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# the VICTORIAN NATURALIST

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July, 1969



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Photo: Ken G. Simpson

Weekend Kangaroo shooters killing for dog-meat and pocket money dumped the heads, tail paws and entrails of these Grey Kangaroos (*Macropus giganteus*) beside a highway in Southern central Queensland.

Many similar sights may be seen in other inland areas of eastern Australia, due to the onslaught of unlicensed weekend shooters. Much wilful damage to roadside properties is also done by these irresponsibles who, failing in the prime object, shoot at anything on sight.

# The Victorian Naturalist

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



Vol. 86, No. 7

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The photograph of newly-weaned Elephant Seal pups was taken by J. Bèchervaise at Heard Island.

July, 1969

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# Rearing Orphaned Ringtail Possums in Captivity

by JOHN GOODE

ILLUSTRATIONS BY AUTHOR

*With very few exceptions, it is illegal in Victoria for any private individual to capture or retain in captivity, any species of marsupial.*

*However, there are occasions when young possums are found separated from their mothers in the wild. Ordinarily they would die from exposure or starvation. Similarly, lack of information on techniques of foster care can result in their death.*

*I became interested in rearing ringtail possums when my eldest son found one and brought it home in his shirt pocket. Before that time, I had been interested in rearing other kinds of animals and had been greatly helped in this work by research workers in several Universities. Therefore, when this possum came into my possession, and I expressed interest in techniques for rearing them, the Fisheries and Wildlife Department of Victoria granted permission for them to be kept while observations could be carried out.*

My son found the baby on the ground among some tea-tree scrub on the outskirts of Frankston. When he brought it home, the baby was still considerably nervous and frequently uttered a "high-pitched chirruping twitter . . . used by juveniles of post-pouch age when they have become separated from their mother" (Thomson and Owen 1964).

As the baby seemed happiest in my son's shirt pocket, we decided that possibly it received some warmth from his body and perhaps some semblance of the security of its former parent-young relationship. When the possum no longer chirruped, I thought this had been achieved, especially when the pocket pouch was substituted by another resting on a hot water bag.

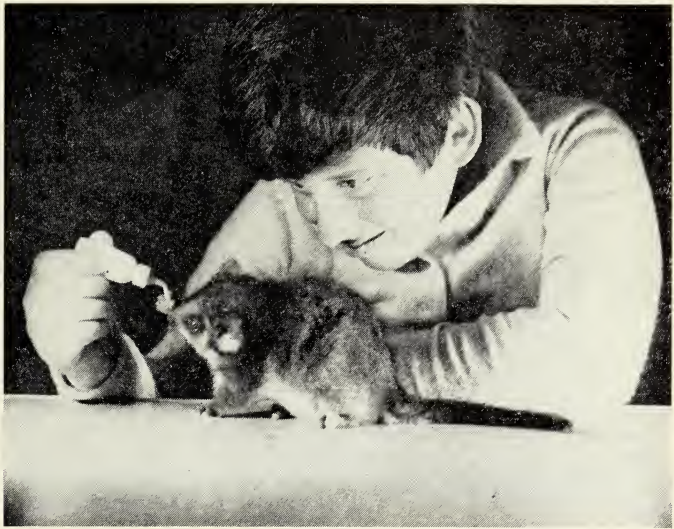
Within 24 hours of the baby arriving, it began to accept food and we attempted to feed it warm fresh cow's milk with a largish eye dropper. This was unsuccessful, but the baby readily accepted sweet apple which it ate greedily.

After more unsuccessful attempts to persuade it to take milk from a dropper, or lap from a saucer, its main diet became apple with the offer of a few native flowers and buds and a few exotic flowers from the garden. To provide liquid, we sprayed the leaves and buds with warm water.

For about a week, the baby possum appeared to thrive and became tame. Then one afternoon, without warning or any preliminary symptoms, it appeared to suffer a fit. Within a minute it was paralysed and prostrate within an hour it was dead. Earlier in the day, it had playfully scampered about the room, had jumped naturally from chair to chair, and had given no indication of any impending illness.

However, subsequent inquiries revealed that with young ringtail possums in captivity, such unpremeditated deaths are common.

After talking to various people used to handling marsupials, I deduced that one or all of the following factors could have influenced the death:



Author's son feeding baby Ringtail, when quite young.

- i. Insufficient heat
- ii. Inadequate and unsuitable feed-appliance
- iii. Incorrect milk diet
- iv. (after rearing several other specimens) what may be the most significant of all factors—the subconscious fear of young, newly orphaned ringtails, and its likely influence on their feeding.

For the future, I therefore worked out the following techniques. Firstly, at all times young orphaned ringtails would be provided for at least a week, or longer if the weather was cold, with a hot water bag against the pyjama sleeve (tied at one end) which we used as a substitute pouch; and the cage was always kept in a heated or sun-warmed room.

The nearest approximation to a marsupial teat is a length of bicycle tube valve rubber, about  $1\frac{1}{2}$  inches long, and we used this in conjunction with a set of plastic doll's feeding bottles, each containing about 5cc of liquid. For its first feeds, we found that one bottle was enough. As the

possum grew larger, two or more bottles could be prepared and kept warm in hot water. Always, the possum was fed as much as it would take.

There is a growing amount of evidence that some constituents of fresh cow's milk are not readily digested by marsupials and a mixture of one part of tinned evaporated milk with two parts of boiled water was devised. This has been fed to all the ringtails we have reared and we have increased the quantity of milk to water, to 50-50 as the ringtails grew older. Fresh cow's milk is never offered in their diet.

With every ringtail we have reared, each has initially been disinclined to accept milk or any other liquid. We therefore devised a technique whereby, from the time a baby is received, it is carried around during the waking hours inside a shirt pocket of one of our children and the shirt in turn is covered by a pullover. By allowing only one child to nurse a possum at this stage, my theory is that he becomes "imprinted" on the baby as its foster parent and I believe that *rap-*



Second of author's sons demonstrating technique of feeding young possum.

port is established very quickly in this manner.

With every possum we have had, the first few feeds have always been rejected either when the possum was offered a bottle with a valve-rubber teat, or its nose was lowered into a small container of milk mixture.

However, within six hours of the youngster's arrival, we ensure that at least 5 cc of milk mixture are fed by the bottle. This usually has to be done by inserting the "teat" into the side of its mouth and squeezing a drop or two at a time into the mouth.

I believe that for some time it is advisable to feed the milk only by bottle and teat, even though the possum may be able to lap. By main-

taining at least one bottle feed a day, it consolidates the feeling of security and the possum—foster parent relationship, both seeming to be vital factors in the successful rearing of young ringtail possums.

Troughton wrote that in captivity, "ringtails will take almost any vegetable or fruit". From my experience in rearing young tortoises, I decided on a regimen of foods which were as close as possible to those which a young ringtail would find in its natural habitat. At Frankston, this is convenient as it is in the Mornington Peninsula "coastal scrub" zone. In the area of our home, there is still much virgin flora with a preponderance of native tea-tree and coastal manna-

Portrait of baby Ringtail possum.





gum. In the right seasons, we also have at least three varieties of acacia and a multitude of flowering native shrubs, including heath, thriptomene, bacon and egg flowers and many others.

Also fuschias, almond blossom, balsam and roses were offered if there were not too many native wild flowers and if the young ringtail was considered old enough to be able to digest them.

Often, young ringtails have been able to take milk mixture from a stainless steel ashtray (ideal for sterilizing) within three days of their arrival, and from their arrival we have always offered them a variety of native blossoms and shoots available in the nearby bush. The varieties depend on the season, because possums have been found both in September and in December-January.

Perhaps, understandably, it has always been advisable to offer a variety of native plants to these youngsters and also to older specimens. Individuals have shown distinct preferences for various types of plants, but they do not maintain interest in the plants they may at first prefer.

For example, one possum consistently refused to touch the flowers of the queen or early black wattle which is exotic in Frankston, but would

readily eat the three species of local wattles when they were available. Always, young shoots of tea-tree were acceptable.

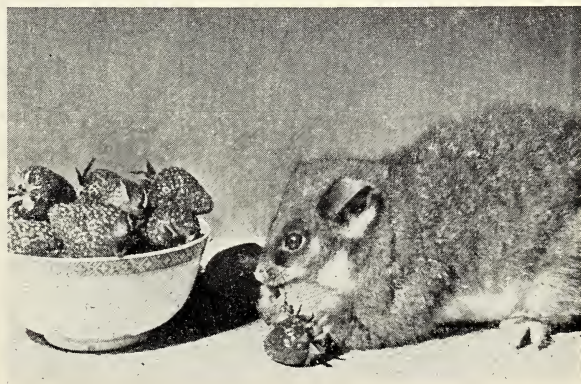
If their cage is sufficiently large, or if permitted to eat and drink outside their cage, ringtails will keep their pouch and its surrounds reasonably clean. Outside the cage, they can be trained to perform their toilet on a piece of newspaper. To counter the rather strong smell of their urine, fresh sawdust, frequently changed, has been found to act as an excellent deodorizer and absorbent substance to use on the floor of the cage.

Despite references in earlier literature to the dislike of these nocturnal animals to strong light, young possums are very active by day and night in captivity. They do not seem to mind indirect sunlight, or romping in a room well lit by electric lights.

From about three months after they have taken regular quantities of solid food, small quantities of non-acid fruit and salad vegetables may be introduced to the young ringtail's diet. Initially a small slice of apple may be offered, or a little ripe (or over ripe) banana, some lettuce and some celery leaves.

As they grow larger, the quantities may be increased and sunflower seeds and dried oatmeal will also be taken.

When older, young ringtails will fearlessly steal strawberries which they enjoy.



At all times, these exotics should be considered as supplementary and the bulk of solid food should be native leaves and flowers.

Morsels of bread smeared with honey are popular, and in time the milk and water may be replaced with five ounces of warm water to which half an ounce of honey has been added and dissolved.

In the wild, Troughton alleged that ringtails have an extremely quarrelsome nature, although later writers have considered them remarkably gregarious.

With ours, aggressive tendencies have been noticed only in one female. Now adult, she was reared from little more than 4 oz. weight and had the run of the house.

When a new youngster, a male in a rat's cage, was brought to us, she heard it chattering and jumped on the cage. Had she not been restrained, she would have attacked and injured the newcomer. At the time we thought this was strange, but later, it seemed that while one might have thought the frightened baby would have appealed to her maternal instincts, it seems that instead, she considered it an intruder into her exclusive territory.

These observations and our successes are only nominal, but the methods described for rearing youngsters have worked in every case except the first. There are now quite a few possums living in the wilds of undeveloped Frankston, which we reared until they were large enough to fend for themselves.

During the course of having possums around the house for several years, it is not possible to think of them without forming impressions on their behaviour, no matter how unscientific their foundation.

Troughton described the behaviour

of ringtails in captivity as showing "pronounced stupidity", while Wood-Jones said they had "unintelligent simplicity".

We have found that in a household of five people, an orphan ringtail will respond to handling from any member of the family, but will escape from any visitor. However, possibly through their keen vibrissae and perhaps their sense of smell, captive possums certainly show constant preference for their "foster parent" in whose care they always seem much more comfortable, even when they have long passed their juvenile phase.

#### ACKNOWLEDGEMENTS

I am deeply indebted to Mrs. Elizabeth Wallace, of Tranmere, South Australia, for information she supplied; and also to officers of the Fisheries and Wildlife Department of Victoria, especially Mr. John Seebeck who initially gave me clues which put me on the right track regarding their care in captivity; and to Mr. Keith Dempster who gave me essential advice regarding the preparation of this account, and was helpful in many other ways. Dr. J. A. Thomson kindly provided reprints of his own papers. Thanks are also due to Mr. T. Rendell, animal technician, Department of Physiology, Monash University, who was also very helpful.

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# Bright Days in Birdland

by A. H. CHISHOLM

What an Australian poet has termed "the clamant life of Spring" was exceptionally potent in most parts of south-eastern Australia during October-November 1968.

Driving through the sub-interior southward from Sydney in mid-October, fringing a lush countryside, I heard everywhere the "wich-a-poo" shouting of Rufous Songlarks and the resonant singing of White-winged Trillers and Rufous Whistlers; and in the Maryborough district of Central Victoria, where I spent several weeks, birds were so numerous and in such good heart that more than 40 species were found breeding.

In one small area alone, the secluded, well-grassed, and tree-girt homestead paddock of Bob Scott, apiarist and conservationist, nests of some 15 species were "laid on": among them being three of the cleverly-hidden chambers of the Rufous Songlark and one of a Little Cuckoo-shrike in an unusual setting—the branch of an introduced pepperina.

Both forested and open areas of the district produced many birds, but, rather curiously, some familiar kinds were either absent or in short supply. Thus, we saw very few examples of the Yellow Robin (or of the Hooded and Red-capped Robins); in the absence of bloom on eucalypts, probably due to the preceding drought, both the common Yellow-tufted and Fuscous Honeyeaters were rare; we neither saw nor heard the berry-eating Painted Honeyeater; and, to our surprise, we failed to find any White-faced Chats.

On the other hand, the expanses of

trees and bushes and shrubs immediately north of the town gave us nests of two very charming singers of the sub-interior, the Crested Bellbird and the Gilbert Whistler, and among additional experiences of consequence were the gaining of two new breeding records for the district and the sight of another species rarely seen there.

In the first place, while Eric Du Bourg was photographing at a Bellbird's nest he was astonished to see a beautiful male Crimson Chat flit into view and then go to a nest in a foot-high shrub. Later, 11 other such nests were found (mainly by Lyle Courtney) in the same general area, each being a fibrous cup placed in a small bush pea, *Pultanea laxiflora*; and later again we learned that this bird of the interior, presumably responding to certain climatic factors, had "exploded" into various parts of southern New South Wales and northern Victoria.

Our Maryborough record was, apparently, the farthest point southward.

Aside from the irruption itself, what astonished me was the fact that the Crimson Chats, normally birds of open spaces, had adopted an area well endowed with ironbark and box trees and bushy growths; and I could only suppose that they had spied out the spot for nesting purposes and chosen it because of its liberal sprinkling of the small pea-bushes. Moreover I was surprised at times by seeing a male bird, after gathering food on the ground and taking it to nestlings, fly aloft 20 feet or so and perch on a tree-branch, there proclaiming its feat with a quaint little "Ting".

Of the 12 nests found, two contained three eggs and the others two each. Most of the young emerged safely; one exception was a nestling which thrust its head through the side of a nest and so, being unable to withdraw, virtually committed suicide. Each young bird, sightless for several days, was flesh-coloured, with an orange gape, and at a quite early stage had a red spot on the rump.

Both adult birds were very attentive to the eggs and young, and when alarmed both were apt to give exhibitions of the "broken-wing trick": a practice which is much favoured by nesting White-faced Chats.

All of the beautiful wanderers vanished the local scene. I am told, before the end of December, presumably taking the young along with them up into the interior. They had been in the Maryborough forest for, perhaps, about two months, and in that time had given much pleasure to numbers of residents.

No less impressive than the presence of the Crimson Chats was the discovery in two instances, in the same area, of an egg of the Black-eared Cuckoo in a nest of the White-browed Babbler.

When, early in November, I took for casual examination two eggs from a Babbler's nest six feet up in a bushy eucalypt, I was surprised to find that one was the dark-red egg of the Cuckoo. That egg much interested local naturalists, and so, later, did the forbidding appearance of the young Cuckoo—blackish, broad-backed, and with strong barbs on the wings.

We were all impressed, too, by the fact that the young interloper, while still sightless and featherless, ejected the young Babbler (whose body was found on the ground below) by throw-

ing it over a two-inch ledge at the nest-entrance. That was, indeed, a remarkable feat.

Meanwhile, one of the Maryborough men, Ted Rich, found another egg of the Black-eared Cuckoo with a Babbler's egg in a nest half a mile or so away. (Normally he would not have troubled to examine those eggs, but was moved to do so by the earlier discovery.) In this case, however, no hatching occurred, for a predator of some kind took both eggs. Predation, too, put an end to the young Cuckoo in the first nest.

These two instances are, as far as I know, the only records of the Black-eared Cuckoo imposing on the White-browed Babbler. Its chief host is the Speckled Warbler, with whose dark-red eggs (laid in a nest on the ground) it finds striking harmony in both colour and size. Curiously, although both of these birds (Cuckoo and Warbler) have only rarely been observed in the Maryborough district, a small company of the little speckled birds of the forest floor was seen, though no nests were located, in the area where the Cuckoo's eggs were found.

Was that occurrence, I wonder, merely coincidence? Or did the Cuckoo spy upon the Warblers and, failing to find them breeding, do the next best thing by adopting the Babbler's?

One other fragment of special interest noted near Maryborough in November was that a pair of the little Whitefaces appeared to cover their eggs with feathers each time they left the hollow stump containing the nest. I have since been informed that the Spine-billed Honeyeater, which builds an open nest in a bush, sometimes acts in similar fashion. Can any evidence on this point be offered?

# Preliminary Notes on Some Short-necked Tortoises from Eastern New South Wales

by JOHN CANN\*

Relatively little information has been published on short-necked tortoises in the genus *Emydura* found in New South Wales east of the Great Dividing Range. Worrell (1963) specifies no species for this area, while Goode (1967) states that only the species *Emydura krefftii* is found in this area, and then only as far south as Kempsey (latitude 31°5' south).

The population described would appear to be geographically isolated from short-necked tortoises of *Emydura* described from eastern coastal Queensland, and from those of the Murray - Darling - Macquarie Rivers west of the Great Divide. At present, the extent of the population described would seem to be bounded in the west by the Great Dividing Range, and in the north by the Ebor River (latitude 30°25' S) and in the south it extends to the Shoalhaven River (approx. 35°S).

Taxonomically, this tortoise has yet to be described and its status and phylogeny determined, and this paper is confined to observations on some aspects of its behaviour and on the comparison of its eggs and hatchlings with those of some other chelid tortoises.

Most of the observations of these tortoises have been made in the Macleay River, N.S.W., where they have been studied both by skin diving and by other methods. To date, more than 300 tortoises have been marked and catalogued and observations are continuing.

\* 26 Yarra Road, Yarra Bay, N.S.W. 2036.

July, 1969

## *Thermoregulation*

On 23 May, 1968 and on 7 July, 1968, water temperatures were recorded at 7°C and 5°C respectively. On both occasions large numbers of these tortoises were observed to be active, which would appear to indicate that they do not hibernate at these temperatures.

## *"Conjugal Fidelity"*

Early observations in 1968 indicated that often, male and female tortoises swam together and subsequent marking of such pairs showed that with one pair marked, they were still swimming together two months after marking. At times, up to eight or ten "pairs" of tortoises have been seen swimming together.

With this population, there appears to be clear sexual dimorphism in the carapace of males and females, which seem to show consistent differences as shown (Pl. 1).

As pairing has been noted at different times of the year, it would appear that this phenomenon is not confined to the possible courtship period and further observations will be made on this aspect of their behaviour.

The size of mature specimens of this group is conspicuously smaller than that known for *Emydura macquari* as may be seen from Pl. 2, with a carapace length of 6.0-6.5 ins (153-165 mm) appearing to be the largest attained by most adults.

## *Nesting and Incubation*

To date, eggs of this new group

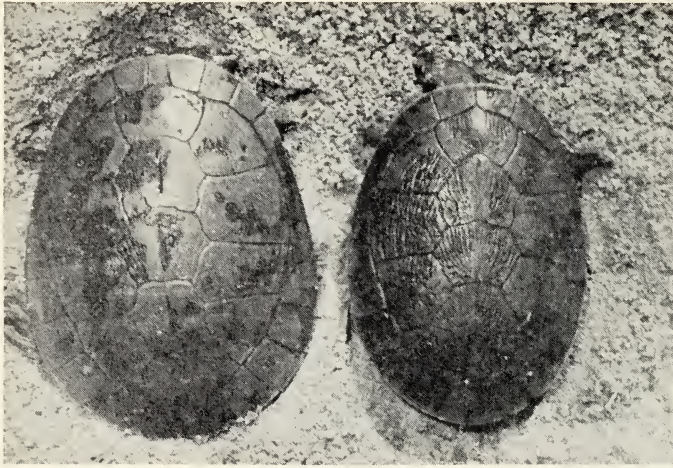


Plate 1.

Eastern N.S.W.  
*Emydura* sp.

♀ ♂  
(Female) (Male)

have been found in only two nests. A typical egg and hatchling are shown in Pl. 3, where the egg had a length of 1.44 ins (36.51 mm) and a cross-section diameter of 0.7 ins (17.85 mm). The young from this nest hatched on 2 February, 1969, and had a carapace length and breadth respectively of 1.11 and 0.905 ins (28.17 and 23 mm). These specimens have been preserved and are now in the collection of the Australian Museum, Sydney.

Differences have been observed between eggs and hatchlings of the eastern N.S.W. *Emydura* sp. and those of *E. macquari* (Pl. 4). However, Goode (personal communication, 1969) states that even within a single species, a wide range of egg shapes and dimensions may be noted, and also between hatchling sizes from a single clutch of eggs.

Eggs of five types of chelid tortoises are shown in Pl. 5. They are from left to right, the long-necked

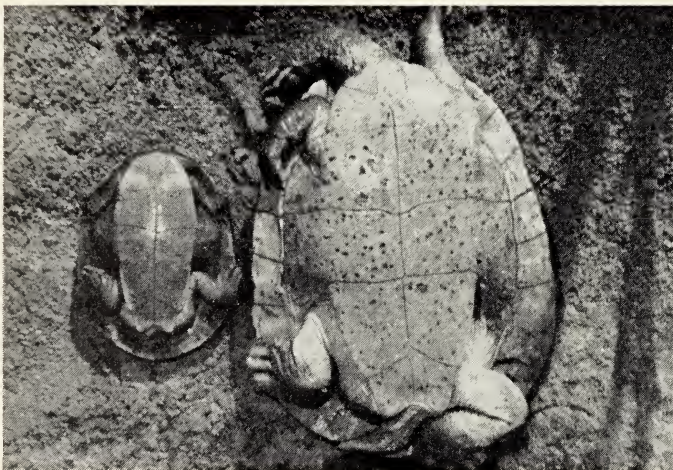


Plate 2.

Left—*Emydura* sp.  
from Eastern  
N.S.W.

Right—*Emydura*  
*macquari*.

*Chelodina expansa*, short-necked *E. krefftii*, *E. macquari* and the *Emydura* from eastern N.S.W., and the long-necked *C. longicollis*.

**Conclusions**

Much further work needs to be devoted to this geographically isolated group of emydurid tortoises from eastern N.S.W. and this is now in progress. Work on their taxonomy and on other aspects will continue and will be published when results are available. At this time, it would appear that the group has been isolated for some considerable period, and while it is not known whether or not it is reproductively isolated from adjoining species of *Emydura*, its small size and the noted differences in egg shape and dimensions, and in hatchlings, would seem to be significant.

**Acknowledgements**

I am grateful to Mr. John Goode for his advice regarding particular aspects of this investigation and for his suggestions on the editing of this paper.

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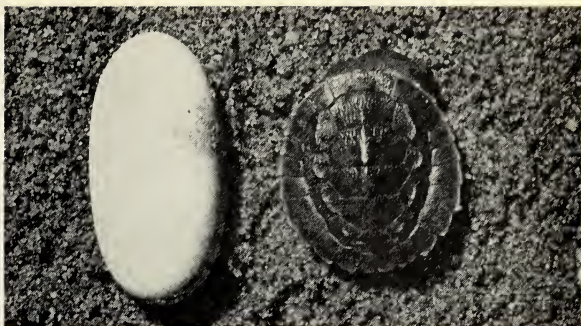


Plate 3.

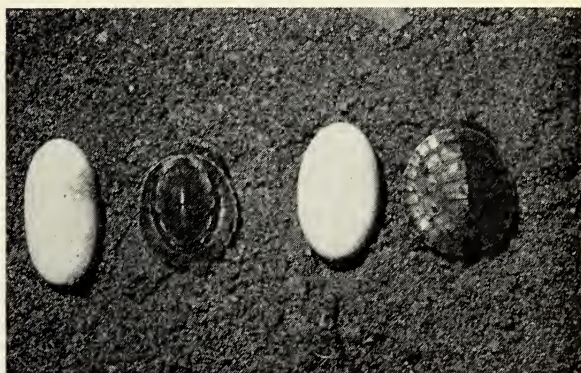


Plate 4.

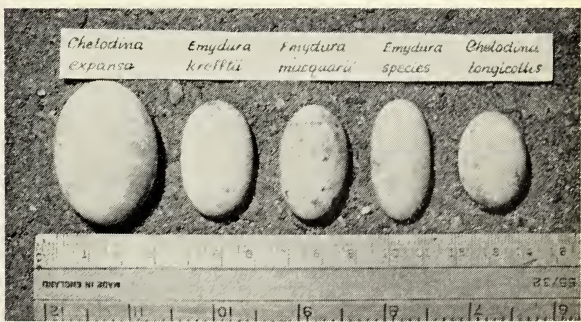


Plate 5.

# FNCV Grampians Excursion, September, 1968

by J. A. BAINES

## Part 2

Wednesday, 4 September—Wonderland trip.

The famous tourist walk is also of much interest to the naturalist, who, just as he prefers geological explanations to the fanciful names given to the formations in limestone caves, is more interested in the geology, botany and entomology than in the comparative implications of such names of features as Grand Canyon, Negro's Head, The Flat-iron, Sphinx Rock, Whale's Mouth, Cool Chamber, Echo Cave and Wall of China, not to mention Silent Street, Lady's Hat, the Cross and Fallen Giant. Plant species of special interest included *Trymalium d'altonii*, *Prostanthera lasianthos*, and *Phebalium bilobum*. A Mallee visitor of 1940 with the appropriate name Overall had left a visible reminder of his visit in huge letters on the rock of Echo Cave. (We saw the ultimate of this practice, much deplored by naturalists and conservationists, on the Sister Rocks near Stawell on our homeward journey.)

The Grampian Mountains, so named by Sir Thomas Mitchell after their namesake in the Highlands of his native Scotland, have been formed as a result of differential erosion of folded sandstones of upper Devonian and lower Carboniferous origin. The sediments are predominantly of freshwater origin, though it is probable that, in Miocene times, the Grampians formed a large promontory which jutted out into the shallow sea that occupied the Murray Basin. The sandstones have, in places, been intruded by por-

phyritic sills and dykes, and by granitic batholiths. Some remarkable rock formations exist, such as the Nerve Test, which no members of our group were prepared to negotiate fully, although the writer remembers the non-chalance with which the late Gilbert Rogers used to demonstrate this in the thirties. The spectacular Wonderland Forest Park has been set aside and managed by the Forests Commission under the provisions of the Forest Act, 1958.

From the Pinnacle, with views of the Mt. Difficult Range, Relph, Mackey's and Bellfield Peaks and of the new Lake Bellfield and Hall's Gap, the track led down to the Sundial turntable for us to rejoin the bus, after noticing in the Stone Kingdom area an endemic boronia (*B. latipinna*), *Correa aemula* in flower, and the fascinating Grampians endemic Bristly Trigger-plant (*Stylidium soboliferum*), with vivid green rosettes and flowering stem only three inches high (not yet in flower, unfortunately, but they are creamy-pink inside and dark red externally). Lunch was taken fairly close to Mushroom Rock. A walk up to Sundial Peak followed, where Gang-gang Cockatoos and a Pied Currawong were seen, and the Grampians endemic parrot-pea, *Dillwynia oreodoxa*, among other interesting plants. From the Sundial lookout there is a fine view over Lakes Bellfield, Fyans and Lonsdale, and over to Mt. William (with the winding road we had traversed earlier) and the Major Mitchell Plateau (which has been described in the *Vict. Nat.* by Iar-



McCann), and a near view of Mt. Rosea, which has a natural stairway on its face. On the way down some bushes of Grampians Heath were much taller than a man.

On the way back to the guest house a call was made at "Belbra" nursery for native plants, kept by the Stantons (Mrs. Stanton was a D'Alton). Many members of the F.N.C.V. party, including some who are keen members of the Society for Growing Australian Plants, bought plants. There were species from all Australian states—South Australia's *Acacia iteaphylla* and N.S.W.'s *A. cardiophylla* (Gawler Wattle and Wyalong Wattle) were noticed, and our own Gold-dust Wattle (*A. acinacea*) was represented by the finest flowering specimen of it any of us had ever seen.

Thursday, 5 September—Black Range and Bunjil's Cave.

The story of Bunjil's Cave has been told (*Victorian Naturalist* 74, 2), and it is most interesting with its record of the original red-ochre-using Buandik tribe, the later white pipe-clay-using Jardwa people from the north, and the impact on the latter of the red-coated soldiery of the early colonial days. Its discovery was belated, mainly because of the confusion of the two Black Ranges. Is it too late to re-name one of them? This range near Stawell could be given a distinctive aboriginal name. (At the same time, why not give the Mt. William near Lancefield the name of the aboriginal tribe who conducted their quarrying activities there, thus distinguishing it from the much higher Mt. William of the Grampians?) Granite boulders outcrop here in profusion, so it was not surprising to find Rock Fern (*Cheilanthes tenuifolia*) covering large areas in parsley-like masses, while also plentiful were Morels (*Morchella conica*) and Scented Sun-  
lew.

The White-faced Chat is sometimes called a Nun, but four nuns not in the bird class were fellow visitors at this time. It was pleasing to find these dedicated women so obviously interested in the geology, ethnology and botany of the area, and also in photography.

In search of the recently discovered aboriginal quarry in the Bellellen district, we were temporarily lost in the Gluepot vicinity, and called at a house to seek information. The owner, Miss Heather Hately, put us on the right track, but, before we left, she gave us the privilege of entering the native tree plantation that had been established by her late father, Mr. Garnet Hately, uncle of Keith Hately of Kiata Lowan Sanctuary. A great variety of shrubs and trees from all parts of Australia, especially eucalypts from Western Australia with their remarkable fruits and differing habits of growth were still doing well, while others obviously needed thinning out, with removal of dead branches. Perhaps the local naturalists could persuade Miss Hately to allow them to help in the restoration and preservation of this unique plantation. Bird observers spent some time watching a Yellow-winged Honeyeater, and also Grey Fantails performing the aerial evolutions that earn them the nickname "Cranky Fan".

The aboriginal quarry rocks were reached after a walk across a sheep paddock, and there were signs of flaked-off artefacts. We then proceeded to our lunch spot at Kelley's Bank beach on the shore of Lake Fyans. This reservoir, of 17,100 acre feet, was completed in 1916, and is part of the great Wimmera-Mallee stock and domestic water supply scheme, the largest of its kind in the world. It is marked on some printed maps nowadays "Lake Fyan", which does a disservice to the memory of Foster Fyans,

who, like Mitchell, served in the Peninsular War, and who, while magistrate at Geelong, when Lonsdale was serving in a similar capacity at Melbourne (Fyansford bears his name in that district), wrote at length of the aborigines, and of the opening up by the squatters of the Western District. Binoculars brought into focus many water birds perching on dead trees projecting from the water, or swimming on the surface. There is some totally prohibited water, but unrestricted boating is permitted on part of the lake. Stawell Yacht Club has a club house, and there is a pump-house for Ararat Water Supply. Mountain Ducks, Black Swans and two Whistling Eagles were observed in a lagoon area nearby.

On return to Hall's Gap, some of us walked up the Clematis Falls track. The writer was first to notice a large koala perched in a comparatively low tea-tree, and the lovable creature soon had a circle of admirers, photographing him or just marvelling at his unconcern, with no fewer than 18 humans coming so close. An unusual feature was the very light colour of the neck fur compared with that of the rest of the body.

This was stringybark and grass-tree country, with some box, peppermint and Manna Gum. The track was very damp, hence the presence of Yellow Marsh-flower (*Villarsia exaltata*) (now to be called *V. reniformis?*). Somehow we missed a turn-off, and the terminal forks of the track we followed did *not* bring us to the falls. (A few later successfully attained the goal on a pre-breakfast walk.)

At night in the Hall's Gap hall a programme of slides was shown for the benefit of all visitors, in aid of Stawell F.N.C.'s fund to buy fencing wire for their sanctuaries, and of course we all went. Slides and commentary were by Ian McCann, with

projection by Neil Bennett. Grampians scenes, mammals, birds, flowers (including orchids), reptiles, spiders, millipedes, etc. and aboriginal sites made up a varied programme. One slide was of Snow Gum, found only on Major Mitchell Plateau, as far as the Grampians are concerned.

After return to Grampians House, many of us enjoyed a long discussion with artist Neil Douglas, who had set up a studio to paint our native wild-flowers not as isolated individual specimens, as has been done by many artists, but in their ecological setting, this, he felt, would express the spirit of our bush more authentically, and he regarded his work as all the more important because so much of the "primitive" aspect was disappearing with the destruction or spoliation of a great deal of our truly Australian environment. The talk finished with discussion of the controversial struggle he is having with the Education Department (at least two of his hearers were headmasters!). Some samples of his work were generally approved when a later invitation to his studio was accepted.

*Friday, 6 September*—Reed's Look-out, McKenzie Falls, and Mt. Victory.

Past the turn-off to Chautauqua Peak, one was set wondering how a mountain in the Grampians could have been named after a lake in upper New York state, U.S.A. The name is Red Indian, and became familiar in Australia in the 1920's when the cultural movement of that name was started here, presumably by Americans from Chautauqua, where it still continues to encourage (as it has since 1874) local programmes of lectures, music and entertainment. Maps of the Grampians, and sign posts, leave out the first "u". Six teenagers were seen climbing the Elephant's Hide, which can become slippery and dangerous after rain. The sign post to

Epacris Falls reminded us that quite a number of names on the map are botanical in origin, some others being Mt. Rosea (after the now superseded specific name of the Rosy Bush-pea), Boronia Peak (which the writer found, on a previous visit, lived up to this name—it was not included in our itinerary this time), Cherry Tree Creek, Clematis Falls and Pansy Falls (the last-named perhaps because of species of *Goodenia*, the old popular name for which was "wild pansies").

At Reed's Lookout a splendid view over the Victoria Valley is obtained, the bronze tablet indicating such features as Paddy's Castle, Moora Moora Reservoir, and Lake Wartook. The fire lookout building is manned by a spotter on 24-hour watch in the summer months, the neat cabin having louvre windows on all four sides, with a string in the centre lined up with numbers to 360 around the walls so that an accurate bearing of the direction of any fire seen may be sent out to fire-fighters of the Forests Commission.

The track down to McKenzie Falls leads first to Broken Falls, then to Drummer Falls, and finally to the main McKenzie Falls, which are among the state's most impressive. Necklace Fern, King Ferns and Coral Ferns were prominent, and at least five species of *Acacia*, four of *Leptospermum*, and two of *Coprosma*.

Lunch was taken at Lake Wartook, the first of the many reservoirs to be constructed (1887). Its capacity is 23,800 acre feet, and the city of Hortham draws its town supply from it. After a walk along the dam bank, it was a delight to watch the rich bird life along the creek, especially a number of Flame Robins. A resident officer of the State Rivers and Water Supply Commission said that there are at present no koalas on the sanctuary island in the lake, but early re-stocking is intended.

The bus returned to Reed's Lookout, from where an enjoyable walk was done to the Jaws of Death on Mt. Victory, and many of the party were photographed on the *pièce de résistance*. Near Pulpit Rock there were masses of Golden Heath (*Styphelia adscendens*), and near Coronation Chair much *Epacris impressa*, mostly in the pink form but sometimes in the white. Two scorpions and a Copper-tailed Skink were seen. A misunderstanding about plans after visiting The Balconies caused a three-man search for an apparently "lost" member of the party. Back to the guest house and Madge Lester and Marie Allender's anagram game (or scrabble, or a tough crossword) for those not keen enough to join the botanical sessions!

*Saturday, 7 September*—Dick Morrison, George Collis, Ruth Doig and the Parkins climbed to the summit of Chautauqua Peak before breakfast. They saw six kangaroos, two of them fighting. Later they found the right track to Clematis Falls. The peak was shrouded in cloud, and the day was inclined to be drizzly. After breakfast, the bus took us past "Glenbower" (old home of the D'Altons) to Borough Huts. A botanizing stop was made at the diversion weir of Stawell Water Supply, where were found Orange Bell-climber (*Marianthus bignoniaceus*) (endemic in the Grampians, but not in flower), Plumed Humea (formerly *H. elegans* but now *Calomeria amaranthoides*), Umbrella Fern and other interesting species. Driving past the watershed between the Wannon River (flowing south into the Glenelg) and the Fyans Creek (flowing north), we stopped to search for Emu Wrens in heathland, but in vain. Purple Eyebright (*Euphrasia collina*) was quite plentiful. What was thought to be a yellow planarian worm was found, and holes seen that could

have housed the so-called "White Shrimp" of the Grampians (*Phreatoicopsis terricola*), which is a crustacean more closely related to the slaters of our gardens, but which, endemic in the Grampians, and in parts of the Otways, is close to a fossil form found in Triassic beds in New South Wales, i.e. is practically unchanged after 170 million years! (For further information on this creature, see the article by Ian McCann in *Geelong Naturalist*, Vol. 5, No. 1, April 1963. This issue, and the preceding one, contain excellent articles, too, on the Grampians flora.)

After a view of Mt. Lang and Teddy Bears' Gap, the bus arrived at Jimmy's Creek, where members of Ararat F.N.C. met us, notably the president, Rev. Colin Burtt, Cyril and Mrs. Larmoor, Misses Zoe and Lorna Banfield (the latter wrote a history of Ararat), Stan and Mrs. Kelly, and Susan Jutte (Botany Department, La Trobe University). Stan Kelly, author of "40 Australian Eucalypts in Colour", an excellent collection of his water-colour paintings published in 1949, will have published during 1969 a larger book illustrating no fewer than 250 species of the genus *Eucalyptus*, and is to be congratulated on his enterprise and assiduity. Since the death of Mr. Garnet Hatley, from whom he obtained the material for his first book, he has been receiving eucalypt flowers, leaves, buds and fruits from the Waite Institute in South Australia. Fossicking for gold is his hobby, and he showed us some worthwhile "colour" in this other field. He had found these specimens on the old Mafeking field, south of Major Mitchell Plateau.

Soft and Hard Water Ferns (*Blechnum* spp.) were both growing along Jimmy's Creek, but the highlight for most of our party was the presence, in flower, of Flame Grevillea (*G. dimor-*

*pha*), a low shrub with the general appearance of Olive Grevillea (*G. oleoides*). This species is a Grampians endemic. Moving on to the Crossroads (the meeting place of Mafeking, Yarram Park and Moyston Roads), a stop was made for a walk among Variable Sallow Wattle (*Acacia mucronata*), Pink and White Heath, *Tetralthea* and *Leptospermum*. At Neale's Cutting, led by Col Burtt (in his A.I.F. beret—he was at Darwin during the war—looking very much the outdoor naturalist rather than the cleric), we searched a timbered area for orchids, but were only moderately successful. Species of *Pterostylis*, *Acianthus*, *Diurus* and *Caladenia*, as listed in the appendix to this report, were found. In addition, Eric Miles saw one Helmet Orchid (*Corybas* sp.) On the way back to the bus we watched two Grey Fantails on a large fallen log, with their characteristic flight. A species of *Cordyceps* (Vegetable Caterpillar), much smaller than *C. gunnii*, had apparently parasitized the larva of a Click Beetle. The bus driver stopped while Ian McCann and Neil Bennett searched for Blue Tinsel Lily (*Calectasia cyanea*), but it was scarce and only in bud. Just above the head of Lake Bellfield four kangaroos leapt away into the bush.

At night a social was held in the lounge, one of the high spots being the competition for the best paper-torn kangaroo. Les Rayment and Miss Joyce Annear arranged the program.

*Sunday, 8 September*—Fired by yesterday's example, the writer joined a pre-breakfast group consisting mainly of the same hardy spirits, and enjoyed a pleasant walk through mountain mist to the summit of Mackey's Peak, reached at 6.55 a.m. Photos of the sunrise were taken. The slippery rocks were the main hazard.

On the way to Stawell on the homeward journey an emu was sighted. A

stop was made at Stawell F.N.C. Wildflower Sanctuary alongside the highway, where there were many species in flower, but the most prolific were Golden Wattle (*Acacia pycnantha*), which was at its magnificent best at many places on this trip, and Mountain Grevillea (*G. alpina*). Near Ararat we passed, but had no time to inspect, McDonald Park Wildflower Sanctuary. Before reaching Middle Creek we passed over Charleycombe Creek, which is an unconsciously funny anglicization of the aboriginal word "Challicum", the pioneer sheep station of that name being so spelt. Galahs and White Cockatoos were seen again.

Thanks are due to our excursion secretary, Miss Marie Allender, who organized everything in her usual efficient way, but also to the many local naturalists who did so much to make sure we saw the best features of the area in our limited time. Praise is also due to competent, imperturbable driver Ray Hicks, who throughout the excursion exceeded the call of duty to add to our pleasure. In Ballarat on the return trip, for example, he drove around the city, pointing out historical points of interest, and took us up to the top of Black Hill, where, with its drilling rig, there is renewed activity.

## APPENDIX

### LISTS OF BOTANICAL SPECIES

Compiled by Miss L. M. White

#### Mt. Zero Trip:

*Eucalyptus viminalis*, *E. goniocalyx*, *Micromyrtus ciliatus*, *Xanthorrhoea australis*, *Thryptomene calycina*, *Banksia marginata*, *B. ornata*, *Callitris rhomboidea*, *Westringia glabra*, *Hibbertia virgata*, *H. fasciculata*, *H. sericea*, *Isopogon ceratophyllus*, *Acacia mearnsii*, *A. brownii*, *A. longifolia*, *A. myrtifolia*, *Nidula emodens*, *Grevillea alpina*, *G. aquifolium*, *Stypantra glauca*, *Anthocercis frondosa*, *Drosera whittakeri*, *D. glanduligera*, *D. planchonii*, *D. auriculata*, *Correa aemula*, *Pterostylis longifolia*, *P. nana*, *P. vittata*, *Acianthus reniformis*, *Caladenia caerulea*, *Leptospermum myrsinoides*, *L. nitidum*, *Cheilanthes tenuifolia*, *Asplenium flabellifolium*, *Fossombronina* sp., *Asterella* (syn. *Fimbriaria*) sp., *Daviesia mimosoides*, *Eriostemon brevifolius* (syn. *difformis*), *Dodonaea petiolaris*, *Kennedia prostrata*, *Pseudanthus ovalifolius*, *Prostanthera rotundifolia*, *Brachyloma ericoides*.

NEAR FLAT ROCK ABORIGINAL PAINTINGS: *Carpobrotus rossii*, *Pterostylis nutans*, *Pultenaea scabra*, *Acacia dealbata*, *Correa aemula*, *Eriostemon brevifolius*, *Psilotum nudum*, *Casuarina pusilla*.

NEAR GHOST CAVE: *Corybas diemenicus*, *Epacris impressa* var. *grandiflora*, *Ixodia achilleoides*, *Eucalyptus melliodora*, *Acacia mucronata*, *Exocarpos cupressiformis*, *Brachyloma daphnoides*, *Goodenia ovata*, *Histiopteris incisa*, *Tetratheca ciliata*, *Styphelia* (*Leucopogon*) *ericoides*, *S. (L.) thymifolia*.

#### Mt. William Trip:

*Stylidium graminifolium*, *S. soboliferum*, *Spyridium parvifolium*, *Leptospermum nitidum*, *L. lanigerum*, *Acacia oxycedrus*, *A. myrtifolia*, *Amperea xiphoclada*, *Banksia marginata*, *B. integrifolia*, *Laxmannia sessiliflora*, *Styphelia thymifolia*, *Tetratheca ciliata*, *Casuarina pusilla*, *Conospermum mitchellii*, *Correa lawrenciana*, *Pultenaea subalpina*, *P. angustifolia*, *Pimelea spathulata*, *Prostanthera lasianthos*, *Eucalyptus alpina*, *Grevillea aquifolium*, *Phebalium*

*bilobum*, *Styphelia* (*Astroloma*) *pinifolia*, *S. adscendens*, *Euphrasia collina*, *Dianella tasmanica*, *Astrotricha ledifolia*, *Pterostylis longifolia*.

FERN GLEN ON THE WAY BACK: *Dicksonia antarctica*, *Blechnum procerum*, *B. nudum*, *Polystichum proliferum*, *Clematis aristata*, *Pomaderris aspera*, *Eucalyptus cypellocarpa*.

TO A STOP NEAR GLEN: *Hardenbergia violacea*, *Veronica derwentia*, *Pultenaea scabra*, *Prostanthera lasianthos*, *Pimelea axiflora*, *Coprosma quadrifida*, *C. hirtella*, *Goodia lotifolia*, *Cassinia* sp.

AT CAMPING GROUND, HALL'S GAP: *Marianthus bignoniaceus*, *Calytrix sullivanii*, *Correa aemula*, *Pterostylis nutans*, *P. concinna*.

### Stawell Trip:

BIG HILL AREA: *Pterostylis mutica*, *P. nana*, *Diuris pedunculata*, *D. palustris*, *Acianthus reniformis*, *Caladenia caerulea*, *Prasophyllum nigricans*, *Hovea heterophylla*, *Dillwynia sericea*, *Daviesia brevifolia*, *Brachyloma ericoides*, *Correa reflexa*, *Brunonia australis*, *Drosera whittakeri*, *D. auriculata*, *D. planchonii*, *Acacia pycnantha*, *A. melanoxylon*, *A. diffusa*, *Anguillaria dioica*, *Hibbertia stricta*, *Grevillea alpina*, *Chamaescilla corymbosa*, *Hypoxis glabella*, *Leptospermum myrsinoides*.

THREE JACKS SANCTUARY: *Cryptandra tomentosa*, *Hybanthus floribundus*, *Baeckea ramosissima*, *Glossodia major*, *Hypoxis pusilla*, *Caladenia caerulea*, *Grevillea aquifolium*, *Hibbertia fasciculata*, *Styphelia behrii* (syn. *Astroloma conostephioides*), *Acacia gunnii*, *A. mitchellii*, *A. armata*, *A. acinacea*, *Iso-pogon ceratophyllum*, *Pimelea glauca*, *Geranium solanderi*, *Pelargonium rodneyanum*, *Daucus glochidiatus*, *Indigofera australis*, *Craspedia uniflora*, *Ranunculus lappaceus*, *Pterostylis longifolia*, *Caladenia carnea*.

DEEP LEAD (MRS. BENNETT'S PROPERTY): *Helichrysum scorpioides*, *H. obcordatum*, *Micromyrtus ciliatus*, *Acacia pycnantha*, *Eucalyptus goniocalyx*, *Caladenia carnea*, *C. caerulea*, *Brachyloma daphnoides*, *B. ericoides*, *Styphelia* (*Lissanthe*) *strigosa*.

FERNS IN MINESHAFT: *Cyathea australis*, *Adiantum aethiopicum*, *Blechnum* spp., and others.

### Wonderland Trip:

*Pultenaea costata*, *P. angustifolia*, *Acacia dealbata*, *A. oxycedrus*, *A. myrtifolia*, *A. melanoxylon*, *Banksia marginata*, *B. integrifolia*, *Bossiaea cinerea?*, *Dillwynia oreodoxa*, *Acrotriche serrulata*, *Styphelia behrii*, *S. pinifolia*, *S. virgata*, *S. adscendens*, *Baeckea ramosissima*, *Boronia pilosa*, *Asterolasia pheba-lioides*, *Bursaria spinosa*, *Callitris rhomboidea*, *Calytrix sullivanii*, *Cassinia aculeata*, *Casuarina pusilla*, *Comesperma volubile*, *Conospermum mitchellii*, *Correa aemula*, *C. reflexa*, *Epacris impressa* var. *grandiflora*, *Eucalyptus baxteri*, *E. alpina*, *E. cypellocarpa*, *E. viminalis*, *Hakea sericea* (syn. *acicularis*), *Marianthus bignoniaceus*, *Melaleuca decussata*, *M. squarrosa*, *Persoonia juniperina*, *Viola hederacea*, *Platylobium obtusangulum*, *Pteridium esculentum*, *Prostanthera lasianthos*, *Trymalium d'altonii*, *Todea barbara*, *Stypantra glauca*, *Thryptomene calycina*.

### Black Range Trip:

BUNJIL'S CAVE AREA: *Cheilanthes tenuifolia*, *Morchella* sp., *Eucalyptus melliodora*, *Acacia melanoxylon*, *Asplenium flabellifolium*, *Acianthus reniformis*, *Pelargonium rodneyanum*.

AT LAKE FYANS: *Eucalyptus camaldulensis*.

TRACK TO CLEMATIS FALLS: *Eucalyptus radiata*, *E. viminalis*, *Villarsia exaltata*, *Acacia verniciflua*, *Clematis aristata*, *Glycine clandestina*, *Exocarpos cupressiformis*, *Xanthorrhoea australis*, *Pterostylis nutans*, *P. concinna*, *Acianthus reniformis*, *Styphelia adscendens*.

REED'S LOOKOUT: *Callitris rhomboidea*, *Eucalyptus alpina*, *Acacia melanoxylon*, *A. verniciflua*, *Stellaria pungens*, *Daviesia ulicina*, *Dodonaea cuneata*, *Asplenium flabellifolium*, *Leptospermum scoparium*, *L. nitidum*, *Correa aemula*, *Billardiera scandens*, *Gleichenia microphylla*, *Spyridium parvifolium*.

MCKENZIE FALLS: *Brachycome ciliata*, *Todea barbara*, *Blechnum* sp., *Adiantum aethiopicum*, *Leptospermum scoparium*, *L. juniperinum*, *L. nitidum*, *L. myrsinoides*, *Grevillea repens?*, *Indigofera australis*, *Styphelia virgatus*, *S. ericoides*, *A. oxycedrus*, *A. verticillata*, *A. mucronata*, *A. mitchellii*, *A. melanoxylon*, *Daviesia brevifolia*, *Styphelia humifusa*, *S. behrii*, *S. adscendens*, *Eucalyptus baxteri*, *E. obliqua*, *Brachyloma daphnoides*, *Xanthorrhoea australis*, *Banksia marginata*, *Polystichum proliferum*, *Tetratheca ciliata*, *Platylobium obtusangulum*, *Pultenaea angustifolia*, *P. scabra*, *Coprosma hirtella*, *C. quadrifida*, *Hakea sericea* (*H. rostrata* seen on road before start of walk).

DIVERSION PIPE AREA: *Calomeria amaranthoides* (syn. *Humea elegans*), *Bauera sessiliflora*, *Goodia lotifolia*, *Clematis aristata*, *Grevillea aquifolium*, *Selaginella uliginosa*, *Melaleuca squamea*, *Acacia mucronata*, *A. oxycedrus*, *Sprengelia incarnata*, *Casuarina pusilla*, *Euphrasia collina*.

JIMMY'S CREEK: *Blechnum minus*, *B. nudum*, *Goodia lotifolia*, *Grevillea dimorpha*, *Pimelea* sp., *Stackhousia monogyna*, *Dillwynia* sp., *Acacia retinodes*, *A. gunnii* (syn. *vomeriformis*), *Banksia marginata*, *Tetratheca ciliata*, *Styphelia ericoides*, *Epacris impressa*, *Acianthus reniformis*.

GRANITE INTRUSION NEAR MAFEKING GOLDFIELD: *Acacia aculeatissima*, *A. stricta*, *Viola hederacea*, *V. betonicifolia*, *Eucalyptus ovata*, *E. viminalis*.

NEALE'S CUTTING Paddock: *Acacia dealbata*, *Pterostylis nutans*, *P. curta*, *P. longifolia*, *Acianthus exsertus*, *Diuris maculata*, *D. pedunculata*, *Caladenia* sp. (leaves of a spider orchid), *C. deformis* (shown at night by Mr. Bennett).

ON WAY HOME FROM ABOVE TRIP: *Calectasia cyanea* (in bud only).

STAWELL F.N.C. SANCTUARY: (seen on Sunday on way home) *Acacia pycnantha*, *A. gunnii*, *Kennedia prostrata*, *Grevillea alpina*, *Tetratheca ciliata*, *Pterostylis concinna*, *Diuris pedunculata*, *Drosera whittakeri*, *D. auriculata*, *Styphelia behrii*, *S. humifusa*, *Hovea heterophylla*.

NOTE: Also seen at various times these other eucalypts—*Eucalyptus leucoxylon*, *E. polyanthemus*, *E. macrorrhyncha*, *E. sideroxylon*, *E. dives*. Also, *Microseris lanceolata* (syn. *scapigera*), *Cymbonotus lawsonianus*.

*Editorial Note*

\* \* \* \*

In Part 1 of this report, published in the *Victorian Naturalist* for June 1969, reference was made on p. 163, to the Deep Lead memorial depicting a goat and a sheep.

In fact, the animals are two goats (male and female), representing the large number which existed on the gold fields to provide both meat and milk for the miners.

The memorial was erected in 1936.

Reference was also made to Mr. James Davidson, a former State School Inspector. He was in fact the brother of Mr. Bob Davidson, the present chairman of the F.N.C.V. Geology Group.

Since this excursion, news has been received that the J. J. Kingston Memorial Sanctuary has been completely fenced by the efforts of Stawell F.N.C.

Mr. Neil Bennett of Stawell F.N.C. supplied this information.

by A. J. SWABY

In the twenties and thirties, the late Harold Smith and I made a study of the Lower Norton Mallee. Incidentally, that led to the establishment, last year, of the John Smith Memorial Sanctuary. (See below.)

A colony of wattles could not be identified: for they never flowered, so badly were the buds galled. Then in one season, all blossomed well. Something evidently attacked the gall insects. Many questions arise for you to answer.

In Vol. 76, Nov. 1959, Page 171, R. D. Lee contributed "The Great Gall Mystery". He dealt with galls in general and the mystery lay in the process by which the gall was induced. It is likely to remain mysterious.

In Vol. 80, March 1964, M. J. Lester recorded a detailed study of galls on Cootamundra Wattle. It was an excellent piece of work as far as it went and should have stimulated us to find a way of preventing the galling.

I collected seed of Coast Wattle for Wimmera Forests Nursery at Wail. Many plants were galled. I found that the insects emerged on the day when normal pods opened. The gall insect evidently has evolved so that its life

cycle comes to maturity just when sap has been withdrawn from the pod. Delay would mean death.

What about the beginning? Can we prevent it?

At flowering time, the galled heads may show no sign of flowers. Some may show a tuft of yellow where each flower of the head or catkin should have been. My guess is that the eggs are laid either before the rudiments of separate flowers have formed or soon after. When is that?

Surely, there is a wattle growing quite close to each of us. Some members may have many. When are buds first seen? When do insects, acting suspiciously, arrive? At the other end, when pods are ripening and galls are present, what happens in a fine nylon cover on a gall or many galls? Specimens of emerging insects can be kept for comparison with insects seen about the wattles?

I have several wattles (no Cootamundra) and never a gall. A Cootamundra up the street gets hundreds of galls. Does each wattle have its own gall insect? I know that Black Wattle forms a gall very unlike that of Cootamundra, but are the insects different?

## John Smith Memorial Sanctuary

Over 35 years ago, I asked Mr. Egbert Smith, of Lower Norton, near Horsham, to reserve ten acres of scrub. He agreed.

This is an "island" of Mallee type soil and vegetation. Probably it was continuous with the northern Mallee.

When the sea was receding from the great Murray-Darling gulf, drainage from eastern Grampians had to find its way round the north of Arapiles where lakes Natimuk, Miga, Clear and White with swamps between, indicate its course to the Glenelg. Norton



Mallee was cut off. The valley of the Wimmera received deposits similar to the "black wimmera" soil and became populated with its vegetation.

Norton has no species evolved there, but has a considerable number now becoming rare and a few of very limited range. Outstanding are *Acacia glandulicarpa* and *Eucalyptus froggattii* the latter known elsewhere from near Bendigo only.

Upon the formation of Horsham Naturalists Club, questions arose concerning the status of the reserve. I assured them that no legal transfer had been made—it was still the property of the heirs of Egbert Smith. Ernest, son of Egbert, then donated 20 acres and set about transferring it to the Department of Lands, with Arapiles Shire Council as Trustees and a committee of management partly nominated, partly elected. Present indication is that the voice of Horsham Naturalists will be heard and heeded.

Management will be necessary. For a generous private gift the area is large, but it is too small for a permanent ecological unit. It is remarkably free from invading weeds, but they would inevitably appear. In parts, dominant species have suppressed others and have themselves reached a climax. A few interesting plants of the district are not included and must be brought in.

John Smith was the original settler, grandfather of Ernest. His eldest son, Harold, was an active member of F.N.C.V. for many years. He brought the area to my notice. His principal area of interest was the Black Range where he discovered Mount Byron Bush-pea, and became the host of scientists attracted by the discovery. For many years, Harold sent flowers for our shows. In 1938 on our behalf, he sent 104 species, all named, to Adelaide for a show.

A.J.S.

## Vale Rolf McKellar

With sorrow, we record the passing of Rudolph Warren McKellar, O.B.E., J.P., a member since 1954.

Mr. McKellar's chief service to the community was in the Boy Scouts, where he was Commissioner of Bayside County for several years. His unobtrusive, but wise, superintendence earned him the high respect of the Movement and his appointment as Chief Commissioner for Victoria.

The demands of that office, with health less than satisfactory, prevented regular contact with the Club, but the interest of Mrs. McKellar and himself was manifest in their holiday home at Mt. Evelyn. There, they watched every development of indigenous and plan-

ted wild flowers. Some years ago, fire took everything. Our last talk with him, when he seemed to be convalescent, was about the regeneration and the appearance of treasures not known there before.

Last year, he was congratulated on the conferment of O.B.E. Characteristically, he attributed that to recognition of the Scout Movement.

This year, feeling free for more active work with the Club, he accepted office as Vice-President. Illness intervened.

Sympathy of all members will go out to Mrs. McKellar, their son, Ian, his wife and the grandchildren.

A.J.S.

## 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.*

### Parrots

Mr. Howard Sloane of Mt. Clear near Ballarat, Victoria, sent these thoughtful notes on Parrots.

Few people realize the value of parrots in timber and honey production; and how these beautiful birds are vanishing from the landscape. Now that we stock our forests with millions of pollinating insects, the eucalypt trees that yield the honey crop are induced to set quantities of fruit; especially those that also pollen to bees—the Messmate, Grey Box and Red Gum.

Trees are encouraged to flower by a reduction of sap flow as in lateral and drooping branches, and the maturing of the crop of fruit becomes a burden, halting timber growth and preventing the trees from flowering for a number of years. It has been demonstrated that, if all fruit is removed, trees will continue growth and even flower annually. This considerably increases timber production and doubles the yield of honey. The role of the parrot is to remove the ripening fruit, and Black Cockatoos, Gang Gangs, and Rosellas are efficient in this work. They tend our forests and play an important part in the scheme of things.

When we came to this country it was well stocked with parrots, and the ring-barking of the box forest of the Murray Valley for grazing caused a population explosion. The dead trees provided excellent nesting sites, and the growth of seeding grasses and water supplies for stock made ideal conditions for these birds. Rosellas,

Red Backed Parrots and Blue Bonnets flocked to the Murray Valley, and the little Titmouse was their companion.

The change to farming altered this, as before the adoption of the drill which buries the seed, wheat men on the land poisoned countless birds that gathered to eat the scattered grain, and parrots were also unpopular with fruit growers.

The dead timber has now gone, having either been eaten down by termites, or burnt and removed for farming. Nearly all aged nesting-site trees have also been removed, as it is not thought to be good policy to retain these. We now see the forlorn sight of pairs of Rosellas flying from tree to tree vainly searching for a hollow.

Parrots are weak on the wing and cannot forage far from their nests. One exception however is the Galah, which may be seen leaving the timbered rivers and creeks at dawn, and flying high as they go miles out on to the open plains for food. These birds have increased in number recently, apparently because the conditions suit them.

If our parrots are to be saved from extinction an effort must be made to retain aged trees, and possibly build nesting boxes as is being done for ducks. The starling is also a problem as it monopolises all hollows. A Titmouse has been known to nest with Sparrows in the roof of a house but never a parrot. This subject deserves our attention or we may lose these beautiful feathered friends.

**Injury of Indian Myna *Acridotheres tristis*—**

Mrs. Ellen McCulloch of Mitcham, Victoria, tells of the observations made by her husband, and Mr. A. Walker.

The most frequent reports of injuries to birds resulting from miscalculation during flight usually appear to fall into two categories—either direct flight into windows and other expanses of glass, or collision with tall buildings or high wires, often at night or when visibility is poor.

On Friday 23 May, 1969, several noisy House Sparrows *Passer domesticus* were seen fluttering together above a low, clipped privet hedge at the Yarra Glen golf-course near Melbourne. When approached the Sparrows flew off, and an Indian Myna was seen to be impaled on a thin bare vertical branch growing in the middle of the hedge, about 12 inches down from the top. The end of the stick protruded about 4 inches beyond the body, and had entered at one side of the chest, from the front. No bleeding was apparent either on the body or from the beak.

When lifted quickly off, the bird fluttered to the ground and squatted there, with head thrust forward, beak open. After 30 seconds or so it flew up towards a window-sill, failed to get purchase there, and flopped to the ground. Very shortly afterwards it flew slowly and with effort to the club-house roof, and finally to a small tree, where it clung awkwardly to a branch, appearing off-balance, and almost falling forward and off. Its eventual fate is not known.

Attention was first drawn by the noise of the Sparrows; the Myna made no sound after it was released. Visibility at the time was good.

This observation was made by my husband Peter McCulloch and Mr. Arthur Walker.

**Interesting Fauna in the New Colony**

Part of an article which appeared in the supplement to the Sunday Truth of 26 Jan., 1969, is published here with acknowledgment to that paper.

From the "London Chronicle", dated October, 1788.

**Botany Bay, 26 January, 1788.**

Your Correspondent now has the Honour to inform you of the most Interesting creatures we have observed since our Landing in New South Wales, and craves your most kind Indulgence for the inaccuracies and brief descriptions attempted by a person not experienced in the knowledge of the manner of such animals.

There are Kangaroos in immense quantities, animals very strange to behold. Varying in proportions, some are of small size, other are larger. They have pointed faces and ears remarkable like those of a fox only longer, and tails of considerable enormity in length like that of a rat only magnified a thousand times.

They jump in most curious bounds and leaps from one place to the next, and your Correspondent understands they make fair eating. The Natives eat them when they can catch them with their spears, which is not often.

Mr. Bowes who has partaken of the Kangaroo meat informs us that he cannot say it equals venison, nor even mutton.

Lizards there are in great abundance which are little to big in size and opossums, too, the latter being in length about five and twenty inches from the nose to the extremity of the tail, black to brown in colour, with a face not unlike that of an English squirrel's face but that the snout is more pointed in shape.

There are birds in great numbers, the parrots being of colours of considerable beauty, with pelicans and hooded gulls similar to the English species, black swans and a bird as large as an ostrich and swifter than a greyhound in speed when running on tall legs.

We have also seen snakes in plenty and fear their maleficent expression but we are informed by the Surgeons that not all are venomous as their countenances would admit.

Without a doubt we will find even more strange creatures when we have explored further and your Correspondent will have the Honour to observe them and describe them for your Entertainment.

# Is it a Star or a Planet?

by MYFANWY BEADNELL

Many beginners are confused when trying to distinguish between a planet and a bright star. In general, the five bright planets are brighter than the stars, but this is by no means always so. The one certain way is to learn to recognise the constellations by studying the star charts month by month. In a year all the stars will have been observed and one can be sure that any doubtful object which appears to be out of place is a planet—unless it is that rare occurrence, a *nova* or new star.

Three rules to remember are:

All planets rise in the east, set in the west, and are north roughly halfway between their hours of rising and setting.

In the southern hemisphere, no planet can be seen in the southern portion of the sky.

If watched over several nights, the doubtful object will, if a planet, be seen to move relative to its neighbors.

The planets must be considered in two groups; the inner and the outer. The inner planets are Mercury and Venus, which have orbits between us and the sun. Therefore they are always fairly near the sun and can only be seen either before sunrise in the east or after sunset in the west. In the case of Mercury the time difference between it and the sun is never more than two hours, so he is only visible for a very short time in the morning or evening.

Venus, being not quite so near, can be up to four hours behind or ahead of the sun. At her brightest, Venus can easily be seen in daylight. From tables, her time difference behind or ahead of the sun can be read, and a

search made in the appropriate part of the sky, remembering that, as with all planets, she follows roughly the same path as the sun through the sky. This path is called the *ecliptic*. She is at maximum brightness every eight years.

The naked-eye outer planets are Mars, Jupiter, and Saturn.

Mars is at his brightest every 15 or 17 years and is then very bright. One such occasion was in June 1969. He is always very red in colour, and when not at his brightest can easily be mistaken for Antares in the Scorpion.

Jupiter and Saturn, and also the two inner planets, can, when they are not at their greatest brilliance, be confused with Sirius, the Dog Star, or one of the other bright stars.

With even low-powered binoculars, Jupiter's four largest moons can be seen, and it is interesting to watch them appearing and disappearing as they revolve around the planet.

Saturn is distinctly yellowish, but this is not very obvious to the inexperienced observer.

By watching over a few successive nights, a planet's motion becomes very obvious. Because these far-distant planets take longer to go round the sun than does the earth, they appear to become left behind as the star sphere moves westwards, that is, they move eastward among the stars. But at times, a strange alteration will be observed; they remain stationary for a few days, move westerly (retrograde motion) for a few weeks, halt again, and finally resume their eastward motion. This is because the earth "catches up" and then passes the slower outer planet during its own journey.

Of the three outermost planets, only Uranus can be seen with the naked eye. Because he is at such an enormous distance from the sun, and takes such a long time to complete a revolution, his change of position is very slow. Neptune and Pluto cannot be seen with the naked eye, but with binoculars one can pick up Neptune.

Of the 15,000 asteroids or tiny planets, four can be seen with the naked

eye or with binoculars occasionally. The orbits of these planetoids are eccentric and complicated calculations are required to predict their whereabouts.

Nature lovers should not fail, after having bought a set of star maps or a planisphere (planispheres are only 20c at the museum), to note from the weather page of one of the Melbourne daily papers, which planets are visible at night.

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### Monthly Microscopy Meeting

16 July

This meeting will be held at the Melbourne University Brownless Medical Library and Museum; when Professor Russell will give a lecture on "The History of the Microscope". It will be augmented by a demonstration of instruments in the museum.

All members of F.N.C.V. are cordially invited to share in this particular night.

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## Letter to the Editor,

Dear Sir,

In reference to Mr. West's article on "The Grinding Rocks at Munro", published in the *Vict. Nat.* 86 (6) pp. 152-159.

By analysing the grinding grooves on the Munro site Mr. West has done meritorious work. It reminds me of a lecture on archaeology which I attended some years ago. The speaker was giving the results of his investigations of a shell (or kitchen) midden along the Victorian coast. He counted the shells found on the surface of a measured space on the midden, and multiplied the results by the extent and depth of the entire midden. He thus arrived at the approximate number of shells it contained, and was able to establish that a relatively small number of men, each daily eating a certain number of shellfish, were responsible for the accumulation over a certain long period of time; and that double, or four times that number of men could have accumulated the shells in a half or a quarter of that time.

However, the purpose of my letter is to record my resentment of Mr. West's suggestion that I went beyond the evidence. I may be accused of having a good imagination, but certainly not of over reading the evidence. I know my aboriginal sites and my Aborigines too well for that.

In the first place my term "super axes" defines a series of outside axes, too heavy and too large to be hafted. The use they were put to has never been witnessed, but that they exist is beyond doubt. There are many specimens in the National Museum and in private collections. F. D. McCarthy, in "Australian Aboriginal Stone Implements", (1967), p. 43, states that

they occur up to 9½ lbs. in weight. They have ground edges, so *they must have been ground on something.*

Secondly, my statement that they were used for digging out wombats. My late friend, the lamented S. R. Mitchell, with whom I frequently discussed stone implements, was emphatic that they were digging tools. On page 86 of his book "Stone Age Craftsmen" (1949) a classic of its kind, he states—

"An Aboriginal at Coranderrk informed the writer that these large tools were used by the Victorian Natives for digging."

On the same page Mitchell also made references to a large stone implement described by R. Brough Smyth in Vol. 1, p. 368 of "The Aborigines of Victoria" (1878). That author stated that it was found at Daylesford, and that—

"It is supposed to have been used for digging roots, and in sinking holes to get at the wombat."

I myself was told by the late Mrs. Hilda Tregonning, at Lake Tyers, that in her youth she had often crawled into wombat holes to enable her father to dig them out. When I asked her what tool had been used for the purpose, she answered: "a large sharpened stone".

Finally, I would like to state that since I described and numbered groups Nos. 1 and 2 of the Munro site, the two additional groups published by Mr. West should have been numbered 3 and 4, and not 1 and 4. Apart from the confusion it creates, it is not ethical for an author to renumber another author's work.

Aldo Massola

# Field Naturalists Club of Victoria

## General Meeting

9 June, 1969

The President, Mr. E. R. Allan was in the chair. He welcomed Mr. and Mrs. Muir from Dimboola.

Mr Allan said he had sent a message of sympathy to the President of the Benalla Club, Mrs. G. D. Brooke on the death of her son in a shooting accident.

Five new members whose names appear in the June "Naturalist" were elected.

The President read a letter that appeared in the Herald on 24th May this year from an American visitor in appreciation of Wilson's Promontory National Park. It stressed the need for its total preservation in its Natural State and urged that no more accommodation buildings should be erected. These destroy more of the park. In America now all motels and hotels are outside the parks. The Secretary announced that the Bird Observers' Club has arranged to have supervisors at Yellingbo on Sundays from 10 a.m. to 4 p.m. There is a plan to replant the creek area with Manna and Swamp Gum to ensure the habitat of the Helmeted Honeyeater.

A Monash University student is studying the ecology of the area and it is hoped it will be preserved.

A letter from the printers of the Naturalist announced increased costs of printing by one third and the increased price of glossy paper by 25%. The Secretary invited suggestions by members of means for meeting the situation without raising subscriptions.

The subject for the evening was "Some familiar plants of the family myrtaceae" by Miss Madge Lester.

She said that the talk was the result of fourteen years of field examinations of characteristics that placed plants in the family myrtaceae. She showed on the screen a diagram of parts of a flower and explained their functions and distinguished between the terms "family", "genus" and "species".

The world wide family Myrtaceae is very particularly represented in Australia giving the Australian bush its characteristic appearance. In general the plants of this family are woody trees or shrubs with simple exstipulate entire leaves, often with oil glands. The flowers usually have five sepals, five free petals, five, ten or numerous stamens, a single style and

stigma and the fruit is a capsule, berry, or nut. Colour slides illustrated details of the features of several genera.

The genus *Eucalyptus* has alternate simple entire leaves with oil glands instead of the usual sepals and petals the bud is covered with a cap (operculum) which falls off as the flower opens.

Numerous stamens are the attractive part of the flower. The fruit is a woody capsule. *Angophora* shows no cap on the bud but five small sepals and five small petals and numerous showy stamens. The leaves are opposite and the capsule less woody than in *Eucalyptus*. *Leptospermum* (tea tree) has distinct sepals and showy petals, fewer stamens and woody capsules contrasting with *Baeckea* (heath myrtle) which has smaller flowers, fewer stamens that turn inwards and the very small capsules split by 3 or less lines compared with 4 or more in *Leptospermum*. *Baeckea* capsules do not remain on the plant as long as those of *Leptospermum* and its leaves are opposite while they are alternate in *Leptospermum*. *Melaleuca* species have a spike head of small flowers with 5 very small sepals and 5 small petals and numerous showy stamens joined in groups.

The capsules remain on the stem for years. *Callistemon* (bottle brush) is similar to *Melaleuca* but the long showy stamens are free. *Kunzea* petals are usually more easily seen than in the above but the numerous stamens are still the most showy. The capsules are less woody and only last a few months.

*Eugenia* (Lilly pilly) species show berries and very small flowers, the small sepals falling off as the flower opens. The stamens are numerous.

*Thryptomene* has small flowers, the centre darkening as it ages. The 5 sepals look like petals and are larger than the 5 petals. There are 5 stamens and the fruit is a small nut with one compartment and one seed. *Calythrix* has 5 sepals, 5 petals, numerous stamens and the fruit is a nut. The persistent calyx aids in dispersal. *Micromyrtus*, *Tristania*, *Darwinia* and *Backhousia* were also listed.

Geraldton Wax flower (*Chamaelaucium*) and a species of *Calothamnus* were shown as well as the New Zealand Christmas bush, the tropical American *Feijoa* and *Myrtle* both with berries. The talk was emphasised by careful recapitulation

or the characteristics of the family. Mr. North projected the slides.

The President thanked Miss Lester for the talk and said he was much indebted to her for explaining what he did not know. The members endorsed his appreciation with applause.

Mr Allan said that members should thank the editor Mr. Ward for the fact that their Naturalist arrived in time, as he had worked long hours on Monday and Tuesday nights to overcome the delays in printing caused by the general strikes. Notice was given that LaTrobe University Conservation Society has asked to be affiliated with the Club and this will be decided at next meeting.

Mr. Woollard announced he has some 1969 copies of the "Bird Lover" for 20 cents. The Herbarium has asked if any one could let them have a copy of "Wild Life" of September, 1943 to complete the Herbarium set.

The Secretary read a long report of what Sir Wm. McDonald said in Parliament concerning the Kentbruck Heathland and the Little Desert and plans to develop these areas.

Miss Jenny Forse spoke of her recent trip to the Little Desert with the Monash Biology group, and pointed out that if the best land of this area is taken out as proposed, the part left would not be representative of the whole area.

She brought pamphlets prepared by the Monash University Biological Society for distribution. The pamphlet claims that the land is infertile; that potential settlers risk financial ruin; that no complete Biological survey has been made; and that this is a thoughtless exploitation of an environment that can never be restored. It asks members to write to their members of Parliament asking that the subdivision be stopped until adequate evaluation is made. Mr. T. E. Muir who lives near the Little Desert told the meeting that of the farms of one to two thousand acres on the comparable Big Desert, everyone would walk off if he got a buyer but there are no bids. The Big Desert has a better water table than the Little Desert where the sand is about 30 ft. deep. Although plans for 44 blocks of 4 or 6,000 acres have gone through the House and applications called for, so far many applications are only for information.

Each must raise \$54,000. If there are not enough applications, then it may be that access roads (which must be paid for by the buyer) will not be put in.

Expert opinion has been given that for a good farmer, the return may be 4% but it could be 2% or less. Answering a question if there are already grazing leases, Mr. Muir said there was a nominal fee but the land couldn't support a sheep to 10 acres.

Members were urged to continue to press their views so that Cabinet may decide to have another look at it.

### Nature Notes and Exhibits

Mr. Graeme Love spoke of his trip through 10,000 miles of Australia and said that at Kambalda the authorities are so conservation conscious that if any employee is found destroying natural features he is dismissed. He mentioned that Broken Hill has two new National Parks. He showed Hematite from Nobles Nob mines, Kalie opal (Norseman), Local rock (Norseman and Kalgoorlie), Goethite and Hematite (Tom Price), Green stone (Kambalda), copper concentrate (Mt. Morgan).

Artifacts from Bald Hill near Bacchus Marsh were also on exhibit. Mr. A. J. Swaby brought *Acacia podalyrifolia* (Mt. Morgan silver wattle) *A. botrycephala* (sunshine wattle) *A. pruinosa* (Frosty wattle) and a species of *Dryandra*.

Miss Anne Forbes showed *Boronia muelleri* from between Laver's Hill and Apollo Bay.

Specimens with berries collected by Mr. Ian Morrison on a Gippsland trip were *Notelaea longifolia* (Mock olive) with white and pink berries, *Coprosma nitida* (shining coprosma), *Leucopogon macraei* (alpine beard heath) *Coprosma hirtella* (rough Coprosma).

Mr. Swaby explained that the specimen of *Gaultheria appressa* (Waxberry) showed fleshy sepals resembling a berry.

Mr. D. McInnes demonstrated three binocular stereoscope microscopes bought for the use of members at Club meetings with the proceeds of the sale of Club microscopes. These can be set up by members themselves to show specimens at any meeting approved by council.

The President praised the work of Mr. Woollard and Mr. McInnes and their helpers responsible for the profits from the club microscopes assembled by them. Mr. J. Baines announced that there will be a series of publications by the Gould League, subsidised by the Education Department on birds of different areas including urban, ranges, and inland waters, the price being \$1 each.



**F.N.C.V. DIARY OF COMING EVENTS**  
**GENERAL MEETINGS**

**Monday, 14 July**—Extraordinary meeting to consider affiliation of Latrobe Conservation Society, 7.55 p.m. General Meeting, 8 p.m.

1. Minutes, Reports, Announcements.

2. Correspondence.

3. Subject for evening—

4. New Members

(a) *Ordinary*:

Mr. M. L. Fitzpatrick, 3 Parsons Street, Croydon 3136. (Botany.)

Miss Marjorie Gordon, 44 Fitzgerald Street, Balwyn 3103.

Mrs. Zoe A. Smith, Flat 5, 31 Tourello Avenue, Hawthorn 3123.

(b) *Joint Ordinary*:

Mr. and Mrs. I. D. Cameron, 2 Blackfriars Close, Toorak 3142.

Mr. and Mrs. B. H. Kemp, 21 Kingsley Road, Airport West 3042. (Geology.)

(c) *Junior*:

Miss Nicole Goudberg, Lot 46 MacKay Road, Rowville 3178.

5. General Business.

6. Nature Notes and Exhibits.

**Group Meetings**

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

**Wednesday, 16 July**—Microscopical Group.

**Friday, 26 July**—Hawthorn Junior F.N.C. meeting at 8 p.m. at Hawthorn Town Hall.

**Friday, 1 August**—Preston Junior F.N.C. meeting at 8 p.m. in Rechabite Hall, 251 High Street, Preston.

**Monday, 4 August**—Entomology and Marine Biology Group.

**Wednesday, 6 August**—Geology Group.

**Thursday, 7 August**—Mammal Survey Group meeting in Rooms of Fisheries and Wildlife Department Library, 603 Flinders Street Extension, at 7.45 p.m.

**Friday, 8 August**—Montmorency District Junior F.N.C. meeting at Scout Hall, Petrie Park.

**Thursday, 14 August**—Botany Group.

**F.N.C.V. Excursions**

**Sunday, 20 July**—Sherbrook Forest. Lyrebirds and general study. The coach will leave Batman Avenue at 9.30 a.m. Fare \$1.30; bring one meal.

**29 August-21 September**—Western Australia. The party will leave by the evening train on Friday, 29 August arriving in Perth Monday, 1 September at 7 a.m. and will stay overnight at Jurien Bay, Tuesday to Friday Northampton, Saturday Geraldton, Sunday Wongan Hills, Monday Merredin, Tuesday Lake Grace, Wednesday Porongurups, Thursday-Friday Albany, Saturday Manjimup, Sunday-Monday Busselton, Tuesday-Wednesday Perth, departing Thursday evening by train for Melbourne arriving Sunday morning. Cost of this excursion is \$260.00 including deposit of \$50.00 paid when booking, the balance should be paid by the end of July and it would assist the excursion secretary if the bulk of the payments could be in by the July meeting, all cheques being made out to Excursion Trust. Members who have requested a sleeping berth between Melbourne and Adelaide should include the extra \$13.50. Payments should be made to Miss M. Allender, 19 Hawthorn Avenue, North Caulfield 3161, who would also appreciate advice of items of natural history interest along the route and hopes naturalists in W.A. in these areas will contact the party and where possible spend some time on the excursion.

**Boxing Day, 26 December to New Year's Day**—Mount Beauty details later.

# 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

Ordinary Members .. .. .	\$7.00
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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.



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