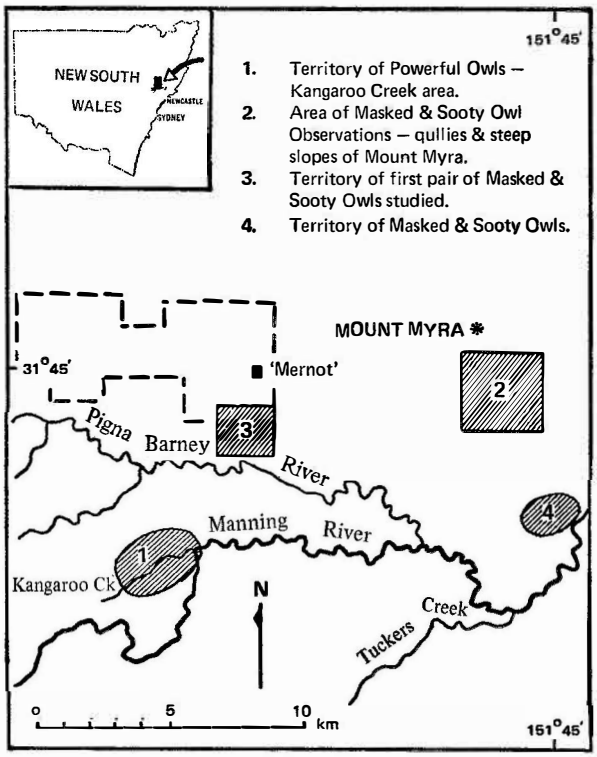
Sooty Owl

Sooty Owls had been recorded only four times in thirty years, each time roosting in dark parts of the brushes. No attempt was made to study them despite standard references giving little on the habits or calls of these owls. Observations of copulating birds demonstrated that the female is not always the larger bird as stated in many texts.

Judgement of size was visual only, based on sightings of pairs in flight at night or perched close enough together to enable a comparison to be made. It was rare to see the two individuals of a pair perched together in one tree and I have no record of a pair roosting together in the daytime. The female of the first pair studied was noticeably smaller than the male, while in other pairs no difference in size was apparent, and in at least two pairs the female was larger.

One day in September 1958 my attention was attracted by a mass of excreta, small bones and fur pellets at the foot of a large Moreton Bay Fig *Ficus macrophylla* growing in the bed of a gully and towering above the surrounding brush. The trunk of the tree was like a chimney, with a wide opening spiralling up from the ground for about ten metres, and near the top of this "chimney" was a quite artificial looking perch on which was an owl of some kind. A stick rattled in the hollow trunk flushed a Sooty Owl which flew to a limb of a larger fig tree 30 metres away and crouched there watching me. After a while it flew off down the gully.

As there were many small feathers adhering to the inside of the "chimney", and several larger feathers on the ground, the bird was apparently moulting or had just moulted. Certainly it looked to be in fresh plumage.



● Figure 1. *Locality map showing the four study areas mentioned in text.*

A selection of skulls was made from the pile at the foot of the tree and sent to The Australian Museum, Sydney, for identification. The subsequent report read, in part: "There were about eight skulls of the introduced Black Rat *Rattus rattus* and one skull of a Sugar Glider *Petaurus breviceps*. The large skull is that of a Ring-tailed Possum *Pseudocheirus peregrinus*". The only skull so far observed other than these was one of a White's Thrush *Zoothera dauma*. Both Sooty and Masked Owls make it easy to determine their diet from their habit of swallowing intact the heads of their victims and ejecting the skulls undamaged in the fur pellets. All species of owl so far observed start feeding on the heads of their prey and work their way through to the tails, which are usually discarded.

The evening of the day the Sooty Owl was discovered I returned to the brush near the fig trees. At dusk there sounded a loud, clear whistle from the direction the owl had taken earlier in the day, and as I had not heard anything like it before, it was concluded that it was the call of

the Sooty Owl. Shortly after there was an outbreak of squeaking and cricket-like trilling and chirruping which seemed to come from all around and overhead in the brush, and it was at first thought that there were two or three young birds with their parents. There were no young, however, the performance being the regular evening duet put on by this pair of birds for half an hour or so after dusk. The squeaking has a ventriloquial quality that makes it difficult to pinpoint the exact positions of the birds, and it took several visits to convince me that there really were only two, after which their routine became plain. The "whistle" mentioned above turned out to be a quite hair-raising scream when heard at close quarters. The owl that was generally to be found camped in the "chimney" by day would scream once or twice from its perch and then fly out into the brush at dusk, often screaming a few more times. Occasionally it would be answered by a scream in the distance, but the second bird would always turn up for the squeaking duet, though it was never discovered where this second owl used to roost.

This squeaking would sometimes rise to such an excited pitch that, though the birds were usually in separate trees, it was originally considered to be a courtship display. Apparently it was not, for it went on throughout September, October and November with the birds becoming progressively less noisy.

The first sign of approaching breeding was seen on 30 November 1958 when the larger bird, after leaving its roost at dusk, flew to a big hollow some 16 metres up in the trunk of the fig close to the "chimney" fig. It sat in the entrance to the hollow for 10 minutes and when the smaller bird arrived they both flew about in the top of the fig, which was estimated to be in excess of 40 metres in height. Suddenly the larger bird glided down towards the hollow; there was a thump and a startled squawk as the owl struck a Brush-tailed Possum, which went scuttling down a liane into the lower, vine-covered brush trees. This possum had been seen before, descending the liane, and was thought to camp in the hollow. It was later found that a large Birds Nest Fern *Asplenium nidus* higher up the tree was its home.

All this time the larger owl that roosted in the fig tree "chimney" was thought to be the female, but copulation was observed early in December and this bird proved to be the male. About this time a new call was heard from the birds, or at least from one of them. It was a most unpleasant grinding screech that went on for 10 seconds or more at a time. It is a call not heard often and may be peculiar to the female, as some years later a female was heard screeching at the entrance to a nest hollow.

Throughout December the owls would go to the hollow at dusk, but stay in for only a few seconds, then sit about occasionally squeaking softly to each other. One evening towards the end of December the female bird was so early that the diurnal birds were still moving about, and a Green Catbird *Ailuroedus crassirostris* was perched only 10 metres from her when she flew to the hollow. She had been roosting very close to the nest tree. From my usual vantage point on the steep hillside opposite the fig tree I heard the sound of a bird shaking out its feathers just behind me and looked around just in time to see the female owl swoop low over my head and then up to the hollow. She had apparently been roosting during the day on a loop of liane no more than a metre from the ground.

By the end of December the female was occupying the hollow day and night. The male would usually visit her at dusk, but stay in the hollow only a few seconds, during which time it seemed that copulation took place. He would then go off hunting and return with food at anytime up to two hours later. They were by this time almost silent, and if the male did scream it was somewhere in the distance.

The hollow was examined on 18 January 1959 and found to be only about 40 centimetres deep, with a floor diameter of 40 centimetres. Eggs had not been laid, although the female had been constantly in the hollow for three weeks. While I was on a limb opposite the hollow, a Yellow-footed Antechinus *Antechinus flavipes* scurried down the tree trunk from the large Bird's Nest Fern above. It obviously wanted to enter the hollow, but was not quite bold enough because of my presence and finally retreated to the safety of the fern. It would appear that it was in the habit of scavenging in the owl's nest.

The owl did not resent being disturbed, and on 31 January two eggs were found in the hollow. As this was apparently the first nest discovered

in New South Wales, and the first pair of eggs recorded, the set was collected and presented to The Australian Museum, Sydney.

The owl laid a repeat clutch of two eggs in a roomy hollow in the trunk of a large Stinging Tree *Dendrocnide excelsa* about 200 metres down the gully from the fig trees. This nest was examined for the last time when the two chicks, clothed in sooty grey down, were about six weeks old. Young birds, once they leave the nest, are quite noisy and have a monotonous and insistent rasping call that is kept up until they are fed, which can be two or three hours after dusk. As no "rasping" was heard in the brush, it was assumed that some mishap had overtaken the chicks, or else the parents had taken them away from the area.

A photograph of the nesting area of this pair of owls appeared in *Emu,* vol. 36, page 264, plate 37. At the left of the photograph can be seen a brush-filled gully that forks about halfway up. The fig trees are in the right-hand branch, about 100 metres above the fork.

It should be noted that the regular routine adopted by this pair of Sooty Owls was not duplicated by any other pair studied, nor did any other male consistently roost so close to the nest tree. It could be said that owls of this species are highly individualistic and the behaviour of one pair is usually quite different from that of any other pair. Both birds of the first pair were docile and easily observed, but others have been so wary and secretive that their nest trees were never discovered.

The breeding season is variable and although early autumn seems to be preferred, laying has been recorded from January to June inclusive and also in August and September. Breeding must be very dependant on food supply and a pair will sometimes switch from autumn to spring laying, and often a year may pass without breeding. A pair discovered in December 1960 reared a young bird which left the nest in July 1961, another which left the nest in January 1963 and two more in January 1965.

One or two eggs are laid, but usually only one young is reared; I have only one record of two. Over the years since 1958 nine pairs of Sooty Owls have been observed and screams have been heard at night in localities further afield, so it would seem that the species is well distributed in suitable localities throughout this and surrounding district. It is strictly a bird of the deep brushes and the tall timber. It seldom flies out above the trees, but prefers to move through them. Its flight at night appears swift and graceful. When a pair is on the move the male usually flies from one tree to another near the tops, while the female follows below with stops on low branches or stumps. One evening a female was within inches of alighting on my head before realising her mistake. On a previous occasion a young Masked Owl tried to do the same thing, but I emphatically declined the honour, being without a hat at the time.

Sooty Owls roost during the day either in bushy or vine-covered trees in the darkest parts of brushes or in hollow trees. When roosting in hollows they do not go down to the floor unless the hollow is quite shallow, but apparently perch on some projection just inside the entrance. One such roosting hollow was found to be 15 metres deep, but the male using it would appear almost as soon as the tree was tapped, then after a quick look down would duck back out of sight. At no time have the individuals of a pair been observed roosting together and occasionally it has been obvious from his behaviour and calls that a male has had no idea where his mate was when he left his roost at dusk.

Both Sooty and Masked Owls favour large, roomy hollows for nesting with depth apparently unimportant, varying from 40 centimetres to about five metres. One such desirable hollow in the main trunk of a Blue Gum *Eucalyptus amplifolia,* (Fig. 2) growing at the edge of a brush in a steepsided gully, is a little over three metres deep and the entrance is 22 metres from the ground. This tree has quite a history by now, starting in 1961 when a young Sooty Owl was reared in it. Early in 1962 the owls were present and by March it was considered the female had laid, so in April I took camera, rope-ladder and helper along to the Blue Gum. I climbed another tree to a limb conveniently opposite the entrance to the hollow and waited hopefully while my helper flushed the owl, but in vain. Even a stick rattled in the entrance failed to get any result and it was concluded that there was no owl there after all.

Having checked at night, and found the Sooty Owl was still occupying the hollow, we tried

again for photographs a month later and this time the owl scrambled up to the entrance, looked out and then seemed to tumble back down the hollow and could not be induced to show herself again. The gum was then climbed for the first time and the hollow found to contain a single chick with facial discs well defined and wing and tail feathers showing through the sooty grey down. There were also three Ringtail Possums in the hollow, all with heads and varying amounts of the foreparts missing. The chick was safely reared and left the nest in July.

During the autumn of 1963 and again in 1964 the owls were about the Blue Gum area and were even seen to go into the hollow, but they did not breed in either year. In 1965 they showed up at the Blue Gum in February and by the end of March the female had settled down in the hollow. I obtained a couple of passable photographs of her leaving this time and then climbed to the nest in her absence, but there was only a partly eaten White's Thrush in the hollow. A week later the female was still in occupation. After two more weeks I tried for additional photographs, but found the hollow deserted, although an egg was there, having been laid since my previous climb.

In February and March 1966 the Sooty Owls were once again in their nesting territory, and although the female was seen to enter the hollow one evening, they did not seem interested in breeding. A Yellow-tailed Black-Cockatoo *Calyptorhynchus funereus* commandeered the hollow and laid some time in April.

In March 1967 the female Sooty Owl was again in occupation and she was left undisturbed until May before the camera was taken up. Unfortunately the hollow was again deserted. Checking up a few nights later, it seemed that the male was alone and so possibly some mishap had accounted for the female.

In 1968 the male Owl had mated again, this time with a noticeably larger bird than before. They reared a single chick in a tree further up the gully than the Blue Gum, which was used by a pair of Masked Owls instead. In autumn the Masked Owls had been traced to a large Blue Gum a short distance down the gully from the Sooty Owls, but presumably had lost a clutch of eggs and moved into the Blue Gum of the Sooty Owls for a second try. As this was in August, there is no suggestion that they had evicted the Sooty Owls from their regular nest hollow. Masked Owls rarely use a nest site in successive seasons, even when they rear young, and this pair moved across to another gully the following year.

The Sooty Owls did not breed in 1969, but early in 1970 they had returned to their favourite Blue Gum and in April the female laid two eggs which turned out to be infertile. Though they reared a chick the following season, they seem to have moved away and I have lost track of them.

Masked Owl

Masked Owls are rare in the district, but are quite noisy at times and would not readily be overlooked, except when they become silent after eggs have been laid or young are in the nest. Generally they are more wary than Sooty Owls and one needs to be well concealed in order to hear what is going on around nest trees. I remember sitting near an old dead tree, suspected of containing a nest, for three hours one evening and two hours the next without hearing a sound, although it was occupied by the female with small young.

The calls are many and varied, the principal one being a drawn out, harsh "squawk". The Barn Owl uses the same type of call, but it is rather high-pitched, or "tinny". The male also has a rapid chattering call, loud and continuous, as he circles for up to half an hour high in the air in his courtship display, soft and barely audible, as he brings food to the nest hollow, where the female can be heard "rasping" faintly like a young bird. The circling and chattering is apparently not entirely a courtship display, because a male Barn Owl was once seen to put on the performance when his mate was feeding young almost ready to leave the nest. The female will also occasionally chatter softly.

When not breeding, a pair will sit about, usually in separate trees, after leaving their roosts in the evening and "converse" together in throaty chuckles, soft chattering and a purring sound that has also been heard from Sooty Owls. The monotonous "rasp-rasp-rasp" of the young after they leave the nest is similar to that of the young Sooty Owl, but louder. Only once has a Sooty

Owl-like squeaking been heard from a Masked Owl. Both species had reared young in the gully, in hollows about 200 metres apart. I was sitting close to the two young Masked Owls when the male, not at all shy came along and started "cursing" in no uncertain terms. What sounded like a Sooty Owl started squeaking at the edge of the brush, but the two young immediately flew in the direction and were apparently led away up the mountain, their rasps getting fainter until lost in the distance. It must have been the female Masked Owl, an extraordinarily wary bird, leading them away to safety.

Day-time roosts are in vine-covered trees in brushes or in hollows in eucalypts, and individuals of a pair do not generally roost together. I have only one record of a pair emerging together from a hollow at dusk, though there is a record of a male Sooty Owl and a male Masked Owl roosting close together. From 100 metres across the deep, brush-filled gully they sounded as though they were in the same tree, but doubtless that was not so.

These two species do share the same territory quite amicably. Every pair of Masked Owls observed has been located in the same territory as a pair of Sooty Owls, but they probably do not come into direct competition, as they seem to hunt over different types of country. As noted above, Sooty Owls stay close to the brushes, but the Masked Owls, half an hour or so after leaving their roosts in the evening, usually fly to some tall tree and then off over the timber towards open or partly cleared country, where they obtain most of their food. Only rats have been noted in nesting hollows, but rabbits are also taken. Old-time rabbit trappers used to complain of a "big, white night-owl" that would kill rabbits in the traps and, of course, ruin the skins.

The breeding season is much the same as that of the Sooty Owls, though with a smaller range of dates. Eggs are usually laid in March or April, but they sometimes switch to early spring laying in July or August and may occasionally miss a season altogether. In 1960, two pairs were under fairly regular observation and reared two and one young respectively. A third pair was discovered in December; it was not known if they had bred, but no young birds were heard. In 1961 none of the three pairs showed any sign of breeding. In February 1962 it was obvious that all three pairs were about to breed and they

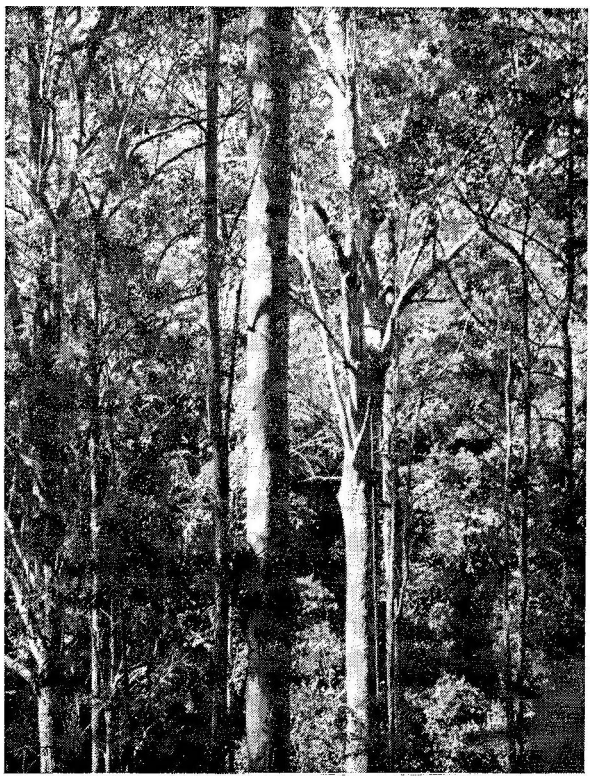


Figure 2. *Nest site of Sooty Owl in Blue Gum showing typical habitat of Sooty and Masked Owl.*

laid during the March-April period. The indications are that food supply is the factor determining breeding and that the decision can be a last-minute one. Twice females were known to occupy nesting hollows for a week or two and then give up without laying, in spite of some apparent encouragement from the males.

Though two nest hollows have been used by both species at different times, no sign of a contest for the apparently extra desirable sites was ever seen. The only time one species was seen to interfere with another was when a Southern Boobook Owl swooped at a Sooty Owl as she was returning to her nest after a short absence after dusk. The silent Sooty Owl made three unsuccessful attempts to get into the hollow, but the boobook, growling angrily, stayed on her tail and drove her around in circles. The fourth time around she finally made it and was heard to rattle down the broken-off hollow tip of a large eucalypt. The month was April and

the boobook would not have been breeding, and it does not seem to have been related to defence of the nest.

As Masked Owls rear two chicks as often as one, while the Sooty Owl rears two only rarely, it might be expected that the former would be the more plentiful, but they are not. They seem to have a fertility problem, there being usually one or more infertile eggs in a clutch, but that would not explain the difference.

The female of one pair of Masked Owls was of a somewhat unusual type, which is mottled steel grey above and white below, with a few round grey spots along the sides — a strikingly beautiful bird. This pair was discovered early in the year, but did not breed and the female was found to be missing towards the end of the year. The male stayed in the area for some weeks, then he too disappeared. Early in the following year there was again a pair in the same territory and I was reasonably sure that the male was the same bird, but the female was of the common buff-coloured type. Gould (Birds of Australia. 1 p29) commented on this grey and white type and, as all his specimens of it were males, he suggested it was a sex characteristic.

The only other individual of this type I observed here was also a female, quite docile, though rather silent and difficult to track. I was anxious to find her nest in hopes of getting photographs, but it took weeks to locate it, though the general area was known. Banging on the butts of trees is a waste of time, as Masked Owls will not flush until one is very close to the hollow, so nests have to be found at night. A 20-metre eucalypt stump poking up through low scrub was thought to be a likely site, but a Glossy Black-Cockatoo *Calyptorhynchus lathami* owned it. However, it seemed certain the nest was close, and the night it was found I was sitting hidden in the low scrub with about the only sound being what I thought was the monotonous croaking of a frog. After half an hour or so a male Masked Owl was heard overhead chattering softly and the croaking changed to the female's "rasping" in anticipation of a feed. The nest was found, but unfortunately it was hopeless for photography. Access was not too difficult, so I examined it the next day. The owls were having poor luck, as the hollow contained a newly hatched, but dead, chick and two infertile eggs. These two eggs are also now in the collection of The Australian Museum, Sydney.

Southern Boobook Owl

Not much need be said of the other two species, which are widely distributed and well-known. The boobook seems to prefer the high country and one can hear half a dozen birds calling in one small area in places like Tomalla and the Gloucester Tops to the south of 'Mernot'. In the areas favoured by the Sooty Owl there are generally only odd pairs of boobooks, which probably do most of their hunting in open or partly cleared country, as they are often seen along the roads at night.

Young boobooks trill and squeak in a somewhat similar manner to adult Sooty Owls. When there was soft squeaking behind me one evening I thought it was a Sooty Owl, but when it flew to a limb just in front of me and bobbed its head up and down I saw it was a boobook. It then flew back towards me and circled just above my head with a hovering, moth-like flight, having a close look at me, then perched again and uttered a number of loud single notes like "coo". It was probably a young bird. Just a few times over the years I had heard what might be described as a "half-screaming" call like "ow! ow! ow!" repeated several times, and it was eventually discovered to be a call of the boobook.

Barn Owl

The Barn Owl is not common in the district, and as it is generally found in open or partly cleared country and is also noisy, it would not be readily overlooked. I have seen it in brushes occasionally and a young bird was reared in the hollow top of a tall dead tree. The same hollow was occupied at a later date by a pair of Masked Owls.

There is an area of open grassland with a few scattered big eucalypts about two kilometres east of my house, which is a favoured breeding site of Barn Owls. Some years ago it was noticed that a male, uttering his tinny "squark" every few seconds, was flying east overhead fairly regularly just before daylight. As he was usually high up it seemed that he was coming from quite a distance to the west and had probably been at least six kilometres from the nest tree. This would add up to quite a large territory if the territory extended the same distance in all directions. One evening I set off down the pad-

docks on the owl's line of flight and had no trouble finding the nest tree. The large hollow, about 16 metres from the ground in a living eucalypt and 1.5 metres deep was examined later and found to contain three eggs, two young being reared in due course. Unlike other owls studied, the young Barn Owls made considerable noise in the hollow from the time they were well feathered and could be heard from a considerable distance. One evening when I was sitting near the tree one of the owls came along so early that a mouse dangling from the bird's beak could be seen quite clearly. The owl did not go down the hollow to feed the young, but just dropped the mouse down the hole and flew off looking for more.

I have been attacked more than once by male Barn Owls gliding silently down from behind and then swooping up over my head with a hair-raising screech. No other species of owl has ever attacked me. Male Sooty Owls have occasionally perched close to me when their calls were imitated, crouching and swaying with wings outstretched in a quite impressive threatening display, but have never actually attacked.

Discussion

In conclusion it might be appropriate to comment briefly on the furred animals inhabiting the forests and brushes, for if there were no mammals there would be no owls in the area. Koalas *Phascolarctos cinereus,* though certainly not plentiful, are sparingly distributed throughout the area of the owl territories except on the high tops. They are heard year after year in the same small area of a gully, so they apparently do not move about much. One evening when I had the tape recorder, and the owls were not cooperating, something started screeching and howling down the hillside below me, and as nothing like it had been heard before, I ran the tape for a while and then went down to investigate. It was a Koala sitting in a fork of a eucalypt. On sighting me it ran up a long, leaning branch as far as it could go. It is surprising how fast these animals can move when they want to.

Brush-tailed Possums *Trichosurus vulpocula* are plentiful in all types of habitat and are possibly killed on occasion by Powerful Owls. Ring-tails are also to be found in all areas, but prefer the brushes and provide a considerable part of the Sooty Owls' diet. Possum gliders are common in their preferred habitat, which is the higher parts of the main ranges, and they are the almost exclusive prey of the Powerful Owl. Sugar Gliders *Petaurus breviceps* appeared to be plentiful when I first started walking the bush at night, but now they are seldom heard and it is possible that the owls have reduced their numbers.

The introduced Black Rat could be called the staple diet of Masked and Sooty Owls, and fortunately so, because this may take some of the pressure off the smaller marsupials. In the 1950's a native rat *R. assimilis* built up to quite a large population and its extensive systems of tunnels and runways could be seen in long grass and undergrowth about the edges of brushes and along creek banks. No doubt the owls took large numbers of these rats, but they disappeared about the time I started "owl-watching". It is unlikely that the owls exterminated them, but no sign of the characteristic tunnel and runway systems has been seen for many years.

The small marsupial carnivore Antechinus is common, but I have not seen a skull in an owl cast or a carcass in a nest hollow. The little animals are so alert and so fast that it is possible that few of them are caught. Bandicoots have become plentiful since the Rabbits *Oryctolagus cuniculus* were eradicated, but I have no record of their being taken by owls or other predators. There is one sighting each of the Squirrel Gliders *Petaurus norfolcensis* and Native Cat *Dasyurus viverrinus,* while a few records each of Phascogale *Phascogale tapoatafa* and Tiger Cat *D. maculatus* complete the list of the smaller animals so far identified.

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