F.N.C.V.

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The 1969 Wild Flower and Nature Show

Where? The Lower Melbourne Town Hall.

When? Monday, Tuesday and Wednesday, 1st, 2nd and 3rd September, from 10 a.m. to 10 p.m.

This annual show is held by the Society for Growing Australian Plants (S.G.A.P.) and the Field Naturalists Club of Victoria (F.N.C.V.), mainly to bring before both young and older members of our community something of the beauty that surrounds us; as well as some of the rewards that can be ours by following the "Nature Trail".

It is also to make us more aware of the urgent need to keep intact all we can of our priceless bushland.

The flowers on display are all garden grown, and the enthusiastic growers will be most happy to pass on any points about this popular pastime.

A selection of Australian flowers from the Maranoa Gardens, Balwyn, will occupy a separate stand.

This year the central exhibit will be the work and inspiration of the Bird Observers' Club. Here, in a diorama, we will be shown some of the birds we might expect to see around our Melbourne and suburban home gardens, in the Botanic Gardens, and on our beaches.

A bird not found around here, and only recently rediscovered after a lapse of 28 years, the Mallee Whipbird, will be the theme of the 1969 pamphlet.

With the aid of specimens and diagrams the Botany Group exhibit will feature "Algae and Lichens", while diagrams and a collection of fossils arranged by the Geology Group will show "Life through the Ages".

Many groups are showing a keen interest in marine life, and, with the aid of the Museum, a group of Westernport divers researching that area, the Malacological Society, the "Marine Study" Group, and the F.N.C.V. Marine Study enthusisasts are combining to stage a very interesting exhibit.

The Preston Junior F.N.C. is also staging a marine exhibit.

The recently formed Montmorency Junior F.N.C. will show some of the natural history of that area.

The very enthusiastic Hawthorn Junior Field Naturalists will have various exhibits. One member will show an intriguing method of mounting insects in plastic. She is also responsible for an ant farm, and an exhibit which shows the skeletal structure of small animals while retaining the fleshy parts—X-ray animals!

The gem addicts will be busy faceting some semi-precious stones. Others will have collections of shells and of tektites.

Acquatic insects in aquarium tanks will be exhibited by the Entomological and Marine Group.

In glass cases we may see some live examples of our reptiles—snakes, lizards, skinks and tortoises.

Too small to be seen with the naked eye, and hence largely overlooked, is another entrancing natural world. To introduce you to some of this the Microscopical Group will show some examples with the aid of several types of microscopes.

(*turn to page 225*)

The Victorian Naturalist

Editor: **G. M. Ward**
Assistant Editor: **P. Gahan**

F.N.C.V.

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Hyla nasuta, from Gin Gin in Queensland, is one of the frogs listed in "Frog-hunting up the East Coast", the first part of which appears in this issue. The photograph was taken by Densey Clyne.

Here and There in East Gippsland

by VICTOR JACOBS

Ever since the names Suggan Buggan, Wulgulmerang and Mt. Seldom Seen had lured me to this area, and shown me their varied facets, the area had become one of my favourites. I had been back more than once, and twice used the route as a short cut home from New South Wales; but as then had never dragged a caravan over the mountainous roads. There certainly are some roads over which one would not dare to take a 12′6″ van, but this route is not one of them, and with care one can stop, in comfort, in out of the way places. The caravan is not just an eating and sleeping convenience for the family, but storage space for books that one needs if one is to gain the maximum information from observations. A few years ago, two or three books were all that was available to cover the information on Natural History, but now the position has improved to the extent that one may carry a small library.

On 29 December, 1967, just north of Buchan at 5.20 a.m., thick mist and cloud hung low as magpies were calling in the nearby trees, and ravens could be heard in the distance. Bird activity in the immediate area was intense as we observed Kookaburras, Grey Fantails, Brown Thornbills, Yellow-faced Honeyeaters, Brown-headed Honeyeaters and Rufous Whistlers. One adult male and five wrens busied themselves in a briar thicket. Amidst the roadside timber were scattered a few tall hyacinth orchids. Two Crimson Rosellas sat fast in a tall tree as a pair of Brown Flycatchers made a whirling pattern around them. Another flock of the Brown-headed Honeyeaters was seen, and also a male Hooded Robin. A secretive Scrub Wren eluded identification. As I returned to breakfast, two more Crimson Rosellas flew to an easily observed spot in the gum. One was an adult, the other had the all-green back of a juvenile. They sat side by side. Then the young one called and the adult regurgitated some food. It was quite easy to see the neck action and the youngster taking the predigested food. Another call and more food was supplied—in all twelve helpings! Then the youngster set off, closely followed by the other.

After breakfast we headed north and stopped at the W-Tree falls to enjoy the sight of water trickling over the rocks, and were lucky enough to collect a few seeds of *Acacia verniciflua* which grows above the falls. The next stop, a more lengthy one, was made at Leo Hodge's where the honeyeaters were busy on the lovely Grevilleas that grow there. My brother was amazed at their apparent tameness, and was able to fill the whole of a 35mm frame when he took a successful shot of an Eastern Spinebill. Of course they were not really tame, but behaving naturally in the presence of Mr. Hodge. In the very short spell that we were in the garden, they became somewhat cautious, and a second equivalent shot could not be taken.

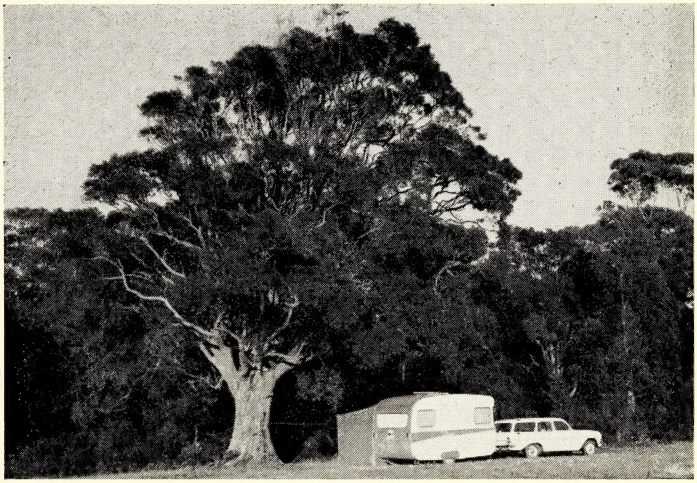
From there we made short time to Wulgulmerang which looked quite different, being decked out for an eques-

trian affair. With Mr. Keith Roger's permission we drove down to the banks of the Little River where we set up camp. That evening we watched fish jumping in the pools in the running river.

A Red Wattle-bird calling from the nearest tree was our alarm clock. More of his "mates" answered from the other trees nearby. Most of the trees in the vicinity of our camp were fine examples of Black Sallee (*Eucalyptus stellulata*) and White Sallee (*E. pauciflora*). A large party of White-winged Choughs were busy in the wooded section half a mile up stream.

After breakfast we left in the car, and our first stop was at Little River Falls on the road to McKillops Bridge. Here there is now ample space to park a dozen cars and a useful track has been cleared to a safe viewing point for the falls. The falls were just trickling. On our walk to the falls we had seen many plants of *Grevillea lanigera*, but none in flower. The effect of the long drought, and the high December temperatures were to cut down greatly the plants in flower this season. A short drive took us to the turn off to the view of the Wulgulmerang Falls to Little River. From the end of the car road a well marked track leads one over boulders, between boulders, and around boulders, to a view of the river valley where the Wulgulmerang Creek should drop its water nearly 1,000 feet. No water was falling but the scenery was spectacular. Some energetic young people had descended to the bottom of the valley and just returned; quite a strenuous effort. There were quite a few splashes of gold made by a slender phyllodinous wattle. When back at camp, our identification using Ewart, named it as *A. penninervis*, and the specimen was discarded: but as that name is now restricted to the Avenel species, a future specimen will determine whether it was *A. obliquinerva* or *A. falciformis*. Another specimen identified was the Elderberry Panax, a handsome plant that had the frightening name of *Tieghemopanax sambucifolius* var *angustifolia*. It was quite frequent in this steep-sided valley.

We moved on to lunch at McKillops bridge. Here the Snowy River was showing much of its sandy bed. The concrete pillar of the bridge had many mud birds' nests, and also masses of



Angophora intermedia— our "living aviary".

photo: Author.

bees nests under the lips of the concrete. *Acacia boormanii* had shed all its seeds, but *A. sylvestis* still had some full pods worth collecting.

As we packed up on the last day of December, Red Wattle-birds and Brown Thornbills worked in the Sallees around us while Spur-winged Plovers and Mudlarks were busy in the open paddock. After saying our goodbyes we headed up Black Mountain, through Suggan Buggan, and up another long pull to cross the Monaro Gap.

The Snowy River soon came into view and we made camp an hour before noon. The Snowy was more bed than river, and rarely as much as two feet in depth but the day was hot, and we soon took advantage of the cool water for frolics and dhobi. The water that normally came down from the Kosciusko area was firstly reduced by the small amount of snow that had fallen during the previous winter, and secondly by the new Jindabyne dam which blocks the river completely except for one small pipe on the lower side discharging a mere trickle of water.

With this mere trickle the Snowy would have been really dry, but luckily the Jacobs River was pouring a good volume of water into it.

In the clearings many Blue Wrens were active, while along the river banks we saw Grey Fantails, Yellow-tufted Honeyeaters, a Pied Currawong, a Nankeen Kestrel and a few Rainbow Birds.

Towards evening we walked up Pine Creek which separates Victoria from New South Wales. The last time we did this, some six years ago, it had been an easy stroll, as for about half a mile the smooth sandy bed was like a well-planned drive. Now very little sand remains and the bed is strewn with boulders of all sizes. *Acacia amoena* is common on the banks, and we were able to collect as much seed as we wished. A dead wombat in advanced state of decomposition appeared to have died because one of its teeth had prevented it from feeding. No seedling pines were seen, but around a large Black Wattle was a minature forest of seedlings. A small dull shadow moving amidst these seedlings became anything but dull when it opened its wing coverts to show a red neck and a dark blue back with light blue dots. It was a Mountain Grasshopper. When the wing coverts closed the camouflage was near perfect.

On the first day of the new year, a fair morning with light cirrus cloud suggested a dawn walk; so at 6 a.m. we headed south along the river banks and bed, following some deeper meanders and fording shallower ones. Kangaroo tracks were common in the softer loose sand. The first birds sighted were a pair of Hooded Robins having a bathe and a preen. We saw many of this species, and also Rainbow Birds which had tunnels in the sandy banks. Many young Silver Wattles grew along the river banks.

Some bright yellow dots gleaming in the sunshine attracted my attention. They were the laden pollen baskets on the legs of bees visiting a mass of Evening Primrose which conveniently for them, had the petals wide open and also the stigmatic surfaces receptively spread. Soapwort was also frequent here.

Attracted by bird calls we scrub bashed a short distance to observe a pair of Rufous Whistlers, a Grey Fantail pursuing a Yellow-tufted Honeyeater, a Golden Whistler and Spotted Pardalotes. Four Black Ducks flying along the river drew us there again where we watched four White-faced Herons standing frieze-like on a bare dead tree. A crimson headed Gang-

gang flew past and called to warn a pair of his species who were drinking from the river.

We crossed to the far bank and headed for Willis. Suddenly a crashing in the scrub startled us a great deal as two emus, with blue necks gleaming, went scudding away. Surprised may be more accurate than startled, as I had mistakenly become used to thinking the emu a bird of the plains. Grey Thrushes and Red Wattle-birds were seen along this section. By the time we reached camp, the sky was fully overcast and threatening, so knowing what these roads can be like when wet, we moved north. Great improvements have been made in widening, straightening and smoothing this road so that we had no bother pulling up Jacob's Ladder to Wallace Craigie Lookout and so on to Jindabyne. But this takes me beyond East Gippsland with a lapse in time but not in activities, for it was at Cotter River that I saw my first pair of Misletoe Birds.

From Bombala and on through Nimmitabel we traversed brown, dry, treeless country in which a single paddock of green oats was most conspicuous. Conditions became more pleasant as we climbed into eucalyptus forest and then down to the rain forest, the Victorian Border, and Cann River where all was pleasantly green. The general drought conditions in Victoria were not prevailing here, where fresh grass and spring flowers were widespread. We ended the day's travel in a roadside clearing 9 miles east of Cann River.

On the morning of 10 January, there was a dawn chorus of Magpies, Kookaburras and one loud harsh Red Wattlebird.

The top soil here was quite damp, and the eucalyptus had new growth. In the open roadside community, Purple Fan-flowers and Coast Rice-flowers were frequent. Less than thirty yards from the road the vegetation change is abrupt, the slope being acute and covered thickly with tall bracken. Here was a patch of seedling narrow-leaved wattles besides the fire blackened trunks of the parents. A White-throated Treecreeper with a rusty rump crept up a gum as a Grey Wallaby crashed off down the gully. Near the bottom of this wet gully was a large area of Pouched Coral Fern, and near to it a Rough Tree Fern with a 6 foot high trunk. Close beside, a giant that had fallen many years since and rotted away, supported many herbs and a number of medium sized shrubs. The bottom of the gully had a running creek, thick Swamp Paperbark, Austral Treeferns and Scrambling Coral Fern. There was another fern too that looked very much like Hard Water-fern.

Back after breakfast, the family helped to shell wattle pods; this time *Acacia botrycephala,* which is plentiful in this area. They were not exactly unwilling with their help, but on the other hand they did not volunteer it either.

From here we moved on to Genoa and Mallacoota, where the first impression of the camping ground seemed the exact opposite from what I expected from a National Park—crowded tents, stores, and noisy boats; but this luckily was only a part of the area. There is a very large area here to choose from, and if one does not mind walking a hundred yards to the facilities, one can have a quiet camp adjacent to the scrub. We chose for our site what at first glance appeared to be a large gum tree, but turned out to be a magnificent specimen of *Angophora intermedia.* Three females and one male Blue Wren were clearing up crumbs left by the last users. Little Wattle-birds called from a nearby Blue-gum. Eastern Spinebills and Black faced Cuckoo-shrikes were also noted. After lunch a South West change brought thunder and 75 points of rain. Three days pre-

viously they had 85 points. No wonder the area was so verdant and pleasant. No wonder that some of the campers were complaining that it was too wet.

It was dull and cloudy at 5.30 on the morning of the next day, but with no wind. From the van site I could see a Grey Thrush, Kookaburras, Pipits and some Yellow-winged Honeyeaters. When a couple of the latter approached the mistletoe over my head, a Little Wattle-bird that was being especially noisy, chased them off. The scrub near to the caravan was composed mainly of *Kunzea ambigua*, young *Angophora intermedia, Eucalyptus bicostata, Acacia longifolia* and *A. mearnsii,* Banksias and *Melaleuca armillaris.* This level scrub plunges into a gully after a few yards, but a path leads to a large open rectangle and I walked this way. The area has been cleared for an extension of the camping facilities but the Kunzea and Banksia are attempting to regenerate. The sides of the square were solidly composed of the Bracelet Honey-myrtle, so often seen in our gardens. This is one of the interests of Mallacoota; to see so many garden plants growing in their wild state. Or should I say *states.* The Bracelet Honey-myrtle for instance reaches a height of 60 feet with a six inch trunk and no lateral branches in the dim sheltered gullies. On cliff tops it often has a mallee form with from seven to ten eight-inch trunks, and a height of 25 feet. On the windswept open beaches it forms a dense interwoven shrub up to 18 feet with leaves only at terminal points, looking as if someone had covered its windswept, dun baldness with a green, silken head scarf. In the sand dunes west of Bastion Point, the only large specimens were dead and burnt, but the young replacements were already five feet tall.

This route led to the cliffs, where in the shoreline trees, Yellow Robins and Grey-backed Silvereyes were as active as the Blue Wrens on the ground; and a dozen Brown Thornbills fed on the mistletoe. The pool inside the sand bar had a pelican floating idly, a fishing cormorant, and a group of watchful Silver Gulls. Here and there, steep, wet gullies intersect the coastal plateau, and I slid down one of these to the beach where I had to negotiate huge masses of decaying seaweed and blackened sand. The smell was atrocious, but that did not deter the feeding gulls that stood in it, or the lively families of Blue Wrens which bounced out of the cliff scrub to peck away amongst the decaying mass. A solitary Crested Tern fished nearby, and occasionally hung on the wind so steadily, that the white dots on the front of the cap were visible. At Bastion Point where the tide was low, many Silver Gulls were working the rocky pools, and amongst them were a dozen Pied Oyster-catchers. Two Sooty Oyster-catchers kept aloof.

On the beach the mauve of Sea Lavender caught my eye, and as I went up the cliff I noticed another familiar garden plant. This was *Correa alba;* in dense bushes five feet high. The ones at the base of the cliff were not in flower, but at the summit they were massed with white stars. This is one correa that does not have tubular flowers. Another shrub with tubular white flowers, red drupes, and shining green ovate leaves remained unidentified until October when I recognized it easily in "Flowers and Plants of Victoria". It was the Sea Box (*Alyxia buxifolia*). From the cliff top I watched a Whimbrel pecking its way along the far beach, and then headed for camp. In one gully that I traversed I saw a new plant species with handsome yellow flowers, the Bladder Ketmia, (*Hibiscus trionum*), and in the next gully Prickly Currant-bush (*Coprosma quadrifida*).

Shrubby Sheoak was common on the level ground.

On the walk back I noted Yellow-winged Honeyeaters, Yellow-faced Honeyeaters, Grey Thrushes, Eastern Spinebills, Rufous Whistlers, Blackbirds and Goldfinches. This had been a rather full pre-breakfast walk.

The following day dawned with a clear blue sky. Our Gum Myrtle was again an aviary, containing a flock of Orange-winged Sitellas, a Willie Wagtail, Brown Thornbills, an Eastern Spinebill, and a couple of Yellow-winged Honeyeaters. I heard raucous cries and saw seven Yellow-tailed Black Cockatoos fly east towards the offshore islands.

Simone and I set off to follow the route of yesterday until we came to Bastion Point. On the leeward and eastern side of the point the rocks shone red in the morning sun, but the windward side was completely blackened with a heavy layer of seaweed flies. The masses of decaying seaweed supply them with food and a place to lay their eggs, but at this moment they were sheltering from the brisk, cool breeze. A piece of rock or seaweed tossed against the black mass would dislodge a few but the whirling, swarming cloud so formed would soon settle again.

Rounding the point, we walked along the clean sea-swept beach watching a solitary fisherman arcing his heavy leads into the light surf. A couple of hundred Silver Gulls and one Crested Tern were also watching hopefully. As we approached, the birds took alarm—the tern leaving first, and then the others, first flying up wind then turning and swooping over the dunes.

We found a plank of driftwood colonized by dozens of stalked barnacles. Some of these animals had stalks 5 inches long, while others had no stalks at all. We propped it up with a stick, the barnacles hanging down, in order to take a photograph. Some of the plates opened to allow the feathery legs to protrude and beat the air. We tried to leave it in the sea but the waves threw it repeatedly on the shore and there we finally left it, feeling relieved that the animals could shut down their hatches and wait till the next tide.

We climbed the dunes and headed back to camp, sheltering from the wind and easing ourselves through the thick young Bracelet Honey-myrtle; and as we moved we flushed Grey-backed Silvereyes and three Little Cuckoo-shrikes; one of them immature.

During the afternoon we drove towards the head of Mallacoota Inlet where there is a magnificent forest of

The bay east of Bastion Point, Mallacoota.

photo: Author.

Coastal Banksia already giving a hint of the beauty of its cones.

A lazy day followed; merely recording the following birds—Grey Thrush, Yellow Robin, Rufous Whistler, Grey Fantail, Scarlet Robins, Golden Whistler, White-throated Treecreeper, Mudlark, Spur-winged Plover, and Red Wattle-bird.

On the succeeding day, I went to one of my favourite watching spots, halfway up a gully just north of our site. Here it was possible to sit on a log and at the same time watch both the birds of the gully and those moving through the leaves at tree top level. In the tree tops a Grey Fantail and a flock of Orange-wing Sitellas fed, while in a clearing half a dozen wrens like blue and brown feathered balls were active. Yellow-winged Honeyeaters sped through the tree tops while Yellow-faced Honeyeaters followed the same route. A Whip Bird cracked out his call. Up the massive trunk of a Blue Gum went a tree creeper with a red rump and a reddish spot behind its ear. In a small gully off the main one, Grey-backed Silvereyes fed on Prickly Currant Bush, while high overhead on the mistletoe an Eastern Spinebill spent a few moments. A familiar yet rather strange call attracted my attention to a shaft of sunlight in the gully where a golden winged bird had appeared. Its mate appeared and I was delighted to see a pair of Rufous Fantails courting and calling each other. The call is similar to the Grey Fantails yet more solid. This was something special so I went to fetch Simone and they were seen again when we arrived back there. Simone stayed a while and in that short time saw Red-browed Finches, White-eared Honeyeaters, Striated Thornbills and Spotted Pardalotes.

That evening a walk in the lightly forested area along the cliffs disclosed a finch-like bird in good viewing position, where it sat so long that my sketches enabled me to identify a Diamond Firetail Finch. Even so I had not seen the scarlet of its rump and tail. In a small nearby pool a White-naped Honeyeater was bathing. In this area there was plenty of Yellow Star and one plant of Apple of Sodom *Solanum sodomaeum*. With a whoosh of wings a magpie sent off a flock of Dusky-Wood swallows using an Angophora as a base. They moved into a large clearing using a slender pole of about 4 inches diameter instead. Only three could fit on the flat top, but up to five more clung to the sides and at least a further four were in flight. There were juveniles with black and white speckled-wings. In some the chest was speckled grey and in some brown. In all the young ones the tail was adult like. The young ones often perched momentarily on shrubs and herbs very close to ground level.

This was our last day at Mallacoota, and on Monday we headed west, still driving through the green belt. This pleasant area persisted untill we passed through Orbost, but before Lakes Entrance the country side became burnt, dry and hot; a state of affairs that persisted for many weeks.

* * *

During the second week in May, 1968, we left Narre Warren North fairly early and proceeded along the Princes Highway to Stratford, then turned north to Briagalong, where on advice we turned off what seemed to be the best road. All of my maps showed a good route from Stratford through Culloden and Cobbannah to Dargo. However this route was not suitable for the van, and we detoured over dirt roads via Stockdale to Fernbank, where we found a good highway running all the way to Dargo. The detour that we took would have been very difficult if it had been raining at all, and I would advise anyone heading for

A "Blow" west of Bastion Point.

photo: Author.

Dargo from Melbourne to continue on past Stratford for 14 miles, and then turn north to Fernbank and on to Dargo.

The country side was green all the way with the rivers flowing. Near Briagalong there were many white Cockatoos. Eastern and Crimson Rosellas, too, were common once we had left the Highway, the former in the level country and the latter in the hills. At Waterford we passed the junction of the Wonnangatta and the Dargo River, which merge here to become the Mitchell River. Soon we sighted the smoke of the wood kiln at Dargo timber mill, and were driving up the main street of that marginal tidy township to cross the bridge and park beside the gently flowing Dargo River. One may ask—why marginal?

It lies on the edge of the highland plateau which seems safe from man's intervention and yet is linked by road to the great metropolis, the great, spreading, greedy monster; linked, yet still untouched by it. Hardly had the van been parked than a dozen or more Blue Wrens were busy around looking for scraps. They were, we thought, all females or young males, but as the days passed and not a fully plumaged male was seen, we realised that all the males in this high altitude must have gone into eclipse plumage.

At dawn on the 14 May, it was raining hard; then at nine o'clock large flakes of snow began to drift down. Within half an hour the locality and the roughness of the encircling hills was softly rounded in white—a pretty scene. At noon however, more rain melted the snow, and we kept as warm and active as we could within the van. Conditions improved in the evening so we took a short walk and again noted many dull plumaged Blue Wrens, as well as numerous Flame Robins. Some Brown Thornbills, Brown Flycatchers and one ground feeding White-eared Honeyeater were also seen.

On the following day, vehicles at the store, which had driven in from the High Plains, were wearing chains, and had caps of snow on roofs and bonnets. Even so we decided to have a look and drove north. On the very edge of Dargo large flocks of White Cockatoos, Pied Currawongs and Crimson Rosellas were active. Three miles north, snow lay on the road and seven miles further on at Spring Hill Junction it lay six inches thick, so we turned the car and walked up the hill. The snow was fresh, soft and powdery, lying on the trees and shrubs, and on a score of tree ferns making them look like native beehive huts. Three Yellow-tailed Black Cockatoos creaked mournfully as they slowly moved through the

tree tops. White-browed Scrub Wrens worked through the undergrowth. A Yellow Robin was seen. We saw many emu and kangaroo tracks in the snow. That afternoon we walked from camp and found a small stream that led into the Dargo River. The junction was thick with weeds, and more Red-browed Finches than I could count were feeding in this small area. One young one investigated me. The banks of the rivulet were a smooth emerald green, with various fungi particularly visible. From a bird watcher I changed into a food collector, and for tea that night we started with watercress (*Nasturtium officinale*) sandwiches and continued with bacon and eggs garnished with field mushrooms, sliced puff-balls, and whole delectable Shaggy Caps.

The next day, the sun was up in a blue sky as Simone and I followed the mushroom trail of the previous evening, collecting enough for a meal and some for home. The first bird we saw was a Scarlet Robin, then many wrens. A thicket of rose bushes was festooned with Crimson Rosellas feeding on the hips. Three bright birds in the tops of some willows looked as if they were part of the normal scenery which was unexpected, because my previous glimpses of King Parrots had been when driving along tortuous mountain roads and they had hurtled past. Here the two males and one female out-sat our watching eyes.

The day was still better than expected after the previous freezing ones, so we drove south towards Waterford and turned right after 5 miles to wind along the Wonnangatta valley. We soon had to stop and reach for the cameras as a magnificent view of Castle Hills filled the western sky. To follow the road to the head of the valley is one of my ambitions, and should be that of anyone who wants to enjoy peace and beauty. The day so far had been far from dull, and just beyond the turn off some large birds fossicking around fallen timber had been identified as four Spotted Quail Thrushes. We had never seen them before. The next day on our way back to suburbia, we saw both the Quail Thrushes and King Parrots again, the former on Peels Gap and the latter near Castleburn Creek. We were able to watch the first group of Spotted Quail Thrushes from the car as they fed and moved oblivious of our presence. The second lot were only seen on the roadside, and as we came to a halt and got out, they rushed out of sight through the scrub.

Identifying new birds from a glimpse is almost impossible, yet if one can peruse a new species at length, some permanent but indescribable pictorial image seems to persist so that a mere split-second sideways gimpse is enough to give certainty at a later date.

A few miles farther on we found a large clearing where we parked till mid afternoon. By now the sun was so warm that it was a sunbathing day. On the nearby river, a tree held a drowsy Pied Cormorant, while up in the gullies White-throated Tree Creepers led me on amidst the numerous young Golden Wattles springing up.

Next day belied the one we had enjoyed, and we headed for home on schedule, our only major stop being at Mr. Cane's nursery at Maffra.

* * *

Have you been to East Gippsland If not, many delights lie ahead of you. Maybe we will see you on the Dargo High Plains which eluded us in May, and are beckoning strongly.

Problems of Wattles Part 2

Wattle Glands

by A. J. Swaby

Wattles with true compound leaves have little pimples on the leaf-stalk or extensions of it. Phyllodes usually have one on the upper edge. The centre of the pimple is depressed and a sticky substance may exude. We call them glands.

For many years the accepted theory has been that the sticky stuff attracts ants and diverts attention from the flowers. Bees, flying from flower to flower, would be more welcome for cross pollination than the slow ants.

Careful observation of Sunshine Wattle over three years does not support the theory. It has very large glands and the exud-tion completely covers the tender leaflets and the tiny clusters of buds. Bees and ants explore the plant, but show no interest whatever in the sticky cover. To us, it is quite tasteless.

Like many others, the tips are red and stop the chemical rays as does the red light in photography. As they toughen and turn green the covering vanishes. It may evaporate, but it does not become liquid on the hottest day. It may be absorbed, but how?

Do any other plants produce a similar cover?

After a year or so, observation might be discussed and reported. Please help.

Some confusion may have arisen from ants on trees. Scale insects eject sugary liquid which may cover leaves like a smear of honey or even be seen in a mist spray covering the ground. Ants enjoy the feast.

Wild Flower and Nature Show (*cont. from page 214*)

There will be a Publications stand where natural-history books, magazines and pamphlets may be purchased. Information relative to the F.N.C.V. may also be obtained there.

Maybe the most popular feature of the Show will be the Wildlife films kindly made available by the State Film Centre. These will be shown frequently and are *free*.

At the August General Meeting of the F.N.C.V. rosters for helpers at the Show will be distributed. As some of the usual "stalwarts" will be absent this year, they hope there will be many members willing to take their places and to fill many others. Though missing, they don't want to be missed! Daytime helpers are especially welcome. The setting up of the Show on Sunday, 31 August, will require all the assistance available from 9 a.m. onwards. Will new members note that this is an excellent opportunity to get to know fellow members.

Also available at the General Meeting will be window cards, car stickers and, for distribution to schools, small posters and bundles of pamphlets. With your help your committee would like every school in Melbourne and the suburbs to receive these. Please advertise our Show as widely as possible.

Admission: Children, 10 cents; Adults, 25 cents.

Frog-hunting up the East Coast
Part 1

by Densey Clyne

During the Summer of 1968 I spent a few weeks travelling up the N.S.W. and Queensland coasts, mainly to record and photograph frogs.

The first six days were spent in the New England District of N.S.W., where I was lucky to have with me on several collecting trips a local naturalist and collector, Jim Frazier, of Armidale. His knowledge and expertise resulted in the capture by daylight of many frogs which I would have missed, as my own practice is to hunt them after dark, tracing them by their calls.

However, some species do call during daylight hours, and one of these is the Sphagnum Frog (*Kyarranus sphagnicola*). On a trip to New England National Park, we heard several males calling from a sphagnum bog in rainforest, and a male and two females were found deep in the moss itself. The call is a single, long note, rather like the sound of a straining ship's hawser, and diminishing in intensity from start to finish.

This is quite a small frog, smooth-skinned and bright tan in colour. When the legs are flexed a continuous dark bar runs diagonally backwards on either side of the dorsal surface of the body, and out across the thighs. Ventrally the colour is reddish-orange.

The male Sphagnum Frog has a rough black nuptial pad on the first (inner) finger. These pads are found on males of many frog species, and probably help them to grasp the slippery body of the female during mating. The first and second fingers of the female have the wide flanges common in frogs with a frothy eggmass. This frog appears to be confined to the locality where we found it.

The only other species in this genus is also found in the district. Very similar in general appearance, but smaller and a little less colourful, *K. loveridgei* differs in both voice and habitat from the previous species, and the male lacks the nuptial pad. The call is short and rather like the grunt of a pig.

Jim had located some of these frogs earlier, in a densely overgrown rainforest creek in the Gibraltar Range National Park, between Glen Innes and Grafton. We parked the van and forced our way through scrub and brambles to the edge of the water, and after some trial and error pinpointed a calling male. This was a very different habitat from that of the Sphagnum Frog; males had to be dug out of holes just above the surface of the water, in the deep, tacky mud which formed the bed and banks of the creek.

K. loveridgei was first reported from rain-forest in S.E. Queensland, and appears to have a restricted distribution.

The Tusked Frog (*Adelotus brevis*) is unique in having a pair of large, tusk-like structures on the front of the lower jaw, inside the mouth. We heard males of this species calling from the margins of creeks in both the New England and the Gibraltar Range National Parks, in both of which places it was located, and at Governor's Waters, a few miles from Armidale. It is a medium-sized frog, dark in colour, the male having a broad head and shoulders—much broader than those of the

The Tusked Frog (*Adelotus brevis*) from New England, N.S.W.

photo: Author.

female. The ventral surfaces are strikingly blotched in black and white, with areas of scarlet on the legs.

The frogs were calling from well-concealed positions under overhanging banks of the creeks, close to or at water level. The call I taped starts off as a single note: "dock!" which gradually changes to a double note, a liquid "dollock!" The second part is like an echo of the first, and heard clearly if the tape is played back at a slower speed.

In most of the places we visited, frogs of the widespread genus *Limnodynastes* were found. The pretty little Spotted Marsh Frog, *L. tasmaniensis* was common around the borders of dams and ponds, calling from the open or under stones at the water's edge. The sound was well described by Moore (*Frogs of Eastern New South Wales*) as "a very rapid 'uk-uk-uk-uk' like a small boy imitating a machine-gun", and it is unmistakeable. Dorsally the frog has large irregular, olive-green blotches, and a light or coloured stripe down the centre of the back. The throat of the breeding male is yellow. Specimens were captured on the Barwick River, New England National Park.

The four or five individuals of its larger relative, the Brown Frog (*L. peroni*)—caught in the New England area differed from specimens in my Sydney garden pond, the latter being striped light and dark brown. The New England individuals, collected from Snowy Swamp near the New England National Park, and from a property at Guyra, were more olive-brown or olive-green. Because of this, and the pinkish dorsal stripe, they were thought at first to be very large specimens of *L. tasmaniensis*. However, the size, the pattern of lengthwise stripes rather than spots or patches, and finally the unmistakeable calls coming later from captives in my Kombi van during the night, clearly distinguished them as *L. peroni*. The call of this species is a single, brief, unmusical "toc", and although at the height of a large chorus it may become elaborated into a series of up to six notes rapidly repeated, it sounds more like a ping-pong ball bouncing, than a machine-gun.

The large, toadlike Banjo Frog (*L. dorsalis*) is the biggest member of this genus. The call is a pleasant twanging note which in chorus becomes one of the most attractive animal sounds I know, and gives rise to this frog's common name and its curious alternative, "Pobblebonk".

From dense reedbeds in Dangar's Lagoon near Uralla, N.S.W., where I camped one night, a guttural, barking "rawk!" was heard, repeated at long

The Golden Bell Frog (*Hyla aurea*) from New Engalnd, N.S.W.

photo: Author.

intervals. I couldn't find the caller but later, camped at Rocky River between Uralla and Armidale, I traced a similar call to a small pool in sand in the almost dry river bed. I found a medium-sized frog with dark dorsal patches, larger and stouter than *L. tasmaniensis*, and generally an undistinguished grey-brown. This was probably the Long-thumbed or Barking Frog, (*L. fletcheri*) but it escaped and so the call could not be positively identified.

The only specimens we found of the Great Barred Frog (*Mixophyes fasciolatus*) were two juveniles, one in the Gibraltar Range and one in the New England National Park. Though these were small enough to retain a vestige of tail, the legs and arms were already cross-barred and the head clearly banded from the front of the snout through the eye to the shoulder. This is a very handsome species, growing to as much as 100 mm long, and adults were recorded and photographed later in southern Queensland.

We heard the Common Froglet (*Crinia signifera*) at Cooney's Creek, and found specimens at Snowy Swamp and at the Barwick River in New England National Park. This is the tiny frog so familiar in roadside puddles after rain, with a high-pitched, interminable chorus of "saw, see-saw, see-saw, see-saw . . . " The individual calls sound rather like an old-fashioned pocket watch being wound up.

Turning over small logs in dry areas around Bullock Creek in New England National Park, we uncovered numbers of *Uperolia marmorata*, the Yellow-spotted Toadlet (misnamed, in my opinion). In several areas they were in the middle of ant communities, the large ants running freely among them.

This is a small species, rather like *Pseudophryne* in general appearance, but distinguished from it by the active movements and by the orange or orange-yellow patches on the anterior and posterior surfaces of the thigh. The rest of the frog is dark brown above with some darker patterning and a lighter coloured triangular area between the eye and the nostril, and dark grey ventrally with a sprinkling of white spots. They were not calling *in situ*, but I recorded them later in Queensland, and the call is a series of brief notes a little like that of *Crinia signifera*.

While I was photographing these frogs in my van, I noticed that they appeared to attract flies. Several times a fly settled on the frog and the frog snapped it up. There is a glandular secretion which appears to cause smarting when it comes into contact with broken skin. Perhaps the flies are attracted by this or some similar substance.

There were usually a few Brown

Toadlets (*Pseudophryne bibroni*) amongst the *U. marmorata* under the logs. In some individuals of this species the yellow patch on the back of the thigh extended right across the cloacal region; in others there was a distinct, well-separated spot on each thigh. One pair found alone together consisted of one of each type, so this appears to be a variable characteristic even within breeding groups.

On another excursion, Jim located a *Pseudophryne* species which I had never seen before, under stones in a damp culvert off the main road through Gibraltar Range National Park. This was Keferstein's Toadlet (*P. coriacea*) which is confined to northeastern N.S.W. and southeastern Queensland coastal regions. The two specimens were among the red, fallen leaves of a *Callicoma* bush, and the dorsal surface of the toadlets was much the same colour as the leaves. This red area was clearly defined by a broad, black band along the sides. The ventral surfaces were chocolate brown and white in the blotched pattern typical of the genus. Brown and yellow blotching has been recorded for the species, but as in other *Pseudophryne* species, the lighter colour probably varies from white through cream to yellow. One of the toadlets was heard making the rather grating call typical of the genus.

I camped one night at Booralong Creek, about 20 miles north-east of Armidale. There was a storm in the late afternoon, and when the rain stopped drumming on the roof of my van some hours later, the night was full of the sound of frogs.

The number of individuals and species made it impossible to record any single call clearly, which was just as well, as my tape recorder had broken down. I had to content myself with observations by torchlight, walking by the deep pools and wading in the stoney shallows. Six species were identified.

The largest of these was the Green and Golden Bell Frog, (*Hyla aurea*), very beautifully patterned with coppery stripes and blotches on green, with blue-green thighs and groin.

Earlier, by daylight, I had seen individuals sitting half out of water among reeds bordering the creek, but their call until now was unknown to me. Moore described it as "wr-a-a-a-ck, wr-a-a-a-ck". Now I heard it for myself. It was a series of guttural notes uttered in quick succession and sounding to me like "wooh-uh-uh-uh-uh-ah!" rising up the scale a little, with the last note the loudest and sometimes long-drawn-out.

Each calling male floated above submerged water weeds out on the open surface of the larger pools. The vocal sac swelled with each component of the call until finally the throat was larger than the frog's abdomen. The abdomen shrank in size as the vocal sac swelled.

At the other end of the scale, both in size and in the pitch of the call, were the tiny brown "Deepers" *Crinia parinsignifera*—which I had already seen while camped at Dangar's Lagoon hiding in tussocks of grass and sedge bordering the water. We heard it also at Cooney's Creek, together with its relative the Common Froglet (or Brown Froglet) (*C. signifera*), from which it is distinguished by the absence of black and white spotting on the ventral surfaces. The call is a shrill, single note, a rather plaintive "Deep!" varied occasionally by a vigorous "g'dip, g'dip, g'dip!"

Almost as small, but bright green or green with brown markings or occasionally light brown, the Dwarf Tree Frog (*H. bicolor*) clung to grass and reeds both in and out of the water of Booralong Creek, calling a

The Dwarf Tree Frog (*Hyla bicolor*) from New England, N.S.W.

photo: Author.

shrill and far-reaching "y-y-y-y-yip-tip-tip, y-y-y-y-yip-tip!" in chorus every few minutes. The male's throat swells to a little transparent bubble and remains inflated between calls.

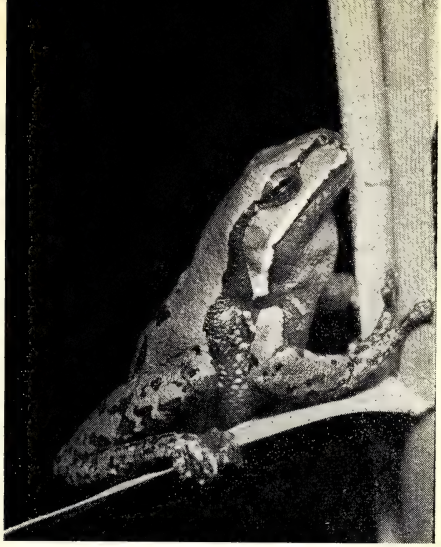
Several Banjo Frogs (*L. dorsalis*) called at intervals from under the banks of deeper pools. The Banjo Frog is a large, toadlike, burrowing species, with a brown, warty back, sometimes patterned with darker blotches, the ventral surfaces being blotched purplish-brown and yellow or white. It is readily identified by the yellow ridge behind the eye and the raised, oval gland clearly visible on the tibia of the leg. It is a hard frog to locate and catch at its calling site, but I have caught several at night in the headlights of my van, heading in the direction of water where other males were calling.

The most strident call at Booralong Creek came from Peron's Tree Frog, (*H. peroni*), calling from shrubs and low branches, further from the water than the other species along the creek. This is a medium sized, attractive frog, with tiny, emerald green flecks on the brown dorsal surface, and bold black and yellow markings in the groin and on the ventral surfaces of the thighs. The dark mottled dorsal surface can change to a very light putty colour.

At close quarters the call of this frog can drown out all other sounds. It has been likened to a jackhammer. It is a long, downward-inflected, rasping call, louder at the end, repeated at irregular intervals. Another call is heard occasionally, consisting of a few notes rising up the scale and ending in a loud, nasal "ach!"

This frog does not usually call in chorus, at least not with any discernible chorus structure, and I have never heard so many together before as there were at Booralong Creek. At the height of the evening's activity there was never a moment when one or two individuals could not be heard.

A species which usually does tend to congregate in large numbers, and was well represented at the creek, is *H. verreauxi*, the Whistling Frog. These small brown frogs call intermittently in daylight, and a shower of rain will set them off. They were the most numerous and noisy of the species I heard at the creek, with long, overlapping calls of "quee-quee-quee-quee-cooee-cooee-cooee!" coming from the grass all over the area. This frog has a broad, irregular dorsal band running back-



Blue Mountains Tree Frog (*Hyla citropa*) from New England.

photo: Author.

wards from about eye-level, some dark spotting on the flanks, and areas of bright red on the thighs of some individuals.

We found three other species of *Hyla* in the New England District. *H. booroolongensis*, named after the same Booralong Creek at which I camped, was common in the N.E. National Park, though we found none at Booralong Creek itself. It is a rather squat, featureless species, dark with some indistinct lighter mottling, and reddish-coloured over the posterior part of the eyelid. The call is described by Moore as a soft, slow, "qrk, qrk, qrk", but I did not hear it.

The Leaf-green Tree Frog, *H. phyllochroa*, was found in large numbers on stones in a creek in the N.E. National Park. These small frogs were dark brown when found, but changed to bright green, and the characteristic golden head stripe stood out clearly. This line runs from the nose to the eye and behind it to varying distances along the side of the body. It is bordered ventrally by a darker line. In some specimens in my Sydney garden a brick-red area extends from armpit to groin. Others have this area more yellow in colour, and the New England specimens tended this way.

The call is a quiet, chuckling, downward-inflected "kek-kek-kek-kair, kair, kair-r-r-r-r!" the "kair-r-r-r" sound is sometimes heard alone and very long-drawn-out at the beginning of the evening's activity, or sometimes intermittently on a hot day.

The Blue Mountains Tree Frog (*H. citropa*) is a larger species, very active, with a short, broad head and proportionately large eyes. These individuals too were very dark brown when caught. Three specimens were taken from under stones at Snowy Swamp and a creek in the New England National Park; two later turned dark green and one light brown. There is an unmistakeable white line along the edge of the upper jaw in this species. A golden-brown line runs from the snout to beyond the shoulder, where it breaks up into blotches. There is some reddish-orange colour in the armpits of some individuals, and also in the groin and on both surfaces of the thigh.

* * *

Part 2 of *Frog-hunting up the East Coast*, dealing with the Queensland section of the trip, will be published next month.

Book Review

Eucalyptus Buds and Fruits

Edited by G. M. Chippendale

Published by the Department of National Development, Forestry and Timber Bureau

Hard cover with dust jacket. Approx. 10″ x 7″; 96 pages of drawings. Price—On application to Forestry and Timber Bureau.

Those who have become familiar with what was known as Leaflet 63 of the Forestry and Timber Bureau, and which has been reprinted many times since the first printing in 1952, will no doubt welcome this most recent addition.

One drawback with earlier publications was of course, the soft cover and awkward size. The present book, however, overcomes this.

259 new sketches are included beyond those appearing in earlier printings, and after consultation, it was decided to omit hybrids, doubtful species, and doubtful varieties.

The illustrations of typical buds and fruits, have been arranged according to the order of Blakely's "A Key to the Eucalypts".

Many of the illustrations are from J. H. Maiden's "A Critical Revision of the Genus Eucalyptus", whilst the balance has been handled by five competent artists.

A complete list of specimens from which the drawings were made appears among the first 24 pages, together with an alphabetical list numbered according to W. F. Blakely's "A Key to the Eucalypts" 3rd edition.

The book is certainly one which deals with a specific subject, and for this reason is useful only to certain groups. However, those within these groups be they students, foresters, or botanists, would find a more valuable book difficult to obtain.

Melbourne's "Canoe" Trees

by Aldo Massola

When Batman first arrived on the Yarra, the tribe which occupied the site of Melbourne and the country stretching from about Cranbourne to Mt. Macedon was the *Woiwurong* (from *Woi* = No, and *Wurong*, = Lip, meaning tongue or speech). This did not mean that they had no speech, but referred to the fact that they were the people whose negative was Woi. In other words, they said Woi for No.

Like all other Victorian tribes, the Woiwurong were divided into a number of sections, each inhabiting a definite tract of territory. The name of the division whose territory was the River Yarra watershed was *Wurunjerri-baluk*, from *wurun*, the river-gum, *jerri*, the grub which lives in that tree, and *baluk*, people. They were thus the River Gum Witchetty Grub People, the name emphasising the fact that they lived mainly where the river gums grew, i.e., the Yarra and its tributaries.

Batman, wanting his famous Deeds signed, had some trouble in contacting the natives. Leaving the present site of Williamstown, he at first ascended the Maribyrnong River, and then cutting across country, eventually caught up with a small group consisting of 8 men and some women and children. In exchange for sundry blankets and knives the men affixed their "mark" to the Deeds, thereby enabling Batman to claim the purchase of some 600,000 acres of land.

This "signing" occurred on the east bank of the Plenty River, to the north-west of Eltham, at about 3 miles above the junction of that river with the Yarra; and not on the banks of the Merri Creek, at the foot of what is now MacLachlan Street, Northcote, where a memorial has been erected.

This, however, is by the way, but it does show that the Wurunjerri in common with all the other sections of the tribe were split into a number of small and widely scattered groups, and that for preference they lived on the creeks and rivers.

After the Settlement was under way, all these small groups gravitated towards Melbourne Town; and because they were "scantily dressed drunken beggars" the missionary and the other officials who were attached to them were ordered to see that the natives did not come into the town, mainly not to offend the prudish mid-Victorian susceptibilities of the fair sex, who would have felt obliged to swoon at the sight.

The natives were thus confined to certain tracts of land, near water and on the outskirts of the settlement, where they set up their mia-mias with bark removed from near-by trees, and made shields and other weapons for sale to Europeans by removing more bark. At these places some of the white inhabitants of the town repaired on warm evenings in their search for diversion after a day's work. Aside from less respectable activities they would sometimes take their families to watch the mock corroborees and sham fights, and the tree-climbing displays staged for their amusement by the "wild blacks" for the sake of some pieces of "white money", i.e. a silver coin, or for some "grog".

The above is tantamount of saying that all the aboriginal trees still extant around Melbourne date after European settlement. This, however, is not quite

correct. I believe that all the genuine canoe trees pre-date white occupation; but that most other "canoe trees", that is the shield and shelter trees, as well as all the "corroboree" trees, are post-European.

It must be emphasised that although generally referred to as such, not all trees bearing bark-stripping scars are canoe trees. The most frequent use of bark was for mia-mias. Since the depth of these lean-tos was about 6 feet, and the height 5 feet, the sheet of bark had be be about 8 feet long and as wide as possible. Moreover, the ends of the sheet were cut square, and not rounded as in the canoe. If this is borne in mind, then the "shelter" trees will be easily recognized.

The second in numerical order are the shield trees. Two kinds of shields were made. One was flat and had an inserted handle. Once having removed the bark, the outline of the shield was marked out on the living wood, and deeply undercut on all sides with a stone axe, until it was loose enough to be forced off with wooden sticks used as levers. The scar on these trees has to be at least 4 feet long and 18 inches wide.

The second kind of shield was only about 5 inches wide and was wedge-shaped in cross section, and its removal left a scar about 5 feet long and 8 inches wide, but quite deep. The scars left by the removal of these shields are easily recognizable because of the size.

The next main use of bark was for dishes to hold the more delicate foods, such as wood-ants, witchetty grubs, and fish. The removal of the small bark platters left an irregular shaped scar. Ants were "cooked" by collecting them on the platter and placing it over the fire. When the ants tried to leave the platter they were driven back by the heat and smoke. After a few minutes of this treatment they would die, and could then be eaten. The grubs were cooked in the hot ashes, and the fish baked in the usual underground native oven. Cooked this way the fish are very tender, and too soft to be held in the hand since they break up. Hence the use of platters.

Somewhat larger irregular scars were left by the removal of bark on which to peg possum skins. These would be fastened to the bark with small wooden pegs or thorns, and when dry were stitched together to make fur rugs.

Next come the roughly circular scars, left by the removal of a "target" by the boys of the tribe. They amused themselves by rolling these discs of bark along the ground to serve as moving targets in toy-spear throwing practice.

Some trees show the scars where a native cut steps to enable him to reach a possum hole. These steps are deep notches penetrating the sap-wood. In rough barks the notches are generally shallower, the climber no doubt using at least some of the rough bark as a foot-grip.

"Corroboree trees" are ordinary trees, and show no marks of any kind. They are in no way related to corroborees, and are not necessary for their performance. Melbourne's corroboree trees simply happened to be close to, and only serve to mark the spot, where corroborees were seen by an earlier generation.

Canoe trees scars are never much less than 8 feet in length, and often 16 feet or more. The width of the scar is always more than 3 feet. For ease of transport, a tree reasonably close to the water was selected, and if possible one with a natural bend, since this made for a deeper hull. The detaching of a canoe was done carefully, and generally entailed the united efforts of several people.

While one was busy marking the

outline of the canoe and cutting the bark with the stone axe, other men or women were engaged in beating the bark all over to loosen it from the tree. The bark for large canoes was kept from falling off and breaking by winding a rope around the trunk while it was being prized off by means of wooden wedges and levers. When detached, the bark was allowed to fall gently by gradually loosening the rope. Sometimes it was necessary to improve the canoe's shape by means of fire or heat, otherwise it was just pegged around its edges to prevent it curling while it was drying. If well cut the canoe could last several months.

Small canoes of the right shape could be used almost immediately, and these were generally made either for crossing a large body of water while on the march, and then abandoned; or for fishing. A forked spear was used for "fishing" in shallow water when the fish were spawning. The fisherman in his canoe would gently float over the fish and pin them to the bottom with his spear. The fish would thus be secured without piercing it, and so spoiling it, much in the same manner that live snakes are caught to-day. Canoes were also invaluable in raiding water birds colonies for the sake of the eggs.

A word may now be said to help the non-specialist to recognize a cut made with a stone axe from one made with a steel axe. The stone axe, even when sharp, was never sharp enough, or heavy enough, nor was the handle long enough, to permit a heavy, incisive blow. Hence the cut is more in the nature of a deep bruise, and is shallow and wide in comparison to the clean, narrow, and deep cut of the steel axe. After a little experience there is no difficulty in distinguishing the blunt cut of the former from the clean cut of the latter.

The removal of the bark left an area which the living bark never completely recovered, but callous growth closed in all around for a few inches over the cut. The tree generally survived the operation.

Before proceeding with the recording of the surviving trees known to me, it is as well to state that I do not claim this list to be complete. These are all the trees known to me, and nothing more. Should anyone know of others, I would be glad and happy to learn of their whereabouts. It will be seen that most of the trees are on the outskirts of Melbourne, on the localities where the Aborigines were congregated in the early days.

The number of trees is contantly diminishing. I knew of trees, for instance in Alma Park, St. Kilda, on the Weatherley Estate, Brighton, and at Reservoir, which have been cut down over the last few years. The dead trunk of a corroboree tree, which stood in the Camberwell Civic Centre, was cut down only recently, (March, 1969). Let us hope that the Council will be good enough to at least erect a little commemorative plaque near where the tree once stood, as was rightly done by the Kew Council when they cut down a tree in Bowyer Avenue. Their plaque states:

> Commemorating the Aborigines and their Craftsmanship. This District, formerly their meeting place, was known to them as "Sand Hill". On this site grew an immense gum tree, from which the Aborigines carved a large bark canoe. This canoe was probably launched on a passing stream, which now flows underground to the River Yarra. 1964.

St. Kilda Junction

An ancient but still living and magnificent gum tree, which grew close to what was once a swamp, can be seen on the north-west corner of the Junction. In the last years of the last century beggarly aborigines could still be seen camping on this reserve. Some

The "Shield Tree", Fitzroy Gardens.
photo: Author.

years ago the St. Kilda City Council had affixed a bronze plaque to the trunk of the tree, stating that "Aborigines of early settlement days congregated and held their ceremonies under and in the vicinity of this tree". Unfortunately the whereabouts of the plaque is not known. It was probably souvenired and sold for scrap metal.

The City Council and the Engineering Department deserve great credit in having spared this tree when re-designing the Junction. Its position was kept in mind when the plans were drawn.

East Melbourne

There is the stump of a gum tree in the Fitzroy Gardens, which bears the scar where a shield, one of the wide variety, was removed. It is a beautiful specimen, and well worth a visit. This stump is quite close to Wellington Parade, but is best reached by walking along the Poplar Path starting at the west end of George Street.

A little further east from the Fitzroy Gardens, but on the opposite side of Wellington Parade, there is Yarra Park, Jolimont. If you park your car at the angle of Vale Street and walk towards the Melbourne Cricket Ground you will see a huge dead gum tree from which bark for a mia-mia was taken, and, a little further on, a living canoe tree, and when close to the Cricket Ground, a living shield tree from which one of the narrow type of shields was taken. The canoe tree, incidentally, bears step marks as well, but these were made with a steel axe.

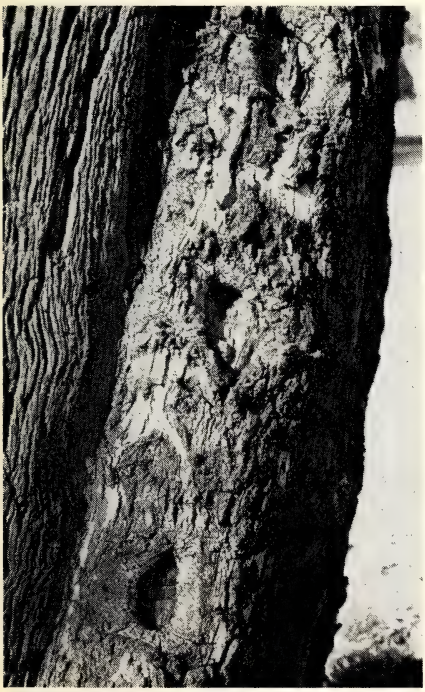
Richmond

Continuing in an easterly direction we next reach what was once known

"Shelter Tree", Jolimont.
photo: Author.

as the Richmond Pound, then the Survey Paddock, then Richmond Park, now the Richmond Golf Course. It is bounded by Swan Street, Loyola Grove, the Yarra River, and the Horticultural College. On it there are several gum trees, most of which bear scars. Amongst them are at least 4 shield trees, and several "platter" trees, but by far the most important is the canoe tree situated not far from the Horticultural College fence. This is a very old dead trunk, leaning forlornly towards the Yarra, with only the butt of a limb left. But the scar on the trunk is that of a magnificent canoe, at least 15 feet long and over 4 feet wide. The fencing off of the paddock will, I hope, help to preserve it.

On the north side of Swan Street, between Park Crescent and the Yarra, and almost in line with the Hawthorn train overpass, there is another group of trees, all of which bear scars. It is difficult, however, to state with precision what was made with the bark removed from them. The largest trunk amongst them is that of a huge dead gum, raised, as it where, upon an earthen circular pedestal. A sign attached to the trunk states:



"Canoe Tree", and "Steps" cut with steel axe, Jolimont Park.

"Corroboree Tree. This tree has been preserved because beneath it the Aboriginal inhabitants held corroborees which were witnessed by white men in the early days of Settlement of this State."

This sign is painted on a wooden board, consequently no one has thought it worthy of being souvenired! But vandals have repeatedly tried to burn down the tree, I myself once arrived just in time to scatter a fire lit at its base. The Richmond Council is to blame for these attempts, as the ground around the tree is often used as a dump for old branches; and the temptation to set them alight must be strong. Richmond Park was a favourite with the last of the Aborigines and even as late as the first years of this century some could often be seen camped there.

Hawthorn

In the little Yarra-side park on the north-east corner of Bridge Road Bridge there is the upright and straight trunk of a gum tree from which a canoe was taken.

This tree was not always in its present position, but was erected here by the Hawthorn City Council as we learn from an affixed board, which states:

"City of Hawthorn. This tree from which the bark was removed by Aborigines for a canoe was in 1930 removed by the Hawthorn Council from the site where it grew on land originally owned by Sir Frederick James Palmer."

In the year 1852 Sir Frederick built "Burwood", which was later sold to George Coppin, and eventually to

Sir William McPherson, who re-named it "Invergowrie". This home, at 21 Coppin Grove, Hawthorn, is now the Invergowrie Homecraft Hostel. The tree was removed from the Hostel's grounds and donated to the Council.

The little Yarra-side park, however, can claim an aboriginal tree of its own: within 50 yards of the canoe tree there is a still-growing gum from which the aborigines removed bark for a wide type shield. It is a perfect scar, but although the callous growth has covered the axe-cuts so that it is difficult to say whether a stone or a steel axe was used, it appears to me by the general contour of the scar that it was a steel axe. It would thus have a post-European date.

Heidelberg

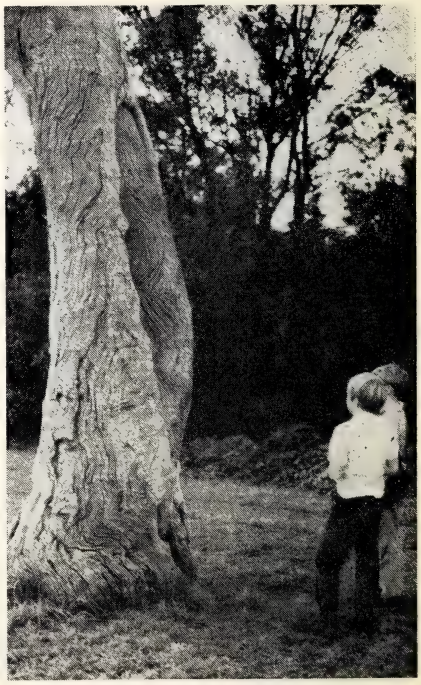
On top of a rise known as "The Outlook", Eaglemont, there is a little reserve, Outlook Reserve. It is between Outlook Drive and Summit Drive, but it is hard to find, being surrounded by houses. Its only access is through an easily missed lane in Summit Drive. On the reserve there is a large dead gum tree, from the bent trunk of which the Aborigines cut a canoe at least 12 feet in length, and, judging by the angle of the bend, of good depth.

Around the trunk and across the face of the scar there are several cuts made with a steel axe. This axe, however, was wielded at a later date, and mainly to enlarge a hollow at the base of the tree, probably in order to reach a rabbit or a fox which had made it its home.

Recent reports indicate that the Heidelberg City Council will shortly begin work to preserve the tree by cementing the hollow at its base and erecting a fence around it. The tree will also receive a tin "cap" to prevent water infiltrating into, and rotting, the trunk.

By this short survey it can be seen that except in the reserves where the Aborigines were confined, and along the course of the Yarra River, there is a scarcity of Aboriginal trees around Melbourne. This, of course, is due to many having been cut down; but at the same time their number was probably never great. The aborigines lived mainly on the water courses where also grew the larger trees which they needed; but the larger trees were also needed by the early colonists for building material.

The surviving few are on public land. They are important relics of Melbourne's pre-history, in fact, the only monuments to the Wurunjerri-baluk, and it is gratifying to see that the City Councils on whose land they occur are generally disposed to protect them, since this will insure their preservation.



"Canoe Tree", Outlook Drive, Eaglemont.
photo: Author.

Readers' Nature Notes and Queries

These columns are available for all members, young and old, to bring before others their own observations in nature, Correspondence may be sent to the Editor, 54 St. James Road, Heidelberg.

Black Swans

At Healesville, Sir Colin Mackenzie Sanctuary, several years ago I watched a pair of swans building a nest, assisted by three young birds from their previous year's clutch.

The female sat on her partly constructed nest, on the edge of the water, while the male and the three young worked out on the water. These three young were at a distance of six to ten feet from the nest, facing outwards, and they were "fishing" for sticks on the bottom. When a stick was located it was lifted out and passed backward over the body and dropped into the water behind it, at the full extent of the bird's neck. These three young birds were working roughly side by side, about two or three feet apart, with their tails towards the nest. The male bird occupied the position between the nest and the young birds, and as one of them dropped a stick back within range of him (the male) he took it and similarly passed it back and dropped it near the edge of the bank. The female stretched down from her position and retrieved the stick and fitted it into the nest. This procedure was carried on for a couple of hours, and the birds kept their respective positions all the time, presumably until they could find no more sticks. The young birds appeared to co-operate willingly, and I saw no evidence of the male forcing them to work in any way.

Any Wolves?

First repsonse to the note in the *Vict. Nat.*, June, 1969, regarding the future of Naturalists' Clubs, came from Mr. R. J. McKay of Western Australian Museum, Beaufort Street, Perth 6000.

He says: "My interest is a systematic revision of the Wolf Spiders . . .

The distribution of these spiders is little known and almost nothing of life histories. Collection is easv with a head torch at night and study will prove very rewarding. I shall identify any mature Wolf Spiders for club members".

Note: Some are plentiful about Melbourne. Specimens could be shown in meetings. "Diamonds" on gravel roads shining in the light of the car headlights should be investigated. Carry a jar and card for capture.

Mutton Bird Deaths

This tragic note comes from Dr. D. R. Blake of Heidelberg in Victoria.

Just before Christmas 1968, I counted 8 dead mutton birds on a half-mile or so of the Airey's Inlet Beach. They appeared to have died over an extended period some being quite recently dead, others nearly skeletons. The cause of death was not obvious, and some appeared to be quite young birds. I thought this number to be rather more than might be expected from casual death in that area and was watching a week or so later whilst we were in the Tathra region, near Bega, in N.S.W. Here I was appalled at counting over 100 dead birds on 2-300 yards of beach and this average was at least maintained if not exceeded over most of the full length of the beach —more than one mile. My wife counted 50 birds in about 100 yards at nearby Moon Bay, and quite a number were evident at Penders beach, also in this region, although I did not count them. I was, however, very relieved to find no dead birds on the Cape Everard beaches in East Gippsland.

I have been out of Australia for several years, and I do not know whether the reason for these deaths of mutton birds has been established; one cannot help wondering whether insecticides are involved. Perhaps you could enlighten me?

Apart from the fact that oil-clogged plumage may be part of the reason; I believe that lack of food in the form of zooplankton may also contribute to such deaths of Mutton Birds. [Ed.]

Field Naturalists Club of Victoria

F.N.C.V. General Meeting

14 July, 1969

An extraordinary meeting was held at the beginning to consider affiliation of Latrobe Conservation Society. This was approved on the motion of Mr. J. Baines and Mr. W. Woollard.

The Herbarium Hall was full and the president, Mr. E. R. Allan, was in the chair.

The President announced the death of the F.N.C.V. Vice-President, Mr. R. W. McKellar, O.B.E., J.P. The said that Mr. McKellar had also been Chief Commissioner for Victoria of the Boy Scouts, after being active with the movement for many years. He was a major in the 2nd World War, and in 1968 was awarded the O.B.E. He was associated with other organizations connected with the printing trade. Members stood for a minute in silence in respect to his memory.

Eight new members, whose names appear in the July *Naturalist*, were elected on the motion of Mr. A. J. Swaby and Mr. T. Sault.

. A letter was received from the A.D.C. to the Governor, saying that Sir Rohan Delacombe will attend the Nature Show on 1 Sept.

The Secretary announced that the Blackburn and Doncaster Tree Preservation Societies are having a Native Plants Show on 11 and 12 Oct., in the Blackburn High School, corner of Springfield and Williams Roads.

On 27 July, the Bird Observers will have a tree-planting excursion to the You Yangs. Many trees were destroyed in the fires of 1968.

Mr. A. J. Swaby stressed the need to work for Naturalist Clubs. He said that Mr. McKay of W.A. Musum has asked if any members can collect Wolf Spiders and send them to him for identification. Mr. J. Strong will supply details.

The subject for the evening was "Field Trips in South Africa", by Mr. Roy McLister. By means of beautiful colour slides, he described his 10,000 miles safari, beginning at Cape Town and visiting the Cape Point Nature Reserve, stocked with animals that do not kill, such as zebra and "bok".

Pictures of masses of colourful wild flowers there, and on Table Mountain, included introduced wattles and gum trees. Caledon National Park showed weaver birds and their nest. Magnificent proteas such as King Protea and *P. cynaroides* (the national emblem), Strelizias, and the introduced flourishing Waratah were shown. Numerous water birds, including flamingos, were to be seen en route to Durban. The strangest desert plant had a bulgy, animal-like body, with short bulgy branches bursting unbelievably into grapevine leaves and, indeed, producing real grapes—a species of Vitus. Large cactus-like plants in flower, flamboyant trees, a Cycad with large, red edible seeds, masses of red, pink and white Mesembryanthemum, and numerous "daisy" types were seen; and a fine slide showed Zulus in Natal.

In the Hluhlowe game reserve, zebras monkeys, white rhinoceros, buffalo dung beetles rolling their cricket ball size treasure, and a big "Cabbage-tree" were shown. In this reserve, the visitor begins the day at 5 a.m. to see the sun rise.

The Kruger National Park of 200 miles by 40 miles showed elephant and a pride of lions. It had been damaged by bad fires and spoiled by tourists.

Victoria Falls, one mile long and 350 feet deep, on the Zambesi River, presented a magnificent sight in several slides taken from different positions. Many hippopotamuses were in the Zambesi River.

From Rhodesia the remarkable tree, *Andansonia digitale* and the beautiful *Leucospermum cardifolium* made striking pictures.

In the Cape of Good Hope National Park, ostriches with their young were shown.

The President thanked Mr. McLister for the all too short talk, and members showed their appreciation by acclamation, and their interest by numerous questions.

The Secretary said he had received a letter from the Ingram Trust approving the use of $262 for printing the Show pamphlets depicting the Western Whipbird. He had also received a letter from Mrs. Kath. Davies asking for support in protesting to the Mordialloc Council against the proposed boating marina costing $1,000,000, which would destroy the most beautiful part of the coast and a fossil bed. The better spot for a marina would be behind the hotel near the river. Regret was expressed that the Port Phillip Authority was not controlling this destruction.

A letter was also received concerning the making of an aquatic sports area at Mooroopna, which would destroy a sanctuary for water birds, and white and straw-necked ibis rookeries. The Council will find out more about it. Mr. Woollard suggested referring the matter to the Bird Observers' Club also.

Mr. J. Strong spoke of a letter he had received from Kangaroo Flat asking about the habitat of the witchety grub, the method of collection by aborigines, manner in which the egg is deposited and seasonal distribution. Any members with information on these were asked to see Mr. Strong. Mr. Ross Garnet said they were often in Casuarinas as well as Wattles.

The Secretary announced that Fisheries and Wildlife officers are building a tower on Seal Rock (near Phillip Island) to observe seals. This will be demolished as soon as the survey is finished.

A discussion of means of cutting costs in producing the magaine will be considered by Council. Mr. F. Zerkler, Miss Young and others presented ideas.

The Secretary recalled an *Age* recent review of a book by Eric Rolls, "They All Ran Wild", $6.75, telling of introduced pests, and the work of Acclimatization Society of 1860, which had even considered introducing monkeys — "baboons in gum trees".

Exhibits

Mr. A. J. Swaby brought a blue *Hakea lehmanniana*, from W.A.

Mr. T. Sault: Azolla and pond life shown under the Binocular Club microscopes and a white fungus (like insect eggs) on rotting wood.

Mr. K. Strong showed sea urchin spines and teeth from "Aristotle's Lantern" under the microscopes.

Miss Ann Forbes brought fruiting *Banksia serrata*, from Yanakie.

Mr. H. Haase showed flowering *Banksia integrifolia, B. ericifolia* and *B. collina*. He reported that cats, dogs and foxes cause damage in his Bayswater garden, and the disappearance of thornbills due to cats taking the young birds from nests, has prevented the pollination and seeding of wattles and other natives.

Mr. J. Baines reported a visit to Monash University Open Day with its exhibit of Little Desert ecology, including the adptation of the Mallee Marsupial Mouse to the absence of water. He emphasized the work of the late Professor Jock Marshall in establishing the reserve which is thriving and includes Cape Barren Geese and Emus; and where experiments are going on. He commended the plantations of native trees and shrubs around the university.

Mr. Fairhall spoke of the Botany Group visit to Maranoa Gardens where fity-six Grevilleas, six acacias, six correas and four banksias were in bloom.

The subject of the evening and the speaker for the next meeting on 11 August will be "Seals of Westernport", by Mr. R. N. Warneke (Senior Research Officer with Fisheries and Wildlife Department).

Miss White: A stone fly from Old Black's Spur Road and some crusader bugs.

Miss J. Forse described how to do plastic embedding of insects, etc., using a ping-pong ball as a mould.

Geology Report

2 June, 1969

The meeting was attended by twelve members, Mr. R. Condron being in the chair.

Annual Election of Office-bearers

Nominations were called for Office-bearers. Mr. R. Condron was nominated by Miss White. seconded by Mr. Kelly, as Chairman. Mr. J. Strong, nominated by Miss White, seconded by Mr. P. Kelly, as Secretary. As there were no further nominations, the above were duly elected for the ensuing year.

Dr. Brian Smith offered to lead an excursion on a Saturday afternoon to the Museum for the purpose of seeing the collections (date to be decided). Dr. Smith also reported that he would have further information about activities of other Marine Biology Groups, which are going to combine with this Group to prepare an exhibit for the Show.

Exhibits

Mr. McInnes. — Three stereoscopic micrscopes which had been purchased for the Club. He explained that these were for use both at General meetings and Group meetings by any member having anything to display. Mr. McInnes had adapted these instruments so that they could be used with transmitted light; also dark-ground if desired. Mr. Strong commended Mr. McInnes on the excellent manner in which he had arranged the dark-ground lighting, which gave a

splendid sharp resolution. Shown under these miscroscopes were a nudibranch collected at Rickett's Point; a species of polychaete worm; a species of the limpet *Cellana tramoserica*, inverted to show gills and mantle; a small millipede; two moth larvae (unidentified); and an unidentified pupa.

Mr. Condron stated that he had been to San Remo where he saw quite a few Wanderer Butterfiies, of which he was able to tag sixteen.

2 *July, 1969*

Twenty-five members attended with Mr. Dodds occupying the chair.

Reports. Mr. McInnes reported on the June excursion to Korkuperrimal Creek led by Mr. J. Myers of Myrniong. The Council trench was the first locality examined. Fragmentary plant remains of Triassic age were obtained. Several hundred yards north-west at Morton's Quarry, fragmentary plant remains were also found, this time of Permian age. Further west Main Quarry was examined. This quarry provided sandstone for building purposes. The party then went along Korkuperrimal Creek examining the basalt flows. These were many and varied; some fine grained and some porphyritic, with phenocrysts of Olivine and Augite. A fine-grained Monchiquite dyke was also examined.

The evening took the form of a Members' Night. Several members contributed, Mr. McInnes beginning by explaining what was to be seen in rock sections he showed under the microscope. Mr. Blackburn showed slides of geological features. Perhaps the two most interesting were of type sections that have been preserved, we hope, for posterity.

The first was of Silurian strata in Moonee Ponds Creek, near Ormond Road. The second was of Tertiary deposits at Northcote.

Mr. Dodds showed slides of the cliffs between Port Campbell and Peterborough. These showed the remarkable sculpture caused by wave action on the calcareous standstone. Other members spoke at length on their exhibits.

Exhibits

Mr. Dodds: Magnesite, Heathcote. Marble, Italy. Fossilized Whale Vertebrae, Dunkeld. Galena and Mica.

Mr. McCay: Nephrite, Rhyolite, Great Barrier Islands, N.Z.

Mr. Blackburn: Stibnite, Stibiconite, Berthierite, Yarra Glen.

Marine Biology and Entomology

5 May, 1969

Twenty-one members attended this meeting which was chaired by Mr. Condron.

The Secretary read a letter from the President of the Club informing him that a decision had been made, on the suggestion of Mr. Swaby, that a Liaison Officer be appointed from each Group for the purpose of more active co-operation between the F.N.C.V. and affiliated Clubs, the latter being in country areas.

Mr. McInnes spoke briefly on the Groups's exhibit at the forthcoming Nature Show.

Dr. Brian Smith suggested that members of the various Marine Clubs work together toward a display under the heading of Museum. Dr. Smith is to be responsible for the work to be carried out. Mr. McInnes suggested that we could have a display of marine life collected at Rickett's Point.

Guest speaker for the evening was Mr. H. B. Wilson, Senior Entomologist, Burnley Horticultural Gardens. His subject was "Locusts and Grasshoppers".

Mr. Wilson started his talk by explaining the difference between the two classes. He went on to describe various species of grasshoppers; told us their history, and differentiated between the harmful and harmless species of each class. As usual, Mr. Wilson gave the Group a a most interesting and informative talk. At its conclusion many questions were asked, and a vote of thanks was moved by Mr. McInnes,

Exhibits

Mr. McInnes described how he had taken the Hawthorn Juniors on an excursion to Rickett's Point for the purpose of conducting a marine survey of that area. Among other things, eight different species of fish were taken; also some sea centipedes.

Miss Dixon: A spider which she brought for indentification, taken from her garden.

Mr. K. Strong: A fossil shark's tooth, locality from which taken unknown.

Mr. R. Condron: Larva of the small Orchard Swallowtail Butterfly, locality Yapeet; a Dingy Swallowtail; some species of Phasmas—a crane fly from Mt. Donna Buang; two long-horned grasshoppers, also from Donna Buang; and a species of longicorn beetle from Mallacoota.

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

GENERAL MEETINGS

Monday, 11 August—General Meeting in National Herbarium, The Domain, South Yarra, at 8.00 p.m.

1. Minutes, Reports, Announcements.
2. Correspondence.
3. Subject for evening—"Seals of Westernport", by R. N. Warneke, Senior Research Officer (Fisheries and Wildlife Dept.).
4. New Members—
   (a) *Ordinary:*
   Mr. A. J. Brook, 42 Hoddle Street, Essendon 3040.
   Mr. R. G. Kerr, 10 Minto Street, East Kew 3102.
   Miss G. Piper, 30 Wattle Valley Road, Canterbury, Vic. 3126.
   Country:
   Mr. N. Macfarlane, Kooloonong, Vic. 3574.
5. General Business.
6. Nature Notes and Exhibits.

Monday, 8 September—"The Coolart Story", by Mr. W. Davis.

Group Meetings

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

Thursday, 14 August—Botany Group. Subject, "Wildflowers of Western Australia" by Dr. Elizabeth Turner.

Wednesday, 20 August—Microscopical Group.

Friday, 29 August—Hawthorn Jun. F.N.C. at Hawthorn Town Hall—Birthday Night.

Monday, 1 September—The Marine Biology and Entomology Group will not meet this month owing to the Nature Show being on the same night.

Wednesday, 3 September—Geology Group.

Thursday, 4 September—Mammal and Survey Group meeting at Fisheries and Wildlife Dept. Library Rooms, Flinders St. Extn., at 7.45 p.m.

Friday, 12 September—Montmorency Jun. F.N.C. at Scout Hall, Petrie Park.

F.N.C.V. EXCURSIONS

Sunday, 17 August—Trentham Falls and Blackwood. This excursion will be led by Mr. B. Fuhrer and will join forces with the Geelong Field Naturalists from lunchtime onwards. The coach will leave from Batman Avenue at 9.30 a.m., fare $2.00. Bring one meal (to barbecue if desired) and a snack.

Friday, 29 August-21 September—Western Australia. Members going should have itineraries by now and all fees should be paid. Members are reminded that the train leaves at 8.40 p.m. Please keep luggage to a minimum as the bus will need unloading and reloading frequently on this trip. Suitcases can be booked through to Perth in the brakevan, but an overnight bag will be needed on the train and this should contain anything required between Perth and Jurien Bay, as we embus at the station.

Friday. 26 December-Sunday, 4 January—Mt. Beauty. A coach has been chartered for this excursion and will be used for day trips to the Bogong High Plains, Mt. Hotham. Accommodation has been booked at the Mt. Beauty Chalet at $6.00 per day for dinner, bed and breakfast, and picnic lunches can be obtained for 50 cents. Members should pay for accommodation individually, but the bus fare of $20.00 should be paid to the excursion secretary by the November general meeting, all cheques to be made out to Excursion Trust.

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-President: 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, Flat 11, "Palm Court", 1160 Dandenong Rd., Murrumbeena 3163 (56 2271).

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

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Affiliated Societies	$7.00
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All subscriptions should be made payable to the Field Naturalists Club of Victoria, and posted to the Subscription Secretary.

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