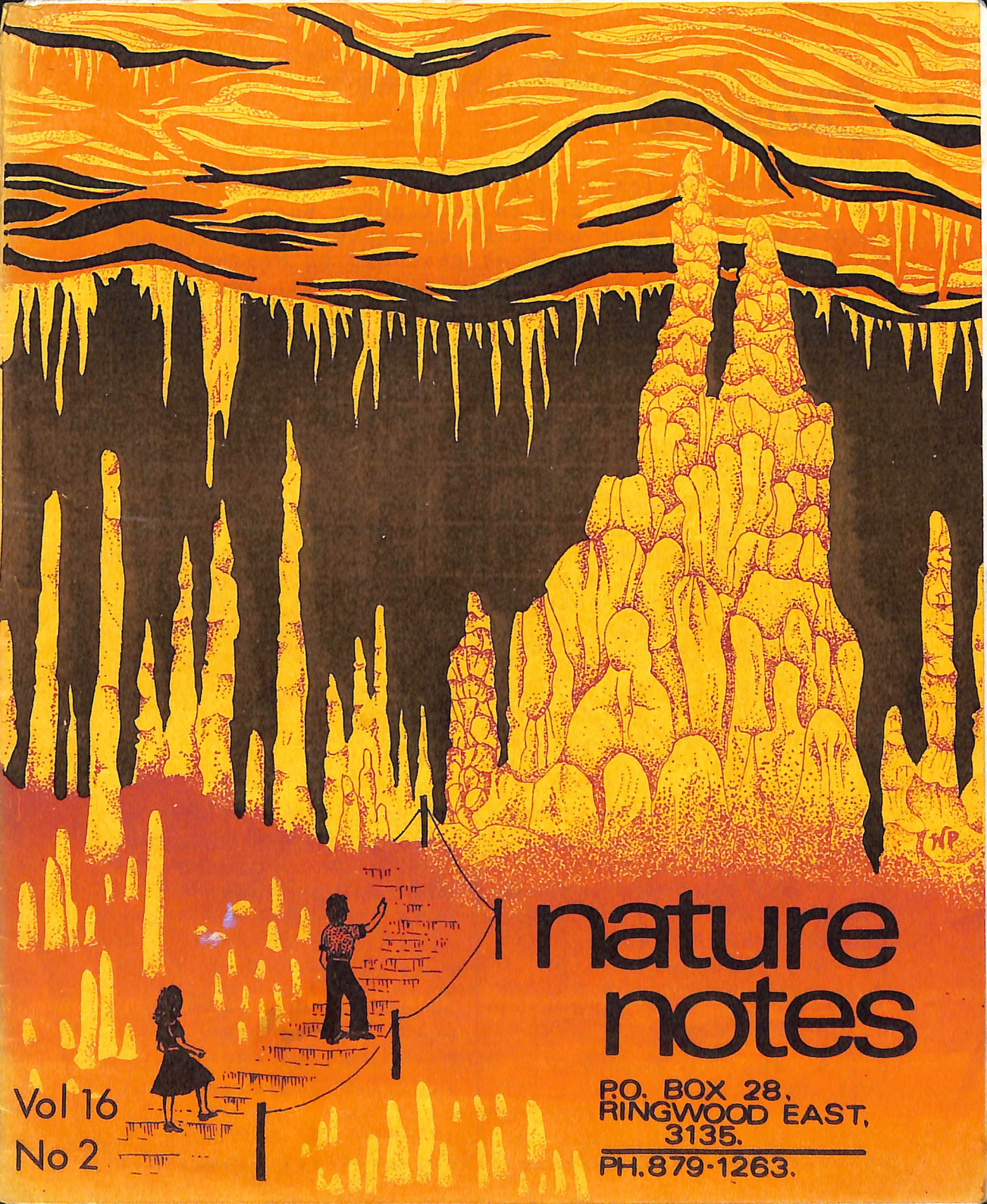

nature notes

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No 2

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Editorial

HI!

Welcome to Issue 2 of Nature Notes. This month we are featuring caves, and in particular Buchan Caves in Gippsland. I do hope you like our cover. The original sketch came from a camp book produced by Heathmont Primary School in 1977. The artist was Mr. Douglas Beattie. The cover drawings were produced by Mrs. Prohasky. We needed two sketches to print the cover. Can you think why?

Nature Notes has also been given a small display case to protect some of the specimens brought into our office. Mr. Beattie was the kind donor. Wally and all his friends would like to thank Mr. Beattie.

Also in this issue is an article by Mr. Archibald about the Gum Emperor Moth. At the moment the caterpillars of this moth are quite common. By the way, how many legs does a caterpillar have? As the months go by Mr. Archibald is going to bring to our attention things that are found in the school ground that you to can investigate.

'Bye for now

Robin Bull

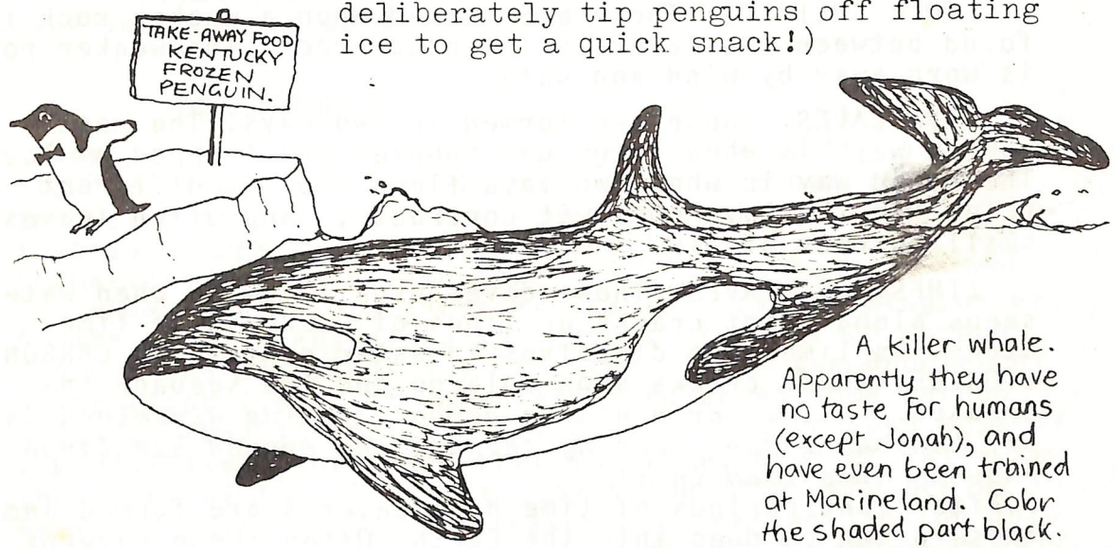
CONTENTS.....

Artist: W. Prohasky.

Famous Animals, no 2

OLD TOM - The Whalers' Friend.

Killer whales are noted for three things:
(1) their longevity (that means they live a long time - as long as humans),
(2) their appetite (13 porpoises & 14 seals were found in the stomach of one killer whale, and 32 fully grown seals in the stomach of another!!), and
(3) their cunning (they have been known to deliberately tip penguins off floating ice to get a quick snack!)



A killer whale. Apparently they have no taste for humans (except Jonah), and have even been trained at Marineland. Color the shaded part black.

Old Tom, the killer whale, was no exception. He was seen off Twofold Bay in N.S.W. most winters between 1843 and 1930, and probably lived to be 90. With his pack of about 40 other killer whales he would round up fin whales (much bigger whales with no teeth) and then swim into Twofold Bay to let the whalemen know - by banging his flukes (tail) on the water. The whalers and the killer whales would then help each other dispose of the fin whales (the men getting whale-oil and the killer whales a good feed) - sometimes by driving them right onto the shore.

Just another TALL story you say? Old Tom, the leader of the pack, had unmistakable scars on his back, and his skeleton can be seen today in the Eden Museum.

CAVES and DRIPSTONES

Within Australia, 4 major types of cave are found and each kind is formed in a unique way.

COASTAL CAVES: These are formed by the continual bombardment of the waves which carry abrasive material like sand and pebbles. The south-west coast of Victoria is exclent place to find this type of cave.

ROCK SHELTERS: These are formed when a weaker rock is found between two layers of stronger rock. The weaker rock is worn away by wind and water.

LAVA CAVES: These are formed in two ways. The most common way is when large gas bubbles are trapped by lava. The scond way is when two lava flows cool at different rates. As the lava cools it contracts, and often leaves small pockets of air.

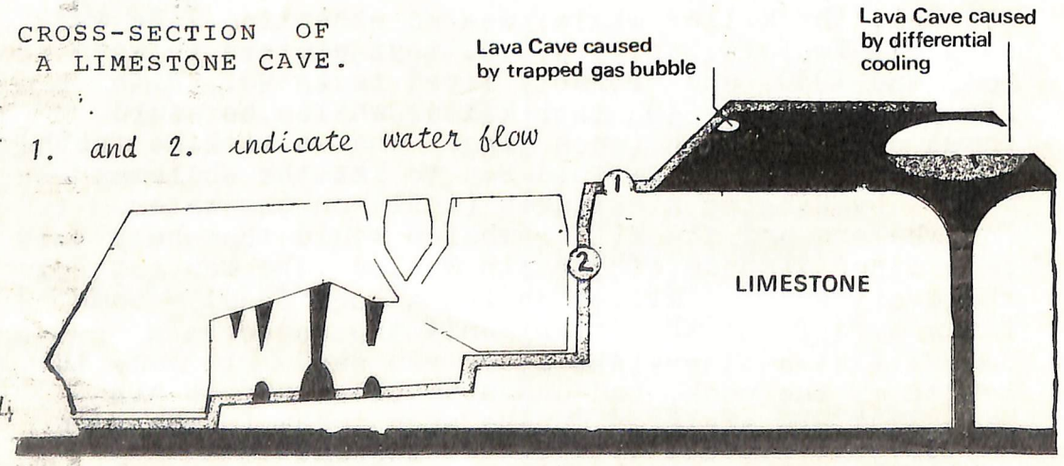
LIMESTONE CAVES: These caves usually begin when water seeps along joint cracks or lines of weakness in limestone. As limestone dissolves in water containing CARBON DIOXIDE, these cracks soon enlarge and the seepage increases. *All water contains carbon dioxide dissolved in it, however water seeping through the ground has large amounts dissolved in it.*

After long periods of time huge caverns are formed and these often go deep into the Earth. Often these caverns meander for miles only stopping when the layer of limestone finishes.

In Australia, there are many areas which have this kind of cave. Under the Nullabor numerous such caves are found. *See if you can find out the composition of the plain, it may explain why so many caves are found.*

At Jenolan (N.S.W.) and at Buchan (Vic.) these caves have been opened up to the public.

CROSS-SECTION OF A LIMESTONE CAVE.



DRIP-STONES:

After the initial cavern has been formed, the original flow of water is often altered. This does not mean that the water stops altogether. Seepage still occurs. But now instead of removing the limestone it now builds up formations of pure limestone.

Why? These formations are caused by dripping water. As the water seeps along the cracks it picks up carbon dioxide and dissolves any limestone. When the droplet of water reaches air, it immediately releases some carbon dioxide. When it does this it also has to release some of the dissolved limestone. When the water droplet falls to the floor of the cavern it leaves the limestone behind. As the droplet falls it releases more carbon dioxide into the air. On impact a further deposit of limestone is left.

After many thousands of droplets stalactites and stalagmites begin to take shape.

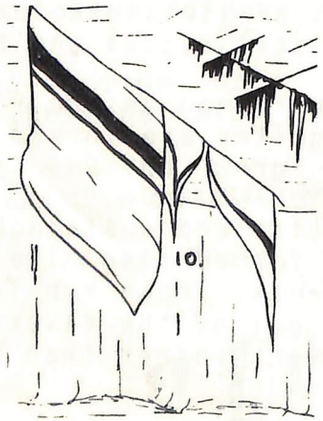
Which is which? Stalactites are formed on the roof of the cave and "grow" down. Stalagmites are formed on the floor of the cave and appear to "grow" up. *See if you can find a way to remember which is which!*

Columns are formed when a stalactite and a stalagmite grow together. Other formations are formed also. The prettiest being called "blanket" sheets. These are formed when their is a large crack in the roof of the cavern and the water flow is from the whole crack rather than from just one point.

Dripstones

Drawings on this page have been reproduced with the permission of the Department of Minerals and Energy, Melbourne. The pictures are from the booklet, "The Buchan Caves" by J.A. Talent. You may obtain copies from the Publications Section of this Department.

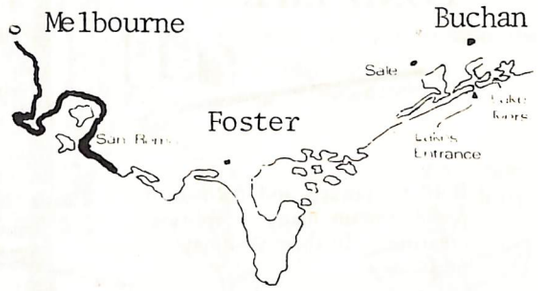
1. 2. 3. Stalactites
4. 5. 6. Columns
7. 8. 9. Stalagmites



10. A blanket, or Bacon Sheet of Dripstone.

visit the Buchan Caves

Although the Buchan District was first settled in 1838, it was not until 1889 that a survey of any of the caves was taken. James Stirling, a Geologist for the Mines" Department carried out a survey. In his findings, he recommended that the caves be developed along the lines of the Jenolan Caves in N.S.W. Some 10 years later, anoth-er geologist, A. E. Kitson recommended that the land around the caves be set aside as a reservation. As a result two areas of 40 hectares and 30 hectares were set aside.



Among the early explores of the caves were Frank Moon, Dr. John Flynn(He is famous in another field. *What is this field?*) andDon McRae.

Frank Moon was the outstanding cave explorer and aided by the photograghs taken by Dr. Flynn convinced the Victorian Government in opening the caves to the public. Mr. Moon was appointed the first Officer-in-Charge. He was also to continue in cave exploration.

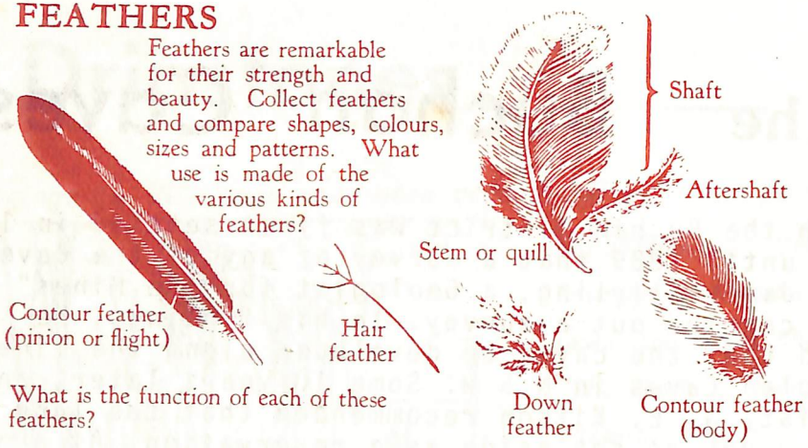
In 1907, Mr. Moon discovered the Fairy Cave; and the following year the Royal Cave. These are the most visited caves today. It was also under Mr. Moon's direction that new entrances were excavated.to link the tunnel to the The caves were also illuminated and various natural features were protected so that visitors could inspect the caves.

Today you can visit the caves with relevant ease. Guides conduct tours daily.

In the far west of Victoria, we find another system of caves open to the public. These are "The Pricess Margaret Rose" Caves and they are found near Nelson in the Glenelg National Park. Both of these places are well worth a visit the next time you are in the vicinity.

FEATHERS

Feathers are remarkable for their strength and beauty. Collect feathers and compare shapes, colours, sizes and patterns. What use is made of the various kinds of feathers?

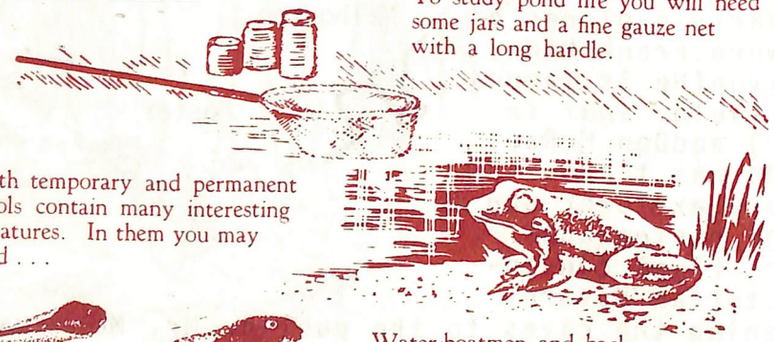


What is the function of each of these feathers?

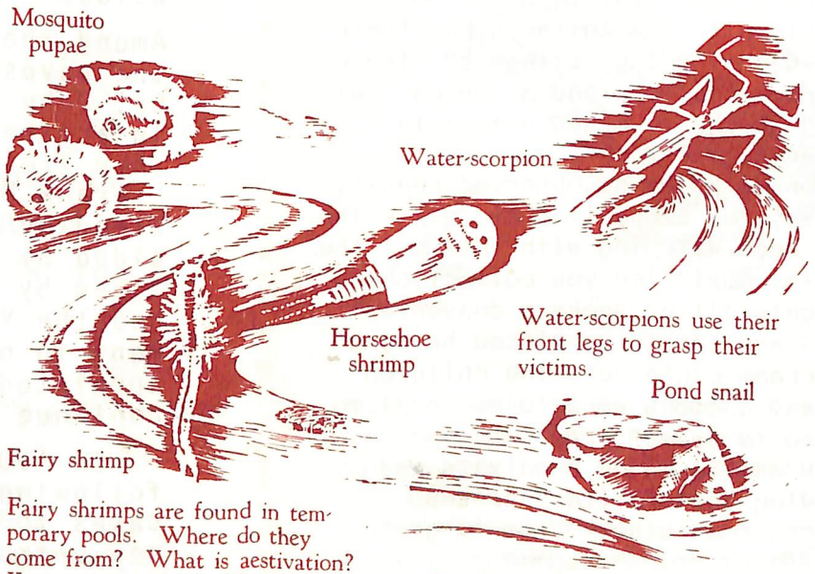
Things to Look for

POND LIFE

To study pond life you will need some jars and a fine gauze net with a long handle.



Both temporary and permanent pools contain many interesting creatures. In them you may find . . .



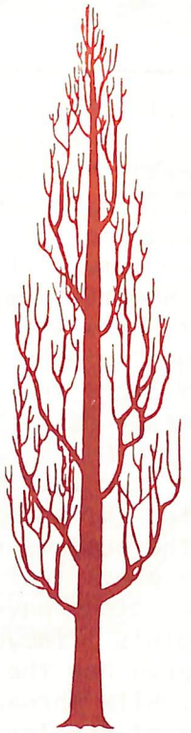
Water-scorpions use their front legs to grasp their victims.

Fairy shrimps are found in temporary pools. Where do they come from? What is aestivation? Keep an aquarium. Place a little sand, a few pebbles and some water-weeds in a jar. Introduce some of these pond creatures and study their life history.

Pond snails will help to keep your aquarium clean. Do not empty the aquarium. Remove dead creatures and top up with fresh water. Use a gauze cover.

in APRIL

THE FALL OF THE LEAF

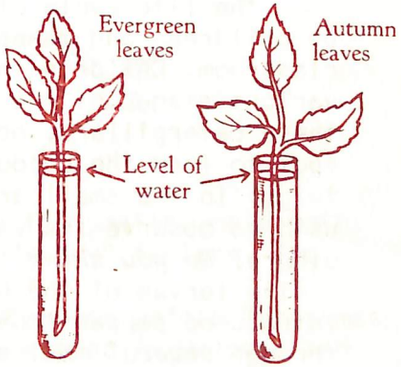


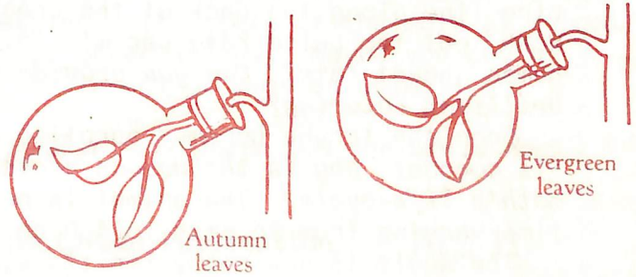
In autumn, some trees shed all their leaves. Soon you will see leaves of these trees change colour before falling. Why do they change colour? Why do they fall?

Carry out these experiments with leaves. Note what happens in each experiment and try to find an explanation for the results.

A little oil placed on the water prevents evaporation.

Plasticine will help to make the jars airtight.





In the Schoolground

B. Archibald

I suppose many of you will have discovered the many species of caterpillars nibbling away at the leaves of our eucalypts this summer- notably "spitfires", "chinese junks" and old faithful, the Emperor Gum caterpillar. *(Despite the fact that most of us have referred to the caterpillar as the Emperor Gum this is incorrect! GUM EMPEROR is his proper name.)* It was not difficult this month to find a subject to write about. In my class most children at one stage or anotherrequested containers with lids and came the lunch-break, streammed off to the "bush" around the school oval in order to capture any muncher that dared show himself. The children had their share of 'stings as a result of mis -handling the "stingers". Those endeavouring to collect the Gum Emperor sometimes had a job on their hands as the caterpillar sternly held ground in order not to fall prey to the wildly excited caterpillar hunters.

The life cycle of the Gum Emperor Moth can be observed readily by children and makes a convenient way to study life cycles in the classroom. Children in my class have been watching with interest the various stages of the moth's lifecycle. Next time you collect one of these caterpillars, observe how the caterpillar seeks a convenient spot to form the cocoon. Silk threads are carefully placed between twigs. In the small area of the ice-cream containers the children used to observe the various stages many cocoons were formed next to others. *Do you think this would happen in trees? Why?*

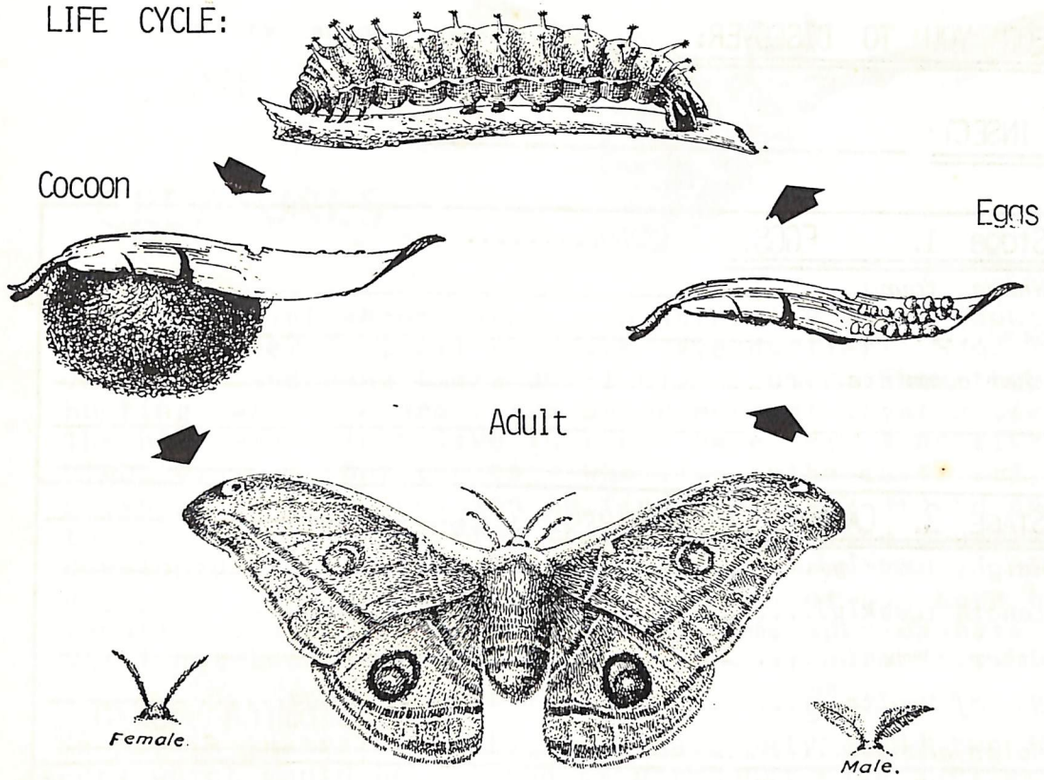
The larvae of the Gum Emperor Moth are found on Eucalypts and introduced pepper trees. The slow moving "caterpillar" passes through *several* moults- changing color from black- blue to green with red, blue and yellow knobs.

If you observe the caterpillar closely you will notice a pulsing blue line along the back of the creature. This is the beating heart. Work out the pulse rate per minute. How does it compare with the human heart rate? *Can you provide reasons for the caterpillar's brilliant coloring?*

Soon the larvae becomes purplish and looks for a place to 'spin' its cocoon. *Why is the cocoon necessary for the next stage in the moth's life-cycle?* The animal is now a pupa. After a interval of time varying from 26 days to 400 days the moth is ready to emerge.

The adult is now ready for its work of egg production. The female

LIFE CYCLE:



moth is able to be clearly distinguished from the smaller male moth. The females are larger and heavier and have "hairy" feelers. The males have fern - like feelers.

Generally one brood of caterpillars spin cocoons before Christmas and a second brood spins during Autumn. Moths appear in October and in late summer. Winter months are spent in the cocoon (pupa).

Be on the look - out for the eggs of the Gum Emperor Moth. Collect some eggs and watch this interesting life cycle of the moth at school or at home. Let us hear about your observations! Maybe you could find out the life cycle of another insect or even an animal!

Turn over the page and you will find a page where you can write down your observations.

FOR YOU TO DISCOVER: *(Nature Notes Worksheet)*

INSECT: _____

Stage 1. EGGS. *COLOR.....*

Where found.... _____

Size..... _____

Other comments..... _____

_____

_____

STAGE 2. CATERPILLAR. *Colors.....* _____

Weight (weekly).... _____

Length (weekly).... _____

Other comments..... _____

No. of Moults..... _____ *Duration of stage.....* _____

Color changes..... _____

STAGE 3. COCOON/PUPA *Color....* _____

Shape.... _____

Duration.... _____

Other comments..... _____

_____

STAGE 4. ADULT. *Color.....* _____

Marking on wing.... _____

Wing span.... _____ *Sex.....* _____

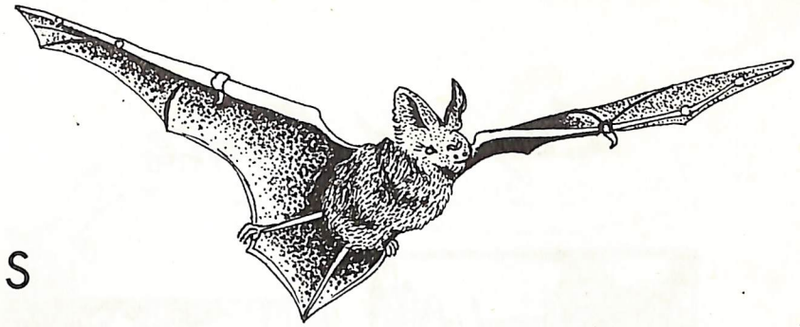
Weight..... _____

Behaviour..... _____

Length of Life..... _____

Other comments..... _____

_____



CAVE CREATURES

When you think about caves, you naturally think about bats. However, not all bats are cave dwellers. Some live in trees and hang there until night comes. Then they go hunting. *What are creatures which hunt at night called?* The bats who mainly live in trees have very sensitive night vision. But the bats who live inthe caves rely on a system of echo-location to find their way around and to hunt with. It was from this that Radar and Sonar were developed. *You may be able to find out more about this yourself.* In Australia over 50 species of bat have been identified. Scientists think that some species have still not been identified. *What type of animal is abat?*

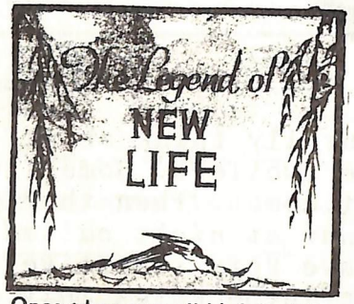
Other Animals.

So far in Australia, Scientists have only found two insects which could be classed as permanent cave dwellers. These two animals have *adapted themselves* to live permanently in the dark. Many other insects are found in caves but they are not permanent occupants. The two insects are a beetle and a cockroach. The "visiting" insects include springtails, flies, bugs, moths, silverfish,praying mantids and lice. The glow-worm is also found in caves and gets its name from its ability to glow in the dark.

Most other animals found in caves are visitors also. They go in hunting or hiding or to die in peace. Some birds use caves for their nests. The most common bird found in caves is the barn owl. Other birds include rock warblers, swiftlets and welcome swallows.

Scientists have found that caves are among the best places in the world to find fossils. Why would caves be a good place to look for fossils.

Legend Time

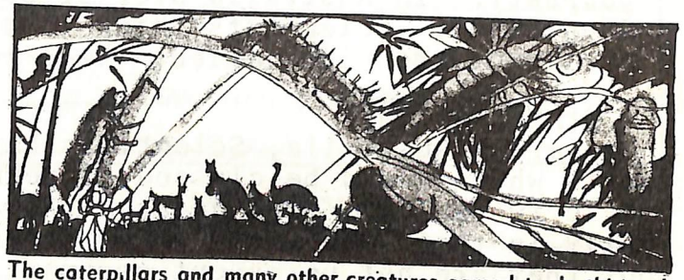


Once when a small bird died the other creatures asked the crow to explain the Mystery of Death.

And the crow said: "There is no mystery. Death simply takes us from this world to a better one."

Then the others replied: "How can this dead bird go to a new world while his body is here?"

So the crow asked if any would agree to die and then return to earth to show their new bodies.



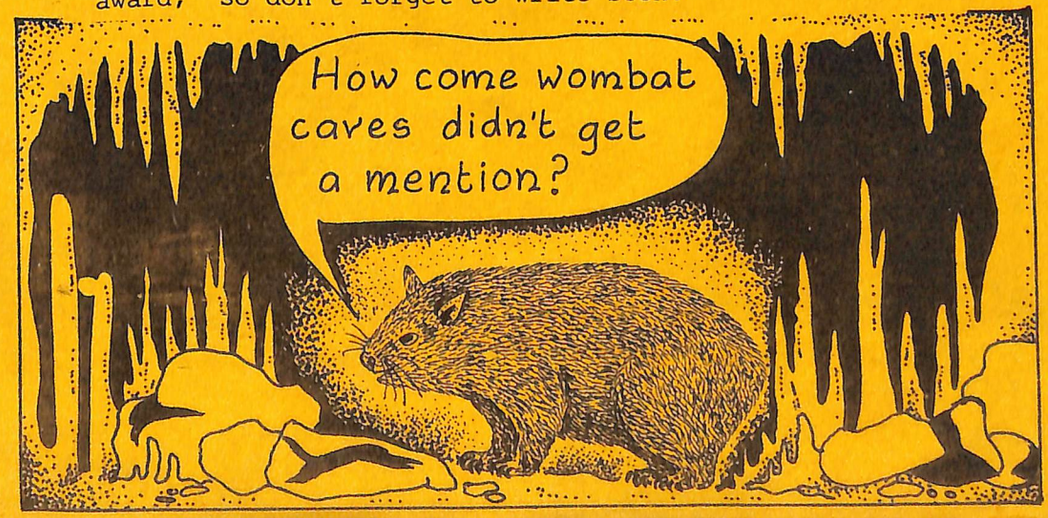
The caterpillars and many other creatures agreed to do this and did not eat, nor move, nor open their eyes for many months. Then their bodies became hard and cold like the bodies of the dead.

But suddenly, from each old body, sprang winged dragon-flies, moths, and butterflies, radiant with colour and heavenly beauty, bringing to all things a promise of new life and new happiness.

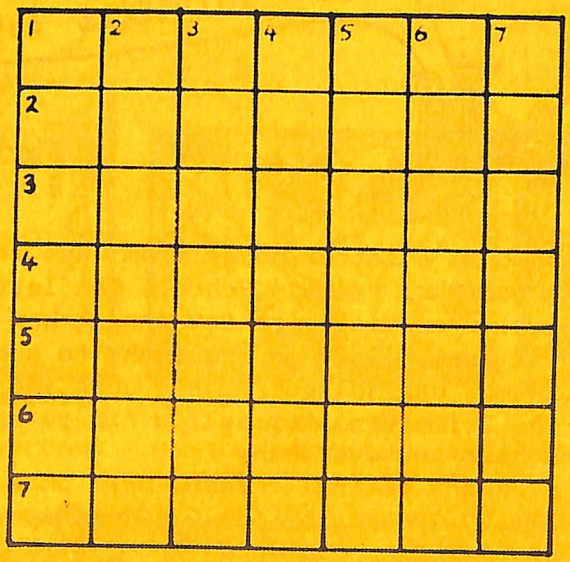
This month's letter comes from Jane Schwollius of Ringwood East Primary School. The letter is about whales. The Victorian Government has just announced it has joined in the fight to save the whale. Mr. Hamer has joined PROJECT JONA and has written to the Prime Minister asking him to end whaling both here and overseas.

Jane's letter: There were once three whales swimming around in the ocean. They ventured to close to shore and they became stranded. The local council decided to leave them there until they died. Many people wanted the whales towed back out to sea. Other people thought they should be left to die. When the whales died they were cut up and sold to a whaling company. Isn't this cruel?

Thank-you Jane for your letter, your book award will arrive soon. All letters published will receive a book award, so don't forget to write soon.



Superword!



WOW! A seven by seven cross-word without one blank!! I must get my dictionary out!

From: "Oddities & Curiosities of Words & Literature" by C.C. Bombaugh & M. Gardner. (A Dover book.)

ACROSS (& DOWN!)

1. When she has laid the eggs a mother bird _____ down on them to hatch them.
2. Wally Wombat was an _____ in the Animal Olympics.
3. The 'platypus' is a very _____ animal.
4. A _____ is someone who betrays their own country.
5. Many years ago, people would light a _____ instead of switching on the electric light.
6. When playing with large pythons, one must be careful that they don't crush and e_____ you!
7. The teacher your parents had was probably s_____ than the one you have now (believe it or not!)

anagrams - made by rearranging the letters in a word or a phrase.

punishment = nine thumps!

Snail = slain (gulp!)

The eyes = they see.

one hug = enough.

Spring, summer, autumn, winter = "Time's running past," we murmur.

Nature Notes = True, no teas'n'!

The countryside = no city dust here!

elephant = Make up your own anagrams!

Palindromes - words or sentences that read the same backwards!

Eg. Was it a rat I saw? Ten animals I slam in a net! Do not start at rats to nod. A man, a plan, a canal – Panama!

Can you make up some palindromes? (Words like madam, noon, step, stops, etc. are very handy for sentences.)

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