F.N.C.V.

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Stand of Messmate Stringybark and Manna Gum—Mt. Cole State Forest.

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The Victorian Naturalist

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Front Cover:

The editor took this photograph of the Bulldog Ant at Kiata, while on hands and knees, surrounded by at least a dozen of the same species. However he was lucky enough not to be stung.

The Wombat

by Dr. E. M. H. Ealey

Where farmers have gone to the trouble of eradicating rabbits and the expense of excluding them with wire netting fences, wombats can most certainly be a nuisance. They break through a fence like a small tank and allow rabbits to have entrance. There is no doubt about this in some areas. Therefore there is a case for controlling wombats where they are a nuisance. We cannot argue against this.

In order to assist in control, local councils subsidized by the Government paid a bonus of $1.00 on each wombat scalp presented to them. Each year 7-8,000 scalps were collected. This bonus has been removed for a trial period of two years. It will automatically be reimposed on 22nd May 1969 unless further legislation is passed.

There are two ways of killing wombats:

(1) Heavy steel jawed traps are set at the entrance of wombat holes or on their trails. The wombat is held by the leg which is often broken until the trapper returns. This may be a week later. In the meantime the wombat has died of heat stroke, thirst or simply pain and misery. This is the method generally used to collect the ears and scalp for which the bonus is paid. These traps are also known to catch dingoes, foxes, wallabies, kangaroos, lyre birds, echidnas, etc.

(2) Wombat burrows are fumigated with chloropicrin, cyanide or carbon monoxide. Although this method cannot be said to be kind it is by no means as cruel as trapping. The Lands Department is attempting to discover a more humane method of fumigation. It is far more efficient as there may be up to six wombats in a burrow.

In Europe farmers construct a swinging gate to allow badgers to pass through a fence. A few Victorian farmers use this technique. By placing a heavy swinging gate at a hole which wombats have made in a fence, they have prevented further damage. Mending the hole simply means the wombats make other holes somewhere else. This technique could be tested further by farmers with the interest, time and money.

There is evidence, as yet inconclusive, that dingoes in some areas depend on the wildlife killed in traps. The evidence for this is found in dingo stomachs. Wallabies, wombats and other wildlife caught in traps set for wombats would certainly add to the diet of dingoes.

Results to date suggest that there are at least 500,000 wombats in Victoria. According to one wildlife expert perhaps 2,000,000. We cannot argue therefore that the 6-8,000 killed each year will in any way damage this population. It certainly will not. However, we must demonstrate the uselessness of the bonus system.

First, a few remarks about the properties of animal populations. The numbers of most populations are usually regulated by the actual density. If the density gets too high some factor depresses reproduction and/or increases mortality. Clearly, if there were 400,000 adult wombats in Vic-

toria and all the young (say about 200,000) survived each year the numbers would soon be astronomical. A few farmers have visions of them swarming across their paddocks. Some species breed up to a critical density and then crash when disease or starvation causes widespread mortality. This occurs in some kangaroo populations and maybe among wombats. If enough of the animals are periodically killed a critical density is never reached and a higher overall density is maintained. If too many are killed the population declines, sometimes to extinction. This general hypothesis has been demonstrated in many sorts of animals and has two main applications.

1. In game management or fisheries it can be calculated what percentage may be taken each year without damaging the population. This depends on litter size, rate of growth, age of maturity and natural mortality. In some deer populations in North America 15-20 per cent can be killed each year and the population remains stable. With some animals 50-80 per cent can safely be killed each year e.g. rabbits.

2. In vermin control the same principle applies. If the vermin species had the same biological properties as the deer just mentioned, money paid on bonuses for 15-20 per cent of the population would be *absolutely wasted.* The population would adjust its reproductive rate and/or survival rate slightly and so compensate for the loss. Bonuses on wombats accounted for less than one per cent of the population. The more intensive trapping that was carried out near farms was in many cases little better than "culling" as it was not efficient. Thus in some places a more vigorous population was maintained where it was least wanted.

Let me present the arguments against and for bonuses, making special reference to the wombat.

Arguments against the bonus system:

1. There is a strong tendency for bonuses to become regarded as the actual destruction method instead of only an inducement for others to assist.
2. Any bonus payment system is an open target for fraud, misrepresentation and exploitation of an animal.
3. The higher the bonus the more it pays trappers to concentrate on individual pests instead of mass destruction techniques.
4. Overseas experience over many years has proved the failure of bonuses.

In regard to the wombat:

5. Much time is lost returning to traps to secure scalps. This time could be spent fumigating burrows in other trouble spots.
6. A trap at a burrow catches only one wombat. A burrow may contain six wombats which would be killed by fumigation.
7. Trappers often seek only dense populations. As soon as the law of diminishing returns applies, other populations are sought while the former may quickly recover.
8. It is well known that some trappers operate far from trouble spots simply wasting public money and giving the Lands Department an odious reputation. It is my opinion that wombats never move more than two miles from their burrow. This would be normal for an animal of this size.
9. Payment for destruction of a *native* animal is most distasteful to many in the community. Overseas people are appalled when they find out about it.

Arguments by those in favour of bonuses:

1. If the bonus system is dropped there will be no check on the increase in wombats. (There is much evidence contrary to this; see above re natural checks on animal populations.)
2. Bonuses are an incentive to employees to carry out more destruction work than they would normally do. (This would still be inadequate to outstrip recruitment to the population and employees simply go where the wombats are dense.)
3. Every scalp is evidence of one pest less. (It is only evidence of one killed, another will survive and take its place. If it came from more than two miles from a trouble spot it was a waste of time and money.)
4. Bonuses are better than nothing. (There is seldom evidence that bonus payments are ever made on enough scalps to change the population.)

In short, the bonus system is a *waste* of taxpayers' money as it is most *inefficient* and it leads to excessive *cruelty*. Where the wombat is shown to be a pest the complaints should be dealt with promptly by the Lands Department who have competent experts.

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The F.N.C.V. is against the bonus as a form of control. We feel that the removal period has proved the ability of the Vermin and Noxious Weeds Board to deal with complaints of fencing damage by treating each case on its merit and sending staff to deal with the problem. This is control as it should be by the Department concerned.

Your support is now required. Write to the Minister for Lands, Hon. J. McDonald and make your views known.

Conservation by Cultivation

(Notes on a talk given at the La Trobe University to the Conservation Society.)

by T. E. George

On a scorching day in October 1937, a young country schoolteacher watched the stocks, wallflowers, linarias, and pansies wilt and die in his school garden, simply because he did not have a water supply at the school to keep the plants growing during dry weather. Only a few miles north of the Yanac State School, in the sand of the Great Desert of Western Victoria, the native plants were thriving and blooming under the very same scorching conditions that were causing the death of the plants in the school garden. On that day emerged the idea that native plants would be suitable for growing under the drought conditions that existed in many schoolgrounds for much of the school year, and practically all of the long Christmas vacation. During my seven years as Head Teacher of that little country school (for I was that disappointed young teacher), I studied the desert plants, collected seeds and seedlings, and grew many successfully in the school garden. Soon I was able to supply many other schools in the area with plants for their school grounds, and by 1942 was sending trees in tins free of charge except for freight to all the schools in the Wimmera and Mallee, if they wrote and asked for them.

105 out of the 145 schools in the Horsham Inspectorate received free trees from the Yanac State School in those few years. Many of those country schools would now be closed, but it would be very interesting to find out how many, if any of the trees have survived, and how much interest in our Australian plants was aroused by my enthusiastic advertisement of the much-maligned "scrub" which had to be cleared before payable crops could be grown.

Many different and beautiful plants were collected in the Great Desert, the Little Desert, the Lawloit Hills, around Lake Hindmarsh, and along the many bush tracks throughout the area. A record was kept of all the plants found, and all were identified by the botanists at the Melbourne Herbarium.

When I was promoted to Reservoir in 1944, I brought many native seedlings with me to find out how these plants would grow under ideal conditions of higher rainfall and an assured extra water supply in summer if needed.

I was the fortunate purchaser of a home, on a half acre block of good sandy loam, and during the past 24 years have grown many thousands of native shrubs and trees in my backyard nursery primarily to establish a native Botanic Garden of my own, in order to learn as much as possible about our plants so that I would be able to pass on my knowledge and enthusiasm to children and teachers.

My main aim was to grow as many different varieties as possible, so that the best could be chosen and grown in small areas to show off their beauty.

This is possible to some extent in school grounds, but more particularly in public parks and gardens where permanent staffs allow some continuity of care and attention.

When the late Reg Edwards, of Sydney Horticultural fame wrote in

1946, that in a tour of five states he experienced the greatest difficulty in finding workers who were more than casually interested in the preservation of native flower shrubs and trees. Further to this he added that there is a much wider field for research, collection, propagation, and eventual distribution of seeds and plants of our wonderful native flora.

From this, I ventured to suggest to him that he had not visited the Victorian State Schools' Horticultural Society's Nursery at Hughesdale, where under the leadership of the late Mr. E. F. Murnane a splendid effort was being made to inculcate a love of our own Australian flora in the minds of our school children at their most impressionable age.

The lack of interest in Australian flora was caused by the difficulty experienced in trying to transplant them from natural conditions to garden conditions. The result was that many were doomed to extinction from the very first settlement in Australia.

My main schoolground plantings during the past 24 years have been done in the northern suburbs at Keon Park State School, Preston North-east State School, and Newlands State School where I have been teaching. But many other schools, colleges, seminaries, and even Fairlea Women's Prison have received donations of Australian trees and shrubs from my nursery.

Within two years in 1956 to 1958, the Keon Park schoolground was transformed from a sea of mud to the most improved schoolground in the Preston Inspectorate through large scale planting of Australian shrubs and trees all of which were grown in my nursery, and all donated to the Education Department.

Although plants from every state in Australia are represented in this large scale planting at Keon Park State School, the Grampians and eastern Australia had most representatives.

During these years many trips were made during holidays, to the Grampians in particular, to collect seeds and seedlings. Some of the very successful Grampians wildflowers grown at Keon Park included several Thryptomenes, the Grampians Gum, the Snow Myrtle, and the Purple Kunzea. During my four years at Keon Park State School the Head Teacher, Mr. J. E. Hall (who was a past pupil of Mr. A. J. Swaby, founder of the Growers of Australian Plants), and I were privileged to be invited to be foundation members of the new Society of members who would do their little bit to help preserve our heritage by cultivating Australian plants in their own gardens.

The school garden at Preston North-east State School has a greater variety of plants from all states, and planting all around the schoolground has been very successful. The greater distance allowed between plants has been responsible for better development of each individual plant, and all should eventually be able to be seen to advantage without any overcrowding, as happened at Keon Park where provision of a shelter break from cold north winds was our prime necessity. This shelter belt was achieved very quickly by planting close together.

The schoolground at Newlands State School was even more ideally suited for showing off our plants to advantage, as the school buildings were situated at a greater distance from the streets. After the initial boundary planting was finished, specimen plants of many different varieties were strategically placed in order to show them off to advantage when in flower. In this way we hope to eventually have a miniature Botanic Garden at our own school.

Several of the Western Australian wildflowers grown from seed, collected during three months' long service leave taken for this special purpose (to learn more about our plants and to collect seeds and specimens for pressing), have already flowered at the Newlands State School.

The Western Australian expedition of 8,000 miles, during which more than one thousand different wildflowers were collected, not only for myself, but also for Melbourne Herbarium, Western Australian Government Botanist Mr. Royce, retired Government Botanist Mr. Charles Gardner, and Dr. Grieve, Professor of Botany at the Western Australian University, was undertaken during the months of September, October and early November 1963.

I have written a 22 chapter, 60,000 word book on this expedition, called *Wildflower Hunting in Western Australia*, which I hope will be of some help in the conservation program if accepted for publication.

The Education Department seemed to be taking an interest in Australian plants and their conservation, which was evidenced by the essays set for the examination in Botany II for teachers, over the years from 1959 to 1967. In 1959 "The distribution of native plants in Australia, with particular relation to rainfall." was the essay set for discussion. Then followed:

1963 The contribution of native plants to human welfare in Australia.

1964 Are our Australian native plants worth saving?

1965 The growing of native plants in a school garden for teaching purposes.

1966 What steps have already been taken, and should be taken in the future, to prevent the disappearance of the Australian flora?

1967 The need to conserve the native flora of Australia, and how this can be accomplished.

Coburg City Council asked for advice on planting a special reserve in Sydney Road, with Australian plants. As the council has been very good to the school, I had very great pleasure in asking if I could donate the trees for planting the reserve, as I knew that they would receive more attention from trained garden staff than even enthusiastic teachers and children can give them. Some of these have already flowered. Some died during the drought and are to be replaced, and *will* be replaced until the reserve is fully planted with Australian plants.

As Kodak Australia have also been of great help to the school I asked if I could provide Australian plants for a special section in their grounds. My offer was accepted, and the plants are growing extremely well under the excellent care of the garden staff. This voluntary work over so many years has meant a great deal of work and expense in collecting seed, tins, and soil, as well as excess water rates; so I asked the Education Department for permission to sell excess stock in order to defray expenses. The answer received from the Department was that they considered what I was doing was a hobby, therefore I did not need permission to sell . . . The small charge of 40 cents for plants in pulp tins helped me to defray expenses, and the all clear given by the Department allows me to carry on the work I am doing free from an uneasy feeling of breaking regulations every time I sell one plant for every dozen I have given away.

The Country Roads Board has already used many of my trees to plant nature strips in front of the aerodrome,

along the Hume Highway, and the Tullamarine Freeway. This year, 1968, my offer of a dozen Australian shrubs and trees to all the schools in the Reservoir Inspectorate has been widely accepted and appreciated. I would like to be a man of independent means to be able to supply thousands of trees so that they can be widely grown and admired. I have the seed of numerous varieties of Australian plants, the knowledge and the ability to grow them in thousands for wide dissemination. I have thousands of plants growing in containers large and small, ready for planting out or for exhibition purposes. I have a pressed collection of many thousands of Australian plants, mounted for show purposes, also seed capsules for teaching purposes. I have many hundreds of large plants in large tins, two and more years old proving that they can be grown in containers for exhibition purposes. Many of these large plants are still unidentified from the Western Australian trip and are known only by a number such as Melaleuca purple 1. These advanced plants are being sold for $2 if anybody needed to establish a garden of Australian plants in a short time, but the small plants are best for growing stronger, particularly in places subject to heavy winds.

I had hoped that many of my plants would be used at the University to provide a Botany section in the gardens, as four members of the Botany staff were very impressed with both growing and pressed collections of plants. But I have seen the overall plan of the university grounds, and although many Australians are being used, many will grow too large and shady to allow the smaller Western Australians to flower as prolifically as they do when given plenty of sun. However if a special section is devoted to the lower growing plants they will flower well, and if some lawn specimens are allowed to be grown well away from the larger trees the number of different varieties could be increased considerably. The available garden area at La Trobe should be able to allow a special section for conservation purposes. It is in reserves such as these where we could have a sure and attractive way of preserving our plant heritage. Preservation or conservation by cultivation should be our watchword. I would like to plant out many of these reserves so that our plants can be seen in their full glory. If the Americans had such a wealth of flowering shrubs they would concentrate them in parks and tell the world to come and see them. King's Park in Western Australia was granted $66,000 a year for five years to concentrate the best of the Western Australian wildflowers in a special area in the park. Why can't we have one at La Trobe?

* * *

Aboriginal Campsites on Wyperfeld National Park and Pine Plains Station

by Aldo Massola

Introduction

The Wimmera River, discovered and 'lost' by Major Mitchell in 1836, was rediscovered by Eyre in 1838, who traced its course to, and named, Lake Hindmarsh. What followed is history, and in this paper we are not concerned with re-describing the vicissitudes of exploration, and the hardships suffered by the settlers who followed in the explorer's footsteps. Their bravery and courage has been justly praised already many times, and by worthier pens than mine. What I propose to do instead is to place on record the findings of a small party, of which, in a sense, I was the leader but not the guide nor the organizer. I simply stated where I wanted to go and I was taken there.

Our purpose was to locate, in the singular country at the end of the Wimmera River system, traces of the aborigines; and thus be in a position to either confirm or to deny the veracity of a number of 'stories' claiming that this hard-to-get-to region was an aboriginal 'centre'.

The organizer and guide—the man who did all the work—was Mr. Ron P. Falla, a farmer and conservationist of Litchfield. The third member of the party was Mr. Falla's young son, David, who, I think, had the time of his life; and, on our trip to Lake Wirrengren, at the very end of the Wimmera system, we had the good fortune to have the company of Dr. R. Frazer, the noted naturalist, and of Alec Campbell, the Ranger of Wyperfeld Park. His knowledge of the country through which we travelled, and of its flora and animals is astounding; and I wish to state that he helped considerably in ensuring the success of our expedition. He had also laid his foundations well, by advising Mr. O'Sullivan, the owner of Pine Plains Station, of our intended visit; and that 'King of the Wilderness' received us most hospitably, and personally acted as our guide through his vast domain.

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The Wimmera River

The Wimmera River rises in the Pyrenees and flows north-west to about Natimuk, where it takes an abrupt due-north turn to Lake Hindmarsh. The river, it is well known, often does not run at all, or it may be reduced to a series of muddy waterholes. At other times it can run with the impetuosity of a mountain stream, and flood the country for miles around. As a result Lake Hindmarsh either dries up and traffic takes a short cut across its bed, such as in 1902, 1906, 1929 to 1932, 1945 to 1951; or the lake fills and overflows. The water then runs north through Outlet Creek to Lake Albacutya, and, on rare occasions or in very abnormal seasons, overflows from it also, and continues north, filling one after another fifteen or so small and large depressions before reaching Lake Wirrengren, or Wirrengren Plain.

All these depressions are named, and are referred to as 'lakes' or 'plains' or 'flats' irrespective of whether dry or otherwise. The most southerly ones contained water between 1911 and 1915; and in 1918 the water actually reached Lake Wirrengren, for the first time in living memory. (The previous occasion was in 1852, when there was fifteen feet of water on the plain.) The 1957 floods put four feet of water on Black Flat, in Wyperfeld Park, but it did not go much further north.

The country through which Outlet Creek runs is undulating, and consists of either white sand, covered with open to dense mallee scrub, with an undergrowth of myrtles, spinifex, pine-scrub, dwarf casuarina, and banksia; or of red sandy clays supporting a dense vegetation of tea-tree, acacia, and myrtle bushes. Everywhere there are small flowering shrubs, and from the top of the higher sand ridges, as far as the eye can see, there is an extraordinary view of a sea of dark green; the wild monotony being only broken by glimpses of sand on distant ridge-tops and by the few scattered native pines towering above the scrub.

Everywhere on the sand there are tracks of wallabies, kangaroos, emus, reptiles, and small birds; and, occasionally, of rabbits and foxes. By proceeding quietly many of the track-makers may be seen. The most displeasing sight was the tracks of a domestic cat gone wild; this being the most blood-thirsty and destructive animal found in the Australian bush.

The bed of Outlet Creek is a well defined channel of varying width and depth, meandering through the maze of dry lake and lagoon beds, and is flanked on either side by high sand dunes. The dark soil of the creek-bed supports a profusion of red-gum and black-box trees, some of which must be of considerable age; and is covered by a luscious growth of grass, which, in normal seasons, reaches to a man's arm-pits. The creek-bed and the 'flats', thus stand in sharp contrast to the surrounding desert. It is like the proverbial oasis in the scrubby wilderness.

The River and the Aborigines

Before we proceed, it may be as well to examine the possible ways this fascinating region was reached by the aborigines when converging on it for their periodical intertribal meetings.

For the southern tribes the obvious way was to follow the course of the Wimmera River. This route is in fact marked by conveniently placed campsites, to be reached by the end of a day's march. Beginning from the large one near Horsham, and travelling north, there is a camp at Reedy Swamp, south of Dimboola, another near Antwerp, and a third, a large one, on the sand dunes on the eastern side of Lake Hindmarsh. The next stop was Lake Albacutya, and then the campsites in the present Wyperfeld Park were reached.

Yarriambiac Creek was an alternate route for the southern tribes. Campsites along this creek include the one just south of the Warracknabeal aerodrome, then proceeding north, one just north of Lah, another, south of Beulah, and then Lake Coorong was reached. From there the way to Wyperfeld was probably through Buroin. The tribes from Lake Buloke also went to Lake Wirrengren via Lake Coorong.

The Murray River tribes went to the meeting place by way of Gayfield, the Hattah Lakes, and Tiega or by way of Chinkapook, Lake Tyrrell, and Lake Coorong. The journey between Gayfield through Tiega, to Lake Wirrengren, approximately fifty-five miles, was done in two days; but it is likely that the southern routes were covered in a much more leisurely fashion. What made the difference, no doubt, was the availability or otherwise of water.

Though it is believed that there were small groups living in the mallee country to the west of the river system, their route to the meetings is not known. There are a number of small camps to the west of Lake Hindmarsh, notably at Sandsmere, Broughton, Yanac, Netherby and Lorquon, but whether these were on a recognized native track is not known to me.

Water did not present any problem to the aborigines, since they knew the whereabouts of native wells. These were

Wonga Lake Campsite.

photo: Author

Lake Agnes
Campsite.

photo: Author

either clay-pans, which contained water in winter, or else soaks. The latter occur in poor sandhill country, and are probably clay-pans filled with drift sand. The natives sank shallow conical holes in these, and thus obtained water. The holes were then kept covered with sticks, both to minimize evaporation and to keep the water clean and protect it from kangaroos and wild dogs. Each of these wells had an individual name, and the natives knew which could be depended upon during the different seasons.

They also relied on the water stored in the roots of certain plants, such as the weir mallee and the needle-bush hakea. Both of these have long horizontal roots, only a few inches below the surface of the soil. After digging them up the natives broke them into short lengths and up-ended them, making sure that the end furthest away from the tree was on top. Good clear water soon dripped out; a root of from fifteen to twenty feet yielding between one and two pints.

Water was also obtained from the mallee oak. When over six inches in diameter the trunk of these trees is partly hollow and holds rain water, which drains into it through holes at the junction of the branches. The natives tied a bunch of grass at the end of a spear and dipped it into the holes. The grass acted like a sponge.

Crab-holes were a further supply of water, and it was obtained either by sponging it out with the spears, or by sucking it up through reeds, if these were available.

As a precautionary measure, when travelling in this country the aborigines carried waterbags, made by tying up the neck and leg holes of a fresh possum skin. They also continually chewed the tender tops of the native currant bush, which grew everywhere. The strong, yet pleasant acid from this shrub prevents the lips and mouth becoming parched, thus alleviating the necessity of drinking frequently.

Food was plentiful. As well as all manner of animals, both large and small, there was a profusion of seeds, nuts and edible roots.

Wyperfeld Park and Pine Plains Station

The first stop after passing through the rustic entrance to the Park is, of course, 'Wonga Hut'. This famous tin shed is well known to all who have visited Wyperfeld. What is not known is that on the 'tourist area flat', amongst the red gums growing at the foot of the sand dunes on the north-north-west of the hut, there is a tree exhibiting the characteristic scar left when bark for a canoe has been removed. A canoe tree in that position denotes water on the flat, and fish in the water, carried thither by the flood, to serve as a welcome change of diet for the aborigines.

Near-by Lake Brimin, of great tourist attraction because of its 'dog-leg' fence and its whim (the latter originally constructed on Wonga Lake to obtain water during the severe 1863-1865 drought) has no attraction for the hunter of aboriginal relics. If any existed on its banks they have been engulfed by progress, or long since picked up either by emus or by the tourists.

Black Flat, about three miles north-

west of Wonga Hut, is surrounded by sand dunes. A search on these revealed no implements or even stone, but scattered over a small compass on the sand dune on the west side of the flat there were about 40 fire scorched freshwater mussel shells. One can visualize a little group of women, who, having 'fished' for the mussels in the mud of Black Flat, retired to the top of the sand dune to eat them and whatever other delicacy they had collected, while the children romped about happily or slid down the sand on the sides of the dune like children all over the world do. All that has gone now, except our imagination and the mussel shells!

Lake Brambruk, about three and a half miles north-east of Black Flat, greeted us with a beautiful campsite. It is on the sand dune on the west side, and extends over an area of from 8 to 10 acres. Mussel shells and fragments of emu egg shell were plentiful, and so were chips and lumps of stone, mixed with stone implements, broken mill stones, hammer stones, scrapers and microliths. In all we 'bagged' 206 pieces, made from flint, conglomerate, vesicular lava, both fine and coarse grained sandstone, quartz, and chalcedony.

Our next call was at Wonga Lake, about three and a half miles north-west of Brambruk. This was the original place where the whim now at Brimin was built, and some of the structure remains on the dry bed of the lake. There is a campsite there also, on the sand dunes on the northern side, and from it we collected 352 pieces of stone, including a large proportion of used flakes, scrapers, microliths, and some lumps of red ochre. One beautiful discoidal microlith had been made by splitting a minute quartz pebble, of which it retained the 'cortex'. Other materials included chert, endurated limestone, quartz, quartzite, and chalcedony. One end-scraper was made of tekalite. On the creek-bed below the north-west dunes of the lake there is an old red gum canoe tree, with its base partly burnt by a bushfire, and its 'inner' badly damaged by white ants and borers, and currently falling out of the canoe scar. Soon it will be a hollow tree.

Lake Agnes, on Pine Plains Station, is about eight miles north-west of Wonga Lake, and has, on its south-east side, a 'blow', which exposed a clay bottom. Fragments of emu egg shell and mussel shells were plentiful on the clay, but stone was not. Only about 50 pieces were found, and the few implements amongst them were all microliths. Material ranged over quartz, quartzite, chert, endurated limestone and micaceous sandstone. A human burial had been exposed and scattered over a large area by the wind, and the brittle bones lay broken into fragments. Young David Falla found, and became the proud possessor of, a molar tooth.

On the slopes of Mt. Jenkins, a sand dune immediately north of Lake Agnes, which we climbed to better observe the lake, we found an old dead black box tree from which a shield had been removed. This tree is on the west side of the 'mount', close to the track to Lake Wirrengren.

Lake Wirrengren is a five mile by ten mile grassy plain about two miles north-west of Lake Agnes. Apart from the grass, the only other vegetation on this plain is one very tall red gum. This lake is the end of the river system, and despite rumours, no channel extension issuing from it has ever been found. On the western horizon from where we were there is a low sand ridge, O'Sullivan Lookout, and others on the north-east are known as Kelly's Lookout and Mt. Observatory, the latter a ridge which rises 368 feet above the surrounding scrub. What interested us most, however, was a 20 acre blow on the sand ridge on the east side of the plain. We could have collected all day upon it, but we contented ourselves with 'type' specimens, 161 pieces in all. These included utilized pieces and knives, both semi-discoidal and end scrapers, semi-discoidal and segment microliths, and broken mill and hammer stones, made from flint, chert, quartz, quartzite, chalcedony, and endurated limestone. There was also a number of limestone nodules and concretions scattered about on this campsite, and some baked river clay, obviously used by the aborigines to line their ovens.

Conclusions

This trip resulted in the locating, for the first time, definite proof of aboriginal occupancy of the country to the north of Lake Albacutya. It also served to verify the accuracy of an aboriginal legend which I was able to piece together from information received separately from a number of aborigines in different parts of Victoria. The legend was published in my book 'Bunjil's Cave', and cannot here be repeated in full. Briefly, it states that the Wimmera River was

originally the track of a kangaroo. It stopped a long time at Lake Hindmarsh, and a shorter time at Albacutya, and thus those two lakes were made. The kangaroo then went on in a northerly direction, and his tracks became fainter and fainter until they disappeared in the sandhills. This is how the Outer Channel was made. Then a triantelope, or huntsman spider, and his two daughters, followed the tracks, in an endeavour to escape from their enemies, the Bram-Bram-Bult, the two Bram-brams, who were two brothers famous for their magic. The triantelope camped at Lakes Hindmarsh and Albacutya, but the two brothers only caught up with them at the next campsite, Wonga Lake, where they killed the father and amused themselves by rolling his head from one to another, thus forming the lake-bed. The limestone nodules found on that depression, (and on no other in that river system) were the teeth which dropped out of the triantelope's head as it rolled about.

However, we found a campsite on Lake Brambruk, south of Wonga Lake, which had not been mentioned as forming part of the legend by any of my informants. A story widespread in the Wimmera district has it that this lake was supposed to have been named by Captain Morgan, the bushranger, after a favourite horse. It is claimed that Morgan was in the habit of bivouacking at this lake on his way to South Australia, to sell the horses he stole from settlers in Victoria.

It is a little difficult to believe that anyone could have chosen this route to go to South Australia; and I am inclined to think that Brambruk is a corruption of Bram-Bram-Bult, and that the campsite name forms part of the legend. The two brothers could well have camped at this lake just before attacking the triantelope at Wonga Lake. If there was any naming, then the horse was named after the lake.

However, to proceed. After killing the triantelope father the two brothers abducted the two triantelope girls, and took them to Lake Wirrengren. At this spot they decided the two girls were no good to them, so they speared them, and dashed out their brains and jaws with their waddies. This accounts for the many ('double' the number found on Wonga Lake because of the two heads) limestone nodules and concretions found at that campsite (and not on the lake-bed).

Apart from the legend there are several early records of the aborigines congregating at Lake Wirrengren. The name should be Werreng-jerren, and means 'noise as made from many people' i.e. from the tribes assembled there. Lake Wirrengren we found to have the largest campsite on the river system. This would testify to its importance. There is more proof: throughout this country there is no stone of any description to be seen. That found on the campsites must have all been imported. We may hazard a guess: flint from the coast west of Portland; vescicular lava from the Western District; sandstone from the Grampians; endurated limestone from north of Tailem Bend, in South Australia, chert from Western New South Wales, quartz and quartzite from Central Victoria. Nor must we forget that emus have the nasty habit of swallowing stones, especially the

Lake Brambruk Campsite.

photo: Author

Lake Wirrengren Campsite.

photo: Author

brightly coloured or the black ones, to help their digestion. No doubt over the last century, they have robbed the campsites of hundreds of beautiful specimens!

The dearth of large implements on these campsites can be explained by two reasons: (1), is that the further from deposits of stone the smaller the implements; and (2), over the years the local station owners have employed hundreds of hands, some for a very short time. All these people would recognize an axe or a millstone, and would 'souvenir' it, leaving behind the little implements because they did not recognize them as such. All this would suggest that the aborigines did congregate on this country for their intertribal meetings, where all kinds of goods and produce would be exchanged.

There is just one more point: Was there a permanent native population on these lakes? Most likely, but it probably was very small. We have only two records of this, but they should suffice, remembering that the white man still does not know the Mallee.

One is by J. M. Clow, who discovered and occupied Pine Plains in 1847. He referred to an aboriginal and his three wives and two children permanently living at Balarook, west of Lake Hindmarsh (just north of the present Broughton). The second reference comes from W. L. Morton, who visited Pine Plains in 1861. He stated that some of the natives then living at the station had, up to the previous year, lived for three and a half years 'in a wild state' in the neighbourhood of some salt lakes south-west of Pine Plains.

I feel that all the queries have been answered and that our expedition achieved all it set out to do; but we cannot leave the subject of Pine Plains without mentioning that Clow's original hut, made of hand-hewn timber and assembled without the use of nails by means of grooved cross pieces, and roofed with slats (covered with galvanized iron at a latter date) still stands, although it is not, of course, in the best of conditions.

For those who would like to see a real pioneer's hut, (Clow's) and a lonely bushman's grave (Joseph Everard's at Pine Plains, 1867); for those who would like to imagine the Mallee as it was, with its aborigines, with the tragedies of the early settlers (three-day old baby Cameron's grave at Wonga Hut) and, to see a type of country unique in the world, with its strange landscape, amazing flora, and beautiful birds and animals, I recommend the Wimmera River system. But before all, they have to be fortunate in finding a Ron Falla to take them there.

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Observations on the Sacred Kingfisher

by W. Perry

Splitters Gully is close to the southern boundary of the Whipstick. More than a century has passed since this area was "rushed" during the 1850's, but hundreds of shallow diggers' holes remain as evidence of former activity. A gold nugget weighing 270 ounces was unearthed here in 1868 by a lone German prospector, a "hatter", called Jacob.

Today this gully, except for bird calls or the ring of the wood-cutter's axe, is silent. Tall Yellow Gums (*Eucalyptus leucoxylon*) and Green-leaved Box trees (*E. microcarpa*) stand close together like sentinels guarding a rifled treasure house. The only gold to be seen here now is during August and September when Golden and Whirrakee wattles splash their colour across the landscape.

When I walked through Splitters Gully on 13th December, 1958, the bush was extremely dry. A pair of Sacred Kingfishers (*Halcyon sanctus*) flew around among the tall trees, one with food in its beak. This bird suddenly flew down an old mine shaft, and almost immediately flew out.

The old shaft, surrounded by a high mound of mullock had caved in. Inside was a miniature crater some twelve feet across and as deep. In the side of the shaft the Kingfishers had excavated their nesting tunnel. Descending the crater, I flashed a torch in the nest and counted four un-feathered birds.

I crouched hard against the side of the shaft, and shortly the parent birds resumed feeding. Brown cockchafer beetles comprised the main diet. On one occasion a large red centipede was brought in and slowly hauled in like a length of coloured rope by the fortunate recipient within.

When a parent bird brought food, it usually alighted on the same branch of a nearby tree, from where the interior of the shaft was in full view. It would then make a call which was answered with vigour by the nestlings. The clamour from the nest sounded much like that heard from a nest of young starlings. The exchange of food from parent to young was practically instantaneous, and on no occasion did a parent bird remain perched at the entrance of the nest. My presence only a few feet away may have accounted for this.

Deciding to attempt photography, I set up the camera on the fallen rubble and hoped the old shaft would not collapse further. Extending over a period of four or five mornings I obtained some reasonable photographs.

During this time some interesting observations were made.

This nest, like other nests of the Sacred Kingfisher previously observed, appeared unhygienic, with the odour being most unsavoury. With a small stick I scraped out some of the foul-smelling material from the floor of the nest. There were various parts of beetles and quite a number of live maggots. Flies flew in and out. Despite this filth the young birds did not excrete in the nest. Indeed, they approached the entrance, turned around and with some force ejected the excreta outside.

One morning the young birds were fed entirely on small skinks. Several times after a parent had delivered a lizard, I quickly crossed the shaft, and with the aid of a torch observed how the small reptiles were accepted by the young birds.

It was always the same. The parent bird grasped the skink in its beak by the throat, and thrust the head into the open mouth of the nestling. It was then impossible for the lizard to open its mouth. The small reptiles were swallowed whole. At first writhing violently, the movement of an unfortunate victim gradually eased as it was slowly swallowed, until only the tip of the tail remained. Then this would cease to move and with a final gulp all was consumed.

I was anxious to secure one of the skinks for identification. When one bird had been given a lizard, I was able to seize the tail, and after a brief tug of war, secure my specimen. I was amazed at the strength of the young bird. The "captured" specimen was three and a half inches long, and I considered it to be a Common Grass Skink (*Leiolopisma guichenoti*).

I had this nest under observation for several weeks, and on December 26th, all the young birds were present. On 9th January only two birds remained in the nest, and both appeared well feathered, and in my opinion ready for flight.

Three years later, on 15th January 1961, I again visited the old shaft. A pair of Kingfishers were nesting in a new tunnel some three feet from the old one and contained young birds.

When passing the same mine shaft on 5th January 1969, I stopped and inspected it for nests. A Sacred Kingfisher flew out of a nesting tunnel, a new one, which contained four eggs. By 15th January, all eggs had hatched, and on 26th January, the young birds were partly feathered. Just inside the nest entrance was a quagmire of excreta, some of it splashed outside and down the side of the shaft. A number of ants were roaming around inside the nest close to the entrance. I scraped out some of the filth which included maggots and the remains of a large spider. It has always puzzled me why such beautiful birds have filthy nests.

Over a number of years I have observed Sacred Kingfishers nesting in the sides of old mine shafts, close to the surface, and on one occasion in the mullock surrounding the mouth of the shaft. Certain localities in the Whipstick are frequented by Sacred Kingfishers almost annually. They are summer migrants that usually arrive in the Whipstick towards the end of October or in early November. They are never numerous, and nest during the Christmas-New Year period.

Red-backed Kingfisher

Although a bird observer for over forty years, only once has a Red-backed Kingfisher (*Halcyon pyrrhopygius*) been observed. This was on 8th October 1967, when a solitary bird was noticed perching on electricity wires at Woodvale, on the fringe of the Whipstick.

Cactus-flower Vigil

by A. G. Fellows*

The following incident occupied one hour of interest-filled attention by two people, as well as myself, all keen on witnessing the opening of a giant cactus blossom from a tightly furled fist-sized bud to a widely-opened flower with reflexed petals, covering the space occupied by my two hands placed side by side. At 7.00 p.m. the bud, though swollen greatly in the previous half hour, showed only a tiny amount of creamy-white between the outer petal edges. At 7.10 p.m. the very tips of the petals—twisted tightly until then—showed signs of untwisting, and at 7.15 p.m. a tiny aperture had opened in the bud's tip, a lead pencil just entering it. At 7.22 p.m. a little finger just entered between the now straightened petals, showing the stigma down in the throat.

At 7.28 p.m., two fingers were able to penetrate without touching the inner petals, while the outer petals were by now lifted, and reflexed well away from the inner ones.

By 7.35 p.m., an aperture showed measuring three inches across, each inner petal separating from its neighbouring ones distinctly, and a multitude of stamens coming into sight surrounding the stigma, but remaining in a ring close to the innermost petals. At 7.45 the flower's aperture was over five inches across between the ring of inner petals, the stigma standing erect, and the stamens separating and drawing nearer to the flower's centre. By now, the depth of the flower could be measured, and from the stamen bases to the inner petal tips showed five and a half inches. All outer petals were now flung right back, the golden interior of the stamen-mass contrasting with the satin white and cream petal exteriors. 7.55 p.m. showed a little wider spread of the flower in general, and at 8.00 p.m. the first nocturnal visitor in the form of a moth arrived. We had stood in awe watching the transformation, carefully timing each change as one or the other noticed it, and taking turns with our flash lamps to keep it under constant observation.

A gentle breeze had moved the flower from time to time, giving the impression that the flower's changing form was a conscious one, but until the hour had passed we did not speak; and then each realized the beauty of the sight called for some comment.

Several flash exposures on colour film have made a record of the flowers opening that evening. This happened a fortnight ago, and that opening bud proved to be the first of a series of rapidly developed buds; and one very recent evening after frantically gathering friends from far and near, at 10 p.m. we all gazed at *ten* widely opened flowers on a scraggy looking cactus plant, dubiously supported by a half-dead "china-apple" bush.

Incidentally, we have always watched this particular variety of cactus when buds formed, as however dry the weather and unlikely our rain signs might be, rain almost invariably does fall as the flowers *close* and never while they are in full display.

An early budding around Christmas time seemed inappropriate here. Two flowers opened at once. Two days later we received a light welcome rain. A *second* bud crop showed while the first flowers were swelling on the eve of their opening, something not seen here before. Then they developed and the ten flowers opened. Rain fell within 1½ miles of this place on the following night and further rain fell until the ragged wrecks of the spent flowers have been deluged only two nights ago. Examining the old plant today, I noticed a *third* set of fast developing buds in evidence. That means approximately ten day's waiting for further blossomings.

If this seems of little importance, why should the plant during some years fail to bloom at all, buds forming maybe, then rapidly turning reddish overnight, to be jettisoned by the plant forthwith.

No rain falls at those times here. Similar behaviour is seen in the so-called "Moonlight" cactus too, with its multitude of sweet-smelling flowers that also only open after dark and are shapeless ragged wrecks by 8 a.m. next day. Fleeting beauty maybe, but of never-ending interest to say the least.

* Charters Towers, Queensland.

Book Reviews

Australian Pond and Stream Life

By John Child

(Published by Cheshire-Lansdowne in the Periwinkle series)

Lightweight cardboard cover, approx. 5″ x 7¼″. 99 pages and 15 pages of colour plates, with 18 half-tone plates and 35 in-text line drawings. Price $1.25.

This book sets out to introduce the beginner to the freshwater environment and some of the interesting forms of plant and animal life found in fresh water. It starts off by discussing the importance of water as the basis for life itself, and then gives the reader a look at the concept of ecology, a web of life with all the features of the environment in and around the pond interacting with each other. After a short description of the practical aspects of collecting freshwater life, the remaining 10 chapters are devoted to a detailed examination of the various forms of plant and animal life to be found in fresh water, ranging from the practically miscroscopic forms such as rotifers and hydroids, to the large water plants, the wide variety of invertebrates such as snails, insects and crustacea, to fish and tortoises. These sections give a very simplified picture of the various groups of animals and plants, of their major divisions and some brief idea of their mode of life. In some cases some attempt has been made to provide brief keys for identification down to family level. The information given is mainly accurate though some errors do occur mostly by over-simplification.

The colour reproduction in most cases is very good, but one or two of the pictures could have been chosen with more care, both from the point of view of the subject and the composition of the picture. Worthy of particular mention is the series of colour plates of frogs. Many of the half-tone plates were also of high standard, although the legends to both colour and half-tone plates could have been improved in many cases.

The book is plainly for the novice only, but should be of use in introducing him to the study of freshwater life.

BRIAN J. SMITH,
Curator of Invertebrates,
National Museum of Victoria.

Venomous Australian Animals Dangerous to Man

Edited by J. Ros Garnet

Published by Commonwealth Serum Laboratories

Approx. 9″ x 6″, lightweight card cover, 86 pages with 12 black and white illustrations. A folded chart showing classification of the Phylum *Reptilia* is appended at the back of the book. Price 95 cents. (Limited publication.)

The opening chapter is devoted to Marine Animals and includes Sea Snakes, poisonous and venomous fishes, Stonefish, the Sea Wasp, and the Cone Shellfish and octopus from the mollusc group.

Centipedes, scorpions, ticks and mites, and spiders form the venomous group of Anthropods; while Australian venomous snakes complete the book, with details of distribution and identification of the more important deadly species, and a good account of first-aid treatment for snake-bite. The treatment of general envenomation is given in the final pages.

This publication should not only appear on the naturalist's bookshelf, but should also find room in all homes to confirm suspicions or allay fears when bites or stings are encountered.

G.M.W.

Hawthorn Junior F.N.C.

Annual Report 1968

Office Bearers at 1st January, 1969:
President—Mr. D. McInnes.
Secretary—Susan Beattie, 2 Clyde Street, Glen Iris.
Treasurer—Jenny Forse.
Excursion Secretary—Ian Knox.
Editor and Club Recorder—Barry Cooper.

Membership showed a gradual but steady decline during the first nine months of the year, but has recently stabilized at about 130.

Meeting attendances have also averaged lower than 1967 with numbers fluctuating from 60 to 135 during the year.

Meeting and Topics in 1968:

26th January—Members' Holiday Exhibit Night.
23rd February—"Sandhoppers, Pillbugs, Fishlice" by Mr. W. Seed.
29th March—"Early Man in Victoria" by Dr. A. Gallus.
26th April—"The Building Stones of Victoria" by Mr. M. Coulthard.
31st May—"A Trip to Tasmania" by Mr. A. Lewis.
28th June—"Potoroos" by Mr. J. Seebeck.
26th July—"Native Pines" by Miss L. White.
30th August—Members' Exhibit Night and celebration of 25th Birthday.
27th September—"Frogs and their songs" by Mr. J. Loftus-Hill.
25th October—"Birds and their songs" by Mr. E. R. Allan.
29th November—"Flowers of the Victorian Landscape" by Dr. G. N. Christensen.

The meetings, this year, have been chaired by various junior members of our Council.

Excursions:

Saturday, 24th February—Rickett's Point (Marine Studies).
Sunday, 3rd March—Gisborne District (Graptolite Fossils).
Sunday, 31st March—Riddell, Hanging Rock (Geology).
Sunday, 28th September—Coimadai—Lerderderg Gorge (General).
Saturday evening, 26th October—Studley Park (Possum spotting).
Sunday, 1st December—"San Remo—Phillip Island" (Marine Life and general).

The Possum spotting excursion was an outstanding success. The attendance was one of the highest recorded, and 27 Brushtail and 13 Ringtail Possums was our tally for about one hour of spotting.

The San Remo-Phillip Island trip was the longest outing organized by the Club in recent years.

Publications:

Our monthly publication "The Junior Naturalist" has completed Volume 4. In February, it was improved with a new cover design, and the use of a more modern typewriter.

The production of additional publications was limited to: "Reptiles and How to Keep Them" by Tim Anderson, as the Club has supplies of other publications left over from other years. This booklet has already paid for itself through sales at the 1968 Nature Show.

Constitution:

In March, the Club decided to apply for postal registration of "The Junior Naturalist". As this was not possible without a Constitution, a special committee was appointed by Council to prepare a draft constitution, which was subsequently accepted by Council and the Club. Its preparation was aided by a drafted sample prepared by Paul Gahan. Postal registration was approved by the P.M.G. in November and our monthly magazine will be registered as from January 1969.

Nature Show:

The Club had six exhibits at the F.N.C.V. Nature Show, held from 26-28th August. These were:
"Embedding Insects in Plastic Resin" by Jenny Forse.
"Metamorphic Rocks" by Leigh Winsor.
"Live Reptiles and Amphibians" by Tim Anderson.
"Gem Cutting" by Gary Wallis and Frank Moore.
"Skulls" by John Bevan and Stephen Wilson.
"Preparation of Plant Section" by Carol Meyer.

The Club was grieved to hear of the death of Mrs. M. E. Freame, Secretary-Treasurer of the Club (1943-1958) on the 7th November, 1968.

Country Club Notes

The Peninsula Field Naturalists Club

(Extracts from the minutes of the Annual General Meeting held in the Frankston Teachers College on 24th July 1968.)

President's Annual Report

I am delighted to report that the Club has shown some signs of advancement during the year, but it is with considerable regret that I record the passing of one of our Vice-Presidents, Mr. A. Park, early in the year.

The speakers again covered a wide range of subjects as follows: Mr. Roy Wheeler—birds; Mr. Fred Rogers—acacias; Mr. John Goode—"Tortoises"; Mr. Le Soeuf—"Butterflies"; Mr. Alan Spillane—"Aborigines of Victoria"; Mr. and Mrs. Salter—"Birds and blossoms"; Mr. Bruce Woodfield—"The work of the Keith Turnbull Research Station"; Mr. A. M. Cobbett—"Vulcanism". In addition to these, Photoflora was presented at the Mornington Civic Centre in March.

Unfortunately the drought seriously affected some of the areas chosen for excursions resulting in cancellation of the scheduled trips. However, trips were made to Cape Schanck, Warneet, The Research Station in Ballarto Road, and Narre Warren North. Thirty-six members and friends enjoyed a week-end camp at Wilsons Promontory, several members jointed the Bird Observers Club in a Bay trip, and some members also took part in a working bee at the Heatherhill Road Sanctuary.

Membership rose by six, to forty. Attendances were also encouraging averaging 29 per meeting—3·5 per cent higher than last year. The attendance of only 90 at Photoflora was disappointing, but did not result in any financial loss.

The finances have fallen by approximately $20 to $73.17. The committee has decided to invest in a better type of projector, from which we will all benefit.

During the year a librarian was appointed. The usual naturalists publications are now available at every meeting. Some textbooks have been donated and further donations of this nature would be appreciated.

I now record my appreciation for the services of the many members who helped throughout the year, at the working bee, at Photoflora, the printing of the Syllabus, the excursion organizers, the librarian, the projector operator, the supper attendant, and last but not least, a very helpful and co-operative committee.

Signed: E. O. Dawson

The following officers were elected for the year 1968-69:

President—Mr. E. O. Dawson.
Vice-Presidents—Mr. A. Spillane, Mr. R. Marriott.
Committee—Mrs. L. M. James; Mr. A. G. House; Mrs. I. House; Mr. W. Ogden.
Publicity—Mrs. E. Gentry.
Librarian—Mr. B. Marriott.
Honorary Secretary—Mr. P. G. Bulfin.
Honorary Treasurer—Miss F. Hoshing.

Since the club was formed, 16 years ago, considerable changes have taken place, not the least of which is the fact that the Shire of Frankston has been reduced in size by the creation of the new and rapidly developing Shire of Hastings. It was felt that the name Frankston no longer indicated the true interests of the club and it was therefore decided that in future it would be known as The Peninsula Field Naturalists Club.

Flowers and Plants of Victoria in Colour

Secretaries, remember that this publication is available to your club members through you. Orders may be placed with the F.N.C.V. Treasurer.

Field Naturalists Club of Victoria

Secretary's Report

The Eighty-ninth Annual Report 1968

The accolades of the year must go to President Allen and Treasurer McInnes; neither of these gentlemen considered themselves talented enough but events have clearly demonstrated their ability.

Sixty-eight has been a quiet year with the new Treasurer concentrating on re-organizing the club's affairs to suit the new administration. The success of his efforts is due to his determination and the professional services of our book-keeper cum subscription secretary Mrs. L. Lewis.

Membership

With the pruning of the unfinancial members we now have 438 ordinary, 277 country, 33 junior and 138 subscribers as against last year's figures of 469 ordinary, 294 country, 32 juniors and 143 subscribers. This decline is partly due to the rise in membership fees.

There is certainly need for a determined membership drive this year.

The year saw the passing of old friends—former president Mr. W. L. Williams, and Mrs. J. J. Freame who did so much for the Hawthorn Junior F.N.C.

Honorary Membership was granted to Mr. A. J. Swaby, Mr. J. H. Willis, and Mrs. M. A. Ball.

Organization

My comment of the '67 report stands: we still find it difficult to get volunteers.

Our Articles of Memorandum allow absent council members to use proxies. We consider this could be useful training for future council members and would be glad to hear from interested people willing to act in this capacity.

It is not generally appreciated that over the past few years the vice-president has been taken on sufferance by people unwilling to let the club down. This office should be a stepping stone for the Presidency.

Nature Show

The unfortunate counter attraction provided by the new Cultural Centre reduced our 1968 attendance from 7,300 in 1967 to 4,953 in 1968.

The lyrebird theme was the centre piece designed as a typical fern gully complete with birds and bird calls while controlled lighting provided the effect of a 24 hour cycle. The Hawthorn Juniors captivated an audience with their demonstrations of gem stones and insects in plastic, while the S.G.A.P. display of flowers and shrubs from all states was superb as always.

Conservation and Wildlife Protection

The year has been a busy one with several new areas of interest coming into the picture. Wychitella was brought to our attention by local people agitating for its preservation as the last of the southern breeding grounds of the Mallee fowl. The tragic death of Mr. Holt has highlighted the need for a National Park or similar reservation on the Peninsula. Interest is now being revived by local naturalists since a survey has discovered a considerable number of Koalas in the Mt. Eliza district.

The most urgent requirement is still a large National Park in the Central Alpine area and recent acquisitions of crown land and river frontages present some concern as to whether we will be too late if we delay much longer.

It was very heartening to see the announcement of a National Park for the Little Desert but disappointing to realize that the size was provisional on the boundaries being defined.

The much debated sewerage project of the Board of Works may still not be the most serious threat to our Baysides. The polluting of Westernport Bay with oil through a leakage from a ship to shore fuel installation followed by the gas blow out on the Marlin rig may be a prelude to more serious ones such as the Californian disaster with 50 miles of coast line biologically destroyed by oil and detergent (ref. Time Magazine, February 14th and 21st issues).

For the coming year our immediate attention is concentrated on the possible reintroduction of the Wombat Bonus after 22nd May.

Cosstick Reserve

This present wildflower reserve of goldfield flora was left to the F.N.C.V. several years ago. During 1968, the C.R.B. acquired one acre for road widening purposes. The compensation thus received has been used to help with the renewal of the fencing.

Medallion

The Natural History Medallion for 1967 was awarded to Mr. G. Whitley, well known as an author, the Curator of Fish, and Historian of the Australian National Museum, Sydney. The Award was presented by Mr. A. Dunbavin Butcher at the May General Meeting.

New Groups

The year also saw the formation and discovery of new groups. Early in the year we were present at the inauguration at Porepunkah, of the Upper North-east F.N.C., which is now affiliated with us.

Mr. Ros Garnet discovered an independent Junior Club—the Pascoe Vale F.N.C., which we hope to encourage.

The Frankston F.N.C. is now known as the Peninsula F.N.C. (See report p. 82.)

In the embryo stage is the formation of a club at Wodonga; and the Victorian Naturalists Union which is an endeavour to co-ordinate clubs into regional groups to facilitate research and conservation.

Publications

The launching of the book *Plants and Flowers of Victoria* was an exciting one. Congratulations go to Mr. J. Baines for suggesting the idea; to Messrs. Cochrane, Willis, Rotherham, and Fuhrer, for the editing and photography; and to A. W. Reed of New Zealand for publishing the book with the club's assistance.

1968 Natural History Medallion Award

It has been learned, during preparation of this issue of the *Victorian Naturalist*, that Norman B. Tindale, D.Sc. has been awarded this Medallion.

Dr. Tindale was Curator of Anthropology at the South Australian Museum from 1928-1965.

FIELD NATURALISTS' CLUB OF VICTORIA

BALANCE SHEET AT 31st DECEMBER, 1968

Liabilities

Year 1967			
$451	Subscriptions paid in advance		$401
288	Sundry Creditors		133
343	M.A. Ingram Trust grant in hand		58
	Special Funds and Accounts—		
3,169	Building Fund	$3,104	
4,100	Publications Fund	4,298	
100	Library Fund	100	
521	Club Improvement Account	538	
200	Excursion Account	200	
5,217	Estate Marion Wright Legacy	5,217	
418	Estate Ruby A. Lewis Legacy	418	
200	Estate Miss I. F. Knox Legacy	200	
1,033	Microscope Project Account	1,048	
—	Flower Book Account	1,164	
			16,287
5,183	Surplus of Assets over Liabilities		6,547
$21,223			$23,426

We report that in our opinion the accompanying Balance Sheet and accounts of the Field Naturalists Club of Victoria are properly drawn up in accordance with the provisions of the Companies Act 1961 and so as to give a true and fair view of the state of the Club's affairs at 31st December, 1968 and of its operations for the year ended on that date, and that the accounting and other records examined by us have been properly kept in accordance with the provisions of the Act.

Melbourne
10th February, 1969

Signed:
Danby Bland & Co.
Chartered Accountants
Auditors

Assets

Year 1967			
$3,388	Cash at Bank	$3,378	
346	Sundry Debtors	1,396	
63	Badges and car stickers on hand at cost	47	
42	Microscope Project Stock at cost	136	
557	Books on hand for sale at cost	538	
—	Flower Book stock at cost	517	
			$6,012
4,218	Library Furniture and Equipment at cost		4,572
	Investment of Funds—		
	Publications Fund—		
1,200	Commonwealth Bonds at Cost	2,200	
	Stocks valued at cost—		
272	Victorian Ferns	231	
901	Victorian Toadstools	834	
708	Wyperfeld National Park	603	
61	Sundry Debtors	53	
958	Cash at Bank	377	
			4,298
	Building Fund—		
2,100	Commonwealth Bonds at Cost	2,100	
1,000	State Electricity Commission Stock at Par	1,000	
69	Cash at Bank	4	
			3,104
	Library Fund—		
100	Commonwealth Bonds at Cost		100
	Legacy Estate Marion Wright—		
5,200	Commonwealth Bonds at Cost		5,200
40	Cosstick Reserve—Maryborough —at cost		140
$21,223			$23,426

GENERAL ACCOUNT

STATEMENT OF RECEIPTS AND PAYMENTS FOR THE YEAR ENDED 31st DECEMBER, 1968

Receipts

Year 1967			
	Subscriptions Received—		
$36	Arrears	$69	
4,286	Current	5,760	
156	Supporting	96	
			$5,925
288	Sales of Victorian Naturalist		370
194	Advertisements in Victorian Naturalist		279
	Interest Received—		
5	Library Fund	5	
126	Bank Account	167	
221	Investment on M. Wright Legacy	221	
			393
12	Surplus from Excursions		—
64	Sundry Income		135
239	Amount transferred from Building Fund A/c. for payment of Rent		227
$5,627			$7,329

Payments

Year 1967			
	Victorian Naturalist—		
$4,275	Printing	$4,018	
1,359	Illustrating	1,040	
410	Despatching	368	
67	Editorial	45	
		5,471	
(1,514)	Less Ingram Trust Grants	743	
			$4,728
	Working Expenses—		
34	Postage and Telephone	170	
40	Printing and Stationery	94	
40	Rent of Room for Storage	40	
45	General Expenses	95	
54	Affiliation Fees, Subscriptions and Donations	14	
15	Preston Junior Naturalists Club Rent	18	
24	Natural History Medallion Expenses	42	
1,180	Typing and Clerical Assistance and (Audit $50)	800	
(922)	Less transfer from Reserved Income	—	
152	Mammal Survey Group Expenses $337	—	
	Less Ingram Trust Grant 337	—	
			1,273
240	Rent of Hall and Library		227
34	Insurance		57
246	Surplus for the year		1,044
$5,627			$7,329

FIELD NATURALISTS CLUB OF VICTORIA

BUILDING FUND

Amount of Fund at 31st December, 1967	$3,169
Interest on Investments and from Bank Account	162
	3,331
Less Amount transferred to General Account for payment of rent	227
Amount of Fund at 31st December, 1968	$3,104

PUBLICATIONS FUND

Amount of Fund at 31st December, 1967		$4,100
Surplus for the year from—		
Ferns of Victoria and Tasmania	$21	
Victorian Toadstools and Mushrooms	24	
Vegetation of Wyperfeld National Park	71	
		116
Interest on Special Bonds and Bank Account		82
Amount of Fund at 31st December, 1968		$4,298

CLUB IMPROVEMENT ACCOUNT

Amount of Account at 31st December, 1967	$521
Nature Show Profit	237
Profit on Booksales	134
	892
Less Books Purchased for Library and cost of binding books	354
Amount of Account at 31st December, 1968	$538

General Meeting

10th February, 1969

Approximately 150 members and guests were present and Mr. E. R. Allan presided. Mr. Allan announced that it was Mr. Woollard's birthday and extended good wishes on behalf of the club.

Moved by J. Woollard, seconded by A. Fairhall that the minutes of the General Meeting held on 30th January, 1969 be adopted and taken as read.

Moved by A. Swaby, seconded by E. Hanks that the proposed new members listed in the *Victorian Naturalist* for February be accepted.

A letter was received from Mr. and Mrs. J. D. Watson expressing their appreciation of two articles, "F.N.C.V. Excursion to Broken Hill" by E. B. King and "Whipstick Nature-Trail" by F. Robbins published in the June and August issues of the *Victorian Naturalist* this past year. They congratulated the authors and recommended the articles as guides for these areas.

Mr. A. Dunbavin Butcher of the Fisheries and Wildlife Department wrote conveying thanks for a donation of $105.00 to the Rylah Research Institute. Two Gould prints, one of the Fruit Bat and another of the Tasmanian Potaroo

have been purchased and will be hung with appropriate plaques attached.

Mr. D. Behring of Upwey has made an offer of the copies for the past ten years of the *Victorian Naturalist* to any interested persons.

A letter was received from Mr. R. J. Lawson, Honorary Secretary, Peninsula Field Naturalists Club on the dearth of conservation projects in the Mornington area and the need for the establishment of parks and sanctuaries in the Mt. Eliza and adjacent areas.

A letter was received from Lt. Col. Dettman, Honorary Secretary, Royal Horticultural Society, advising that space will be provided for societies interested in conservation, natural history, historical, etc., at the National Cultural Centre when proposed plans are completed. It is expected that accommodation for meetings and shows, office and secretarial services be provided and this letter was passed to Council.

Announcements

An enquiry was made regarding the possibility of forming a Junior Field Naturalists Club in the Montmorency area and if there was available some person who could advise or organize this club.

Mr. V. Serventy forwarded a request for a list of conservation societies for publication in "Wildlife" Magazine.

Dr. E. M. H. Ealey of Monash University addressed the meeting on "Echidnee" and also discussed many subjects allied with conservation. He began by remarking on the rate of clearing of forest areas for agricultural and forestry purposes in the Western Districts, notably around Naracoorte and Bordertown. The almost complete devastation of these areas has led to the eradication of the habitat of much native flora and fauna. Because of the rate of growth of world population, estimated to reach 7000 millions by 2000 A.D., such progress is inevitable and associated problems such as pollution become apparent.

Dr. Ealey referred to naturalists and associated clubs as watchdogs of the community and as such should be active as conservation supporters and join with other clubs, not necessarily in complete agreement with their aims, but where mutual interests are compatible. One example of this would be the multi use of areas such as shooting preserves and national parks in one.

He suggested that there was a need for preserving those things that have no monetary value also, and that landholders should be encouraged to leave areas of bush in gullies and on uneconomic land as a habitat for small marsupials and birds. It was his belief that the red kangaroo would not become extinct because of its value, and that farmers could run kangaroos as an added income in conjunction with sheep.

Dr. Ealey stated that research was now being carried out by the Forestry Commission on controlled burning with the idea of preserving the habitat of animals and birds. Controlled burning did not totally destroy all forest litter or burn out the overhead canopy and regeneration was quicker.

An experiment carried out at Daylesford showed little change in the numbers of wildlife and it was believed that forests could support such birds as quail and many other wildlife with certain manipulation.

The question of the frequency of burning has not been finalized because all the results were not known and evaluated.

The wombat bonus was due to be reimposed on 22nd May, 1969 if legislation is not passed. Dr. Ealey was of the opinion that it should not be reimposed and a concerted attempt to sway public opinion be made to prevent this. His suggestion was that after elimination of the bonus, the animal should be removed from the vermin list and control exercised by the Lands Department, thus ensuring only those animals causing trouble are destroyed.

Dr. Ealey concluded his talk with the showing of an excellent and informative film made at the Zoology Department of Monash University. This film showed much of the research being carried out at the Jock Marshall Reserve, including the breeding of Cape Barron Geese, the Brush Turkey, Parma Wallaby and the investigation into the habits of the echidna. The echidna project was of particular interest because of an ingenious method used to locate animals which had burrowed underground, by attaching a small transmitter to their quills so they could be tracked by radio.

The audience was most appreciative of the talk and questions and discussion followed on a number of points raised by Dr. Ealey.

The President expressed the club's thanks to Dr. Ealey for his visit and a very thought provoking address.

Nature Notes and Exhibits

Mr. D. Lee demonstrated a simple, home-made microscope which was very effective and could be easily used by children. He also exhibited a toad.

Mr. D. McInnes showed the blood worm (Chiromonas) and a midge under a stereoscopic microscope.

Mr. K. Trotter showed specimens of the Red-tailed maggots, the vegetable caterpillar (Cordyceps) and a collection of fossil shells mounted in plasticine, found at Princetown near Port Campbell.

Miss K. Hall exhibited two fruits of the Kapok Tree (Cochlospermum) from North Queensland and a specimen of the cottony cushion scale.

Mrs. North showed a piece of petrified wood obtained from Oakey, Queensland.

Mrs. Bennett displayed several branches of the common hemp-bush, (*Plagianthus pulchellus*).

Mr. T. Sault showed an interesting tray of entomology specimens, including beetles, moths and the nest of the sawfly larvae.

Botany Group Meeting

12th December, 1968

Twenty-four members and friends were present and Mr. Fairhall was in the Chair. The meeting took the form of a Members' night. Mr. A. Morrison showed some very beautiful slides, including an exceptionally large bush of Victorian Waratah, also a big patch of *Diuris punctata*, and slides of *Dendrobium speciosum* and *Dendrobium striolatum*, with close-ups of the individual flowers.

Mr. J. Willis spoke of the Mountain Plum Pine (*Podocarpus lawrencei*) which was first discovered in Tasmania and described by J. D. Hooker as a small straggling bush, sometimes rising to a tree 13 feet high. Mr. Willis then described a very large specimen he had found within ¼ mile of the summit of Goonmirk Range which was 30-40 feet high, with a trunk 2 feet 4 inches diameter at 3 feet above the ground. As this is a very slow-growing plant he thought this particular tree must be more than 1000 years old. Mr. Willis also showed two slides, one of a plant endemic to Mount Sonda, Central Australia, thought to be a prostanthera, but now since coming into flower it has been identified as Wrixodia. The second slide was of the only heath in the Northern Territory, Leucopogon (unnamed).

Miss Galbraith spoke of mistletoes which do not grow on trees, with special reference to *Nuytsia floribunda* (Western Australia Christmas Bush), of which she had a fine specimen brought in by Mr. Morrison. She also mentioned Gold-leaf-ed Mistletoe (*Atkinsonia ligustrina*) which does not grow on a tree but is parasitic on other mistletoe.

Miss Lester then organized a very entertaining botanical quiz with eight questions relating to the various talks the group had had at meetings throughout the year. This quiz caused much wracking of brains and considerable amusement.

Mr. Fairhall thanked all who had contributed to the evening and members expressed their appreciation.

Supper was then enjoyed by all present.

Geology Group Meeting Report

5th February

Twenty-three members and visitors attended with Mr. Davidson in the Chair, with the subject for the evening being Holiday Reminiscences. Mr. Wigmore showed slides of Geological features taken on a tour covering Vic., S.A., and N.S.W. These included slides of the Tower Hill caldera, showing the low tuff-ring on the seaward side and a high one on the N.E. side which indicate a S.W. prevailing wind at the time of the eruption. Also slides of the lava caves near Mt. Eccles caused by molten lava flowing out from beneath a solidified crust. Another of an old open cut copper mine at Burra S.A. which operated in 1870 and slides of unusual rock formations at Mootwingee. Miss Bennett showed slides of lava flows from Mt. Napier. This slide clearly showed the tongue of lava which filled a valley cut in Tertiary sediments. Other slides included views of Mt. Eccles and Lake Surprise, Byaduk Caves, and two interesting slides of scoria quarries at Mt. Eccles and Mt. Rouse. These showed thin vertical seams which were concentrations left by the more volatile gases in fumeroles, which are the end product of Volcanic action. Several other members spoke of their activities during the holiday season.

Exhibits

Only the most interesting of a very large collection are described.

Mr. Davidson—Dendritic Chalcedony, Bulong, W.A. Pink Beryl, Lepidolite, Zinnwaldite, Eucryptite, Columbite,

(Londenderry), W.A. Spodumene, Pink and Green Tourmaline, Ravensthorpe, W.A. Pentlandite, Kamalda, W.A.

Miss Bennett—Volcanic Bombs; Mt. Eccles and Mt. Rouse.

Mr. Wigmore—Malachite and Azurite; Burra, S.A. Azurite; Cobar, N.S.W. Galena and Pyrite; Cobar, N.S.W.

Mr. Dodds—Kancar, (limestone concretion); Island in St. Vincents Gulf, S.A.

Mr. Sault—Fossil Leaves, (Tertiary); Narracan, Vic.

Notice for Geology Group Meeting

2nd April

Dr. D. Spencer-Jones (Mines Dept.).

Subject—"The Grampians Range of Western Victoria".

Marine Biology & Entomology Group

3rd February 1969

The meeting was chaired by Mr. Condron, 18 members being present.

Following a discussion which took place at the previous meeting regarding an excursion to Kilcunda, the Excursion Secretary, Miss M. Allender was contacted, the result being that a Club outing to Kilcunda is to take place on 16th February, low water being at 4 p.m. approximately.

Some discussion took place about the staining and rendering transparent of natural history specimens as carried out by Miss Jenny Forse; as it was suggested that she write an article for the *Victorian Naturalist* setting forth the details of this procedure.

As Mr. Strong retires in April, it will be no longer possible to hold our Group Meetings at Parliament House from that month on. Some discussion took place as to an alternative venue. The Secretary is to contact the Herbarium, and also Dr. Brian Smith, Curator of Invertebrates, National Museum, with a view to ascertaining whether it would be possible to meet at either of these places. Miss White kindly offered to lend her home, but it was felt that a more central location would be more convenient for most members. The last meeting to take place in Mr. Strong's rooms at Parliament House will be on 3rd March. As the first Monday in April is Easter Monday, it was decided that there would be no meeting for this month.

EXHIBITS

Mr. McInnes gave a short talk on a pond-collecting excursion to the Botanical Gardens, and the Albert Park Lake which he had led for the Hawthorn Juniors on Saturday, 1st February. He described the condition of the Albert Park Lake which was in a fairly satisfactory state for collecting. He said that some Paraponyx larvae were collected, although these were not as numerous as in previous years. A species of rotifer Asplanchna, which Mr. McInnes said that he had not seen for years, was also collected, specimens of which Mr. McInnes showed under his microscope, together with several other species of microscopic pond-life. Mr. McInnes remarked on the absence of Daphnea, usually abundant at this time of the year.

Mr. Strong showed six limpets of the Acmaeidae family: *Notoacmea scabrillrata*, "The scaly-lined Limpet". These were all collected at Tulum, Westernport Bay, within a few yards of one another, and were displayed to show the great colour variation in this species.

A species of hydrozoa collected by Mrs. J. Watson in Westernport Bay from a depth of approximately 30 feet. This specimen was stained with Haematoxylin, and shown under low microscopic power.

A species of eccada taken on the F.N.C.V. outing to Tooronga Falls, and the larva of a beetle, *Ipsaphes bicolour*, taken from under bark in the same area. This was shown under a stereoscopic microscope.

Miss Jenny Forse showed butterflies in plastic. Miss Forse explained how these were made, and how the bulb portion of an electric light globe was used as a mould.

Mr. Condron showed species of *Ogyris genoveva*. This butterfly is a member of the Lycaenidae family and was taken by Mr. Condron at Tallarook, Victoria. Mr. Condron said that this was one of the few localities in Victoria where it was found. He also showed various species of beetles from Rosebud, Vic., and four different species of cicadas.

Mrs. Lee showed a beetle which she had collected at Mallacoota, which Mr. P. Kelly identified as *Eupoecilia australasiae*. The Fiddler Beetle, a species of the Scarab family. Mrs. Lee also showed, some colour transparencies she had taken of various insects. These were much enjoyed by members.

Mrs. Pinches, who had been on a trip to New Guinea, showed a series of colour transparencies of aspects of life in that country. These proved of great interest to members.

F.N.C.V. DIARY OF COMING EVENTS

GENERAL MEETINGS

Wednesday, 12 March—Annual Meeting at National Herbarium, The Domain, South Yarra; Commencing at 8 p.m.

1. Minutes, Reports, Amendments.
2. Correspondence.
3. Subject for the evening—"Presidential Address", Mr. E. Allen.
4. New Members
   (a) *Ordinary:*
   Mr. Keith Angus, c-o. 104 Ford Street, Ivanhoe 3079. (Interest: Geology.)
   Mr. Geoffrey Butt, 16 View Road, Vermont 3133.
   Miss Mary K. Doery, 20 Tower Street, Mont Albert 3127. (Interest: Zoology and Botany.)
   Mr. Phillip S. O'Connor, Flat 6, 38 Redan Road, East Caulfield 3145. (Interest: Mammals.)
   Mr. Brian V. Timms, Zoology Department, Monash University, Clayton 3168. (Interest: Wildflowers and Marsupials.)
   Mrs. Ethel M. Samuel, 9 Edna Street, Heathmont 3135.
   (b) *Country:*
   Mrs. Margaret J. Carmody, Nariel, Cudgewa, Victoria 3705.
   Mr. C. H. Fleming, Governors Drive, Mt. Macedon, Victoria. (Interest: Microscopy.)
5. General Business.
6. Nature Notes and Exhibits.

Monday, 14 April—Lecture: "Melbourne to Broome via Adelaide", J. Ros Garnet.

GROUP MEETINGS

8 p.m. at National Herbarium unless otherwise stated.

Thursday, 13 March—Botany Group.
Wednesday, 19 March—Microscopical Group.
Friday, 28 March—Junior Meeting in Hawthorn Town Hall at 8 p.m.
Wednesday, 2 April—Geology Group. "The Grampians Range of Western Victoria" —Dr. D. Spencer-Jones.
Thursday, 3 April—Mammal Survey Group Meeting in Library of Fisheries and Wildlife Department, Flinders Street Extension at 7.45 p.m.
Friday, 4 April—Good Friday, No Meeting of Preston Juniors.
Monday, 7 April—Entomology and Marine Biology. No meeting.

F.N.C.V. EXCURSIONS

Sunday, 16 March—Daylesford. This excursion will be led by officers of the Forestry Commission and members will be shown the results of controlled burning. The coach will leave Batman Avenue at 9.30 a.m., fare $2.00. Bring two meals.

Friday, Saturday and Sunday, 25, 26, 27 April—Leongatha and Walkerville. Accommodation has been booked at the Leongatha Motel for Friday and Saturday nights and a visit to Walkerville is on the programme. The motel will cost $5.50 bed and breakfast, dinner is available and members should arrange picnic lunches for the weekend. Coach fare will be $7.00 and should be paid to the excursion secretary when booking.

29 August-21 September 1969—It is hoped to have an excursion to Western Australia at this time if sufficient members are interested. The party would leave by train Friday evening and arrive in Perth on Monday morning. A coach would be chartered and the party would travel to the Geraldton area for a few days, then south to Albany across to Busselton and back to Perth to catch the return train on Thursday arriving back in Melbourne on Sunday 21 September, 1969. Accommodation would be on a Dinner, bed and breakfast basis and members would be responsible for their own lunches. The cost would depend upon the number going but should not exceed $260.00 for train, coach and accommodation. As this trip will be dependent upon enough members wanting to go, those interested should notify the excursion secretary as soon as possible.

Field Naturalists Club of Victoria

Established 1880

OBJECTS: To stimulate interest in natural history and to preserve and protect Australian fauna and flora.

Patron: His Excellency Major-General SIR ROHAN DELACOMBE, K.B.E., C.B., D.S.O.

Key Office-Bearers, 1968/69

President:
MR. E. R. ALLAN

Vice-Presidents: MR. JEFFS, MR. T. SAULT

Hon. Secretary: MR. D. LEE, 15 Springvale Road, Springvale (546 7724).

Hon. Treasurer: MR. D. E. MCINNES, 129 Waverley Road, East Malvern, 3145 (211 2427)

Hon. Editor: MR. G. M. WARD, 54 St. James Road, Heidelberg, 3084.

Hon. Librarian: MR. P. KELLY, c/o National Herbarium, The Domain, South Yarra, 3141.

Hon. Excursion Secretary: MISS M. ALLENDER, 19 Hawthorn Avenue, Caulfield 3161.

Subscription Secretary: MRS. N. E. LEWIS, 1 Billing Street, Springvale 3171. (546 4649).)

Sales Officer: MR. B. FUHRER, c/o National Herbarium, The Domain, Sth. Yarra.

Group Secretaries:

Botany: MISS M. BUTCHART, 23 Loch Street, Hawthorn East 3123 (82 1616).

Geology: MR. T. SAULT, 9 The Avenue, West Rosebud.

Microscopical: MR. M. H. MEYER, 36 Milroy Street, East Brighton (96 3268).

Mammal Survey: MR. P. HOMAN, 40 Howard Street, Reservoir 3073

Entomology and Marine Biology: MR. J. W. H. STRONG, Legislative Council, Parliament House. Melbourne 3002.

MEMBERSHIP

Membership of the F.N.C.V. is open to any person interested in natural history. The *Victorian Naturalist* is distributed free to all members, the club's reference and lending library is available, and other activities are indicated in reports set out in the several preceding pages of this magazine.

Rates of Subscriptions for 1969

Ordinary Members	$7.00
Country Members	$5.00
Joint Members	$2.00
Junior Members	$2.00
Junior Members receiving **Vict. Nat.**	$4.00
Subscribers to **Vict. Nat.**	$5.00
Affiliated Societies	$7.00
Life Membership (reducing after 20 years)	$140.00

The cost of individual copies of the **Vict. Nat.** will be 45 cents.

All subscriptions should be made payable to the Field Naturalists Club of Victoria, and posted to the Subscription Secretary.

Brown Prior Anderson Pty. Ltd. 5 Evans Street Burwood 3125