nature notes

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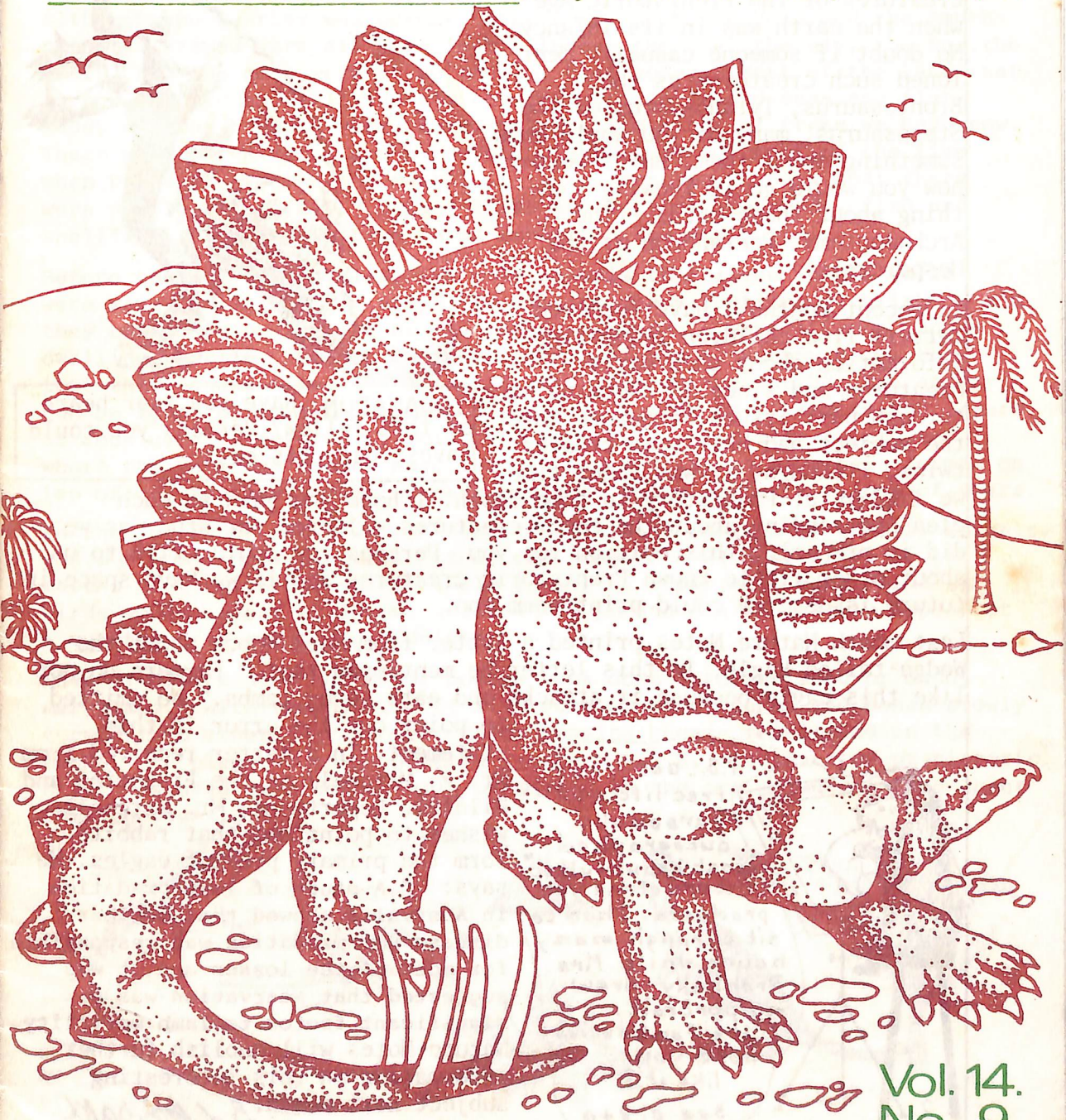
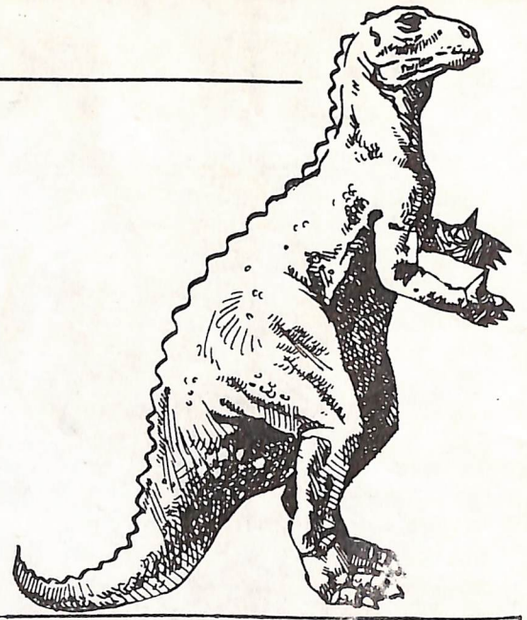


Vol. 14.
No. 9.

Editorial.

This month Nature Notes takes you back in time to look at some of the creatures of the Prehistoric Age when the earth was in its infancy. No doubt if someone casually mentioned such creatures as the Brontosaurus, Tyranosaurus or the Stegosaurus, many of you would know something about them. But I wonder how you would go in knowing something about these birds - The Archaeoptemx, Pteranodon or the Hesperornis?

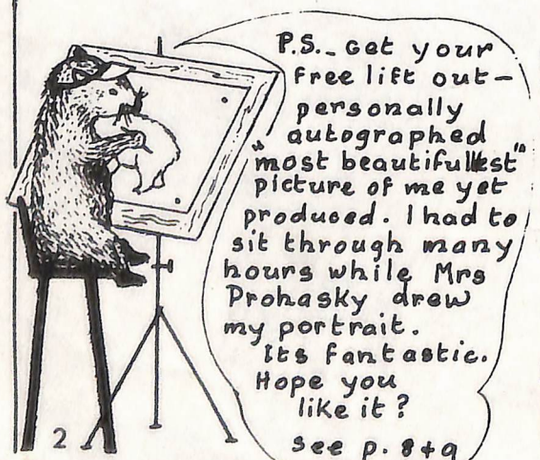


IGUANADON: Have you ever heard of this fellow? Perhaps you could investigate his past.

In recent months I have received letters from children requesting information about such early creatures and since in checking back through past issues of Nature Notes, the subject had only been treated twice, I thought it was about time we looked at Prehistory in some depth. I hope you gain as much pleasure reading about the early creatures selected for study as we did in preparing this edition for you. Perhaps you could write to us about other little known Prehistoric creatures and if we have space in future issues, we could print them too.

Last month Nature Notes printed a letter from Mark Woods about the Wedge-tailed Eagle. In this letter he mentioned that " Farmers do not like this eagle because it attacks and eats young lambs." We omitted to point out the error in this statement. In a letter received from Mr. R. Mitchell of the Fisheries and Wildlife Department, Mr. Mitchell wishes to point out that rabbits form the primary prey of eagles. He says: " A study of lamb predation in Australia showed that neither disease nor predation was responsible for most of the losses and it was suggested that starvation was a significant factor to lamb mortality. Nature Notes will publish further information on this interesting subject next month.

B. L. Archibald.
Editor.



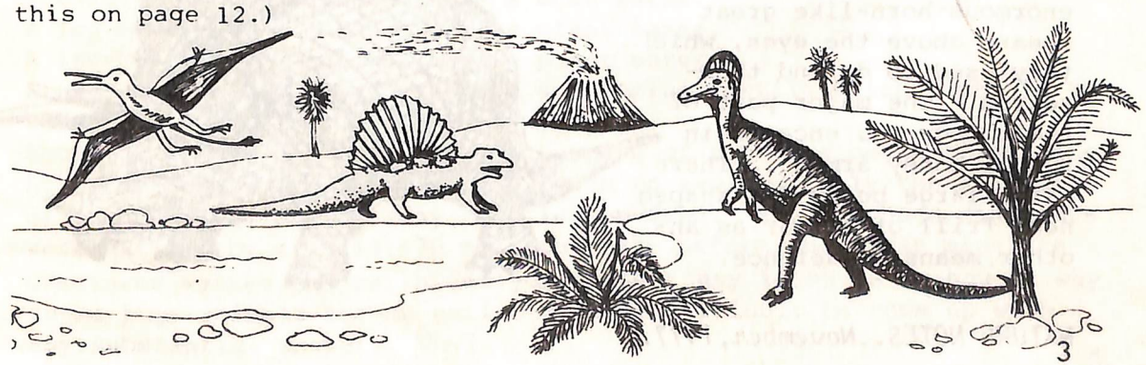
Dinosaurs.

Millions of years ago the world was a much wetter place than it is now. Although the weather was warmer, even near the North Pole and the South pole, it stayed warm all year long. Indeed the sea, the sky, the sun, the stars, and the moon were as we know of them today. Most of the land that is now pasture and hillside was covered with lakes and seas and flat muddy marshes. There were trees, but not the kinds of trees we have now. There were large ferns and horsetail plants, but for most of the time when Dinosaurs roamed the earth, it is interesting to note that there were no flowers at all. Dragon flies and beetles, seaweeds, fish and shellfish in very primitive forms inhabited the earth too.

Before the age of reptiles, the only animals that lived in the world were water animals. For about 100 million years reptiles flourished, and they roamed in every part of the world. Dinosaurs were a large land - dwelling reptile. No man has ever seen a dinosaur, so how do we know that they looked like, and when did they live on the earth? The answer can be found by studying rocks. The earth is made up of layers and layers of rock usually covered by soil. On mountains, or cliffs by the sea where the rock has broken away, we can see how layers have been formed on top of one another. This process has been going on for millions of years.

In the layers of rocks we can find fossils, the remains of shells, animals, and skeletons from the past. If we can imagine a 24 hour clock of the earths history, living things would appear at 8.pm (soft body animals) birds would appear at 10.pm, grass at 11.pm and man would only appear at a quarter of a minute to midnight.

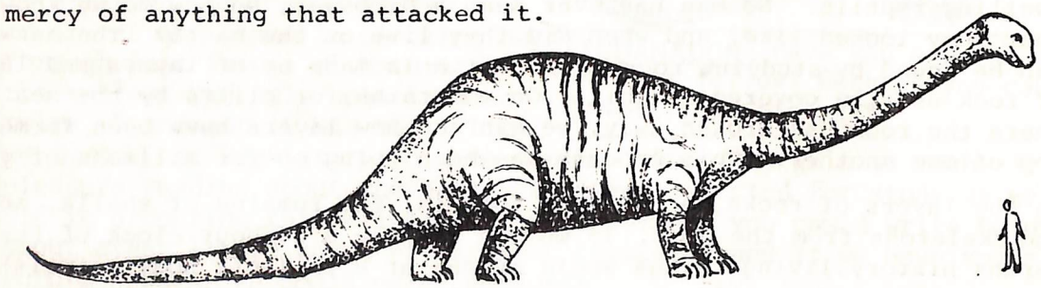
When dinosaurs died out their bodies sank down into the sand or muddy marshland. With the passing of time some of their teeth and bones slowly turned into mineral or stone. These remains became fossilized in the rocks. In places such as Siberia in the U.S.S.R. carcasses of prehistoric creatures have been found fully preserved in the ice. (You can read about this on page 12.)



Prehistoric

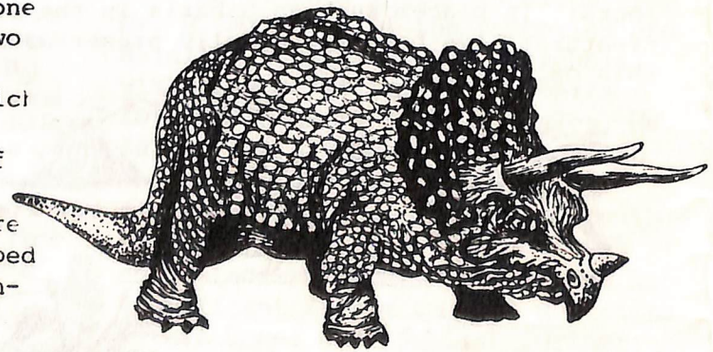
Brontosaurus.

This prehistoric giant was the largest animal that ever lived. They were about 21 metres long and weighed 30 tonnes. Their legs were as thick as large tree trunks. They were so huge that normal legs would not have been able to support the massive frame, particulaly on land. There were claws on the end of their feet to help grip the slippery bottoms of lakes and swamps. They spent the majority of their life partly submerged in water, because of their great bulk, it was difficult for them to stay on land for any length of time. They had a very small brain, no bigger than that of a kitten! They were vegetarians, living off soft water weeds and, in order to survive, they had to keep eating all day long. It may surprise you to learn that despite its size the Brontosaurus was quite harmless and it really was at the mercy of anything that attacked it.



Triceratops.

The name of this giant reptile means "three horned face", it was the biggest and the last of the horned plant eaters. It was 7 metres long, it looked something like a very large rhinoceros and lived primarily in North America. They had one horn on their nose, and two enormous horn-like great spears above the eyes, which they used to defend themselves. The major part of their body was encased in tough, boney armour. There was a large boney fan shaped neck frill of armour as another means of defence.



Reptiles by W. Prohasky.

Tyrannosaurus.

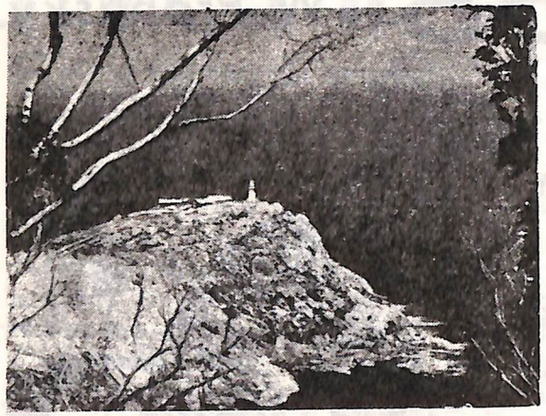
This dinosaur was undoubtably the most terrifying animal that ever lived. It was called the "king of the tryant reptiles". It was 15 metres long with a large head, 1 metre 25 cm long, a huge and powerful jaw, long jagged teeth up to 15 cm long and 2½ cm wide, with tearing edges like a jig-saw blade and as sharp as a razor. Fossil bones of the Tyrannosaurus Rex have been found in America. It had descended from earlier reptiles which over a period of time had found it an advantage to walk on their hind legs. Its front legs were very small in comparision to the two enormous hind legs, the front ones being thought to be used only for holding and tearing carcases of its prey. It was a flesh eater, it strode across the land at considerable speed, terryfing anything within its reach. Some of the other creatures had boney body armour which helped to protect them from this fearsome tyrant.

Our National Museum of Victoria has just received its first whole dinosaur skeleton. It is called a Struthiomimus dinosaur, which is 4 metres long and it used to live in Mongolia. The Museum at present has only 4 "casts" or copies of dinosaur bones on show. They are :-

The skull of a Tyrannosaurus - a meat eater.
A leg-bone of a Brontosaurus - a plant eater.
A leg-bone of a Rhaetosaurus - a plant eater.
A skeleton of a Thaumatosaurus - a swimming reptile which lived in the sea.

About 100 million years ago, the numbers of reptiles began to decline. At first birds, and then mammals began to evolve. Only the ancestors of the smaller, present-day reptiles suvived. All the huge dinosaurs were extinct by at least 70 million years before the first man-like creatures walked the earth. Can you suggest any ideas as to how or why these huge animals became extinct? It is difficult to come up with any substantial answers. Why?

VICTORIA'S NATIONAL PARKS.



Wilson's Promontory National Park

Last month I told you a little about national parks in Victoria. This time, you can join in. I'm going to ask you ten questions about nature conservation and national parks. Anyone who answers the questions and sends their answers to us: The National Parks Service at 240 Victoria Parade, EAST MELBOURNE , 3002, will be sent two leaflets, one telling you about all Victoria's parks - where they are, their interesting features, whether you can camp, and so on. The other leaflet will be about a particular park, say Wilson's Promontory or Mount Buffalo, or perhaps one you may not have heard of, like Mount Eccles, Seawinds or Hattah Lakes.

These questions were asked at one of our sessions during the Royal Show. Did you go into the new Government Pavilion while you were at the Show? You would have seen the Ministry for Conservation's display with interesting things such as an electric car, a large fish tank, a trail bike wheel going over a sand hill, a robot made of tins which could be recycled and a display showing good and bad camping practices. All these have something to do with conservation, which means using our resources carefully and not wasting or polluting or destroying the environment.(The National Parks Service is part of the Ministry for Conservation.)

Lake Hattah

Anyway, about 30 children answered the questions at the Show and nearly all got them right I hope you do too.Some are easy, some are harder - discuss them in school or at home.

Mind Stretchers

1. Name three national parks in Victoria?
2. Which is the nearest national park to your home?
3. Name four types of native birds found in Victoria.
4. Pick the 'odd man out' and explain why? Bandicoot, echidna, rabbit, platypus.
5. Same again! Pick the odd one and say why? Wattle, thistle, blackberry, boneseed.
6. Name two Victorian animals whose names start with 'K'.
7. Why aren't cats and dogs allowed in national parks?
8. Why should you stay on tracks when walking in national parks?
9. Rangers look after national parks. What are TWO particular jobs they might do?
10. Do you think national parks are important? Explain why.

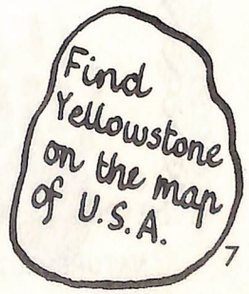
Good answering. Next time I'll tell you about the national parks in one part of Victoria - The South-West.

Michael Howes.
National Parks Office.

'Yellowstone'

"Yellowstone is the largest and most famous as well as the first of our National Parks. Approximately one and one-half times as large as the state of Delaware, enclosing 3,472 square miles of scenic natural wonders, it lies in the northwest corner of Wyoming and borders into Idaho and Montana."

DID YOU KNOW... that the idea of National Parks originated in America in 1870? An area known as Yellowstone, discovered around 1807-1808, was the object of an expedition of exploration and research. At Yelowstone were geysers that sent up columns of hot water 21m., steaming mud pools and many natural wonders never seen before. Yellowstone was declared a National Park on 1st. March, 1872. The Bill established the principle that an area of land of great beauty and scientific interest should not be exploited-the land being kept for all the people,forever.



To All My Friends.

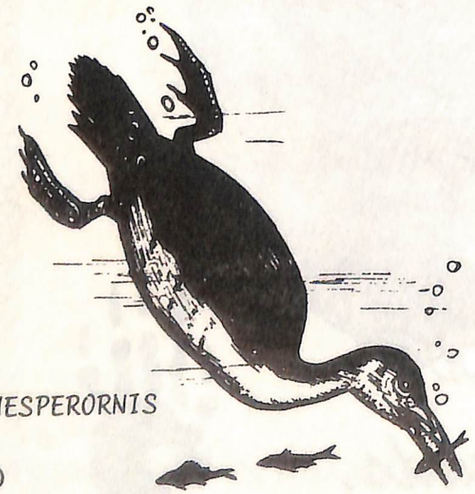
THE ORIGIN OF BIRDS.

A great scientist once described birds as "reptiles with feathers". This is a good definition because, though there are many differences apart from the possession of feathers or scales bewteen the two groups there are very many likenesses.

Usually we are able to trace the way in which groups of animals evolved from simpler and earlier groups because quite good series of fossils have been found linking the two groups. However in the change-over from reptiles to birds only three fossils have been found which are part-way between reptiles and birds and these are fossils of the one type of creature. This has been named Archaeopteryx - the ancient winged creature. Although this creature, whose fossils were found in a fine-grained stone in quarries in Germany, (stone which was formed about 170 million years ago) had feathers and could glide even if it could not fly well, it had a skeleton which is quite like that of a reptile and unlike that of a modern bird.

So we have had to use the methods that detectives use and compare birds with the extinct reptiles to find what we believe happened in the change from reptile to bird. We now believe that the latest reptile ancestors of birds lived about 225 million years ago and were Pseudosuchians - small creatures which ran on their hind legs and had skulls which are very much like those of modern birds.

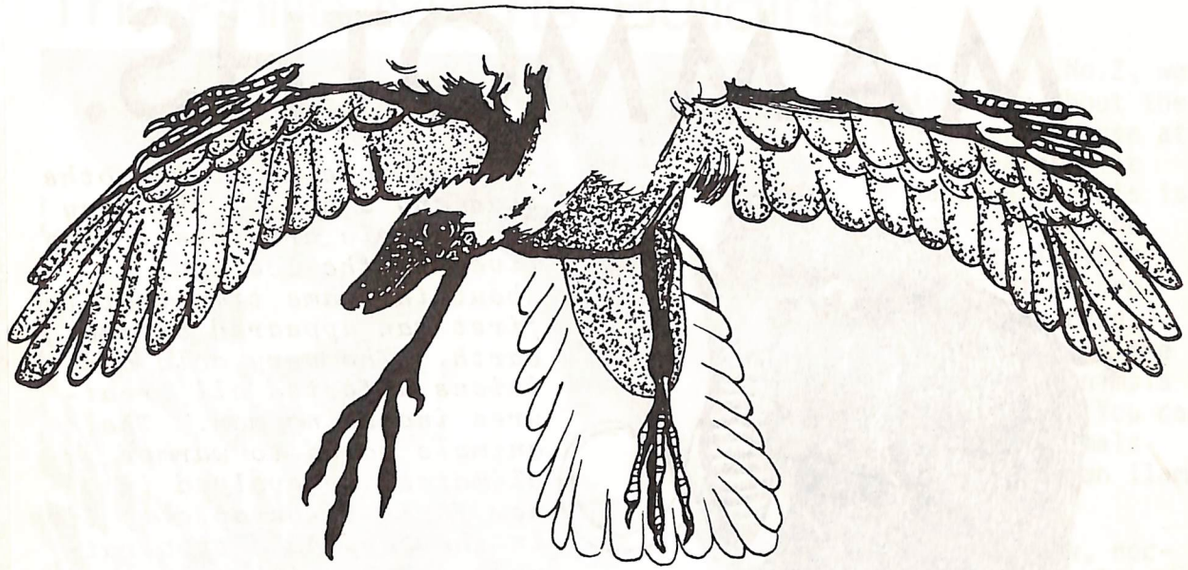
Perhaps you could carry out some investigations for yourself and see how far back in time you can trace the beginnings of birds.. a visit to the National Museum in Melbourne may be a very good starting point.



HESPERORNIS

HESPERORNIS: lived about 100 million years ago on America's inland seas. Its beak was lined with sharp reptilian teeth. It was about the size of a small seal. It could not fly but made up for this by being a strong swimmer.

The PTERANODON was the largest known flying animal. It lived in America on cliffs and islands and fed by scooping fish from the sea with its beak. It had a pouch under its beak in which it carried food for its young. Its wing-span was about 8 metres and it weighed 22 kilograms.



The earliest known bird, ARCHAEOPTERYX (which means ' ancient wing' in Greek), flourished 150 million years ago. Several features show that the creature decended from reptiles - its head for instance was like that of a lizard and its jaws have teeth. Also its wing bones end in sharp claws. Would this bird have been an excellent flier? Why do you suppose this bird had claws?

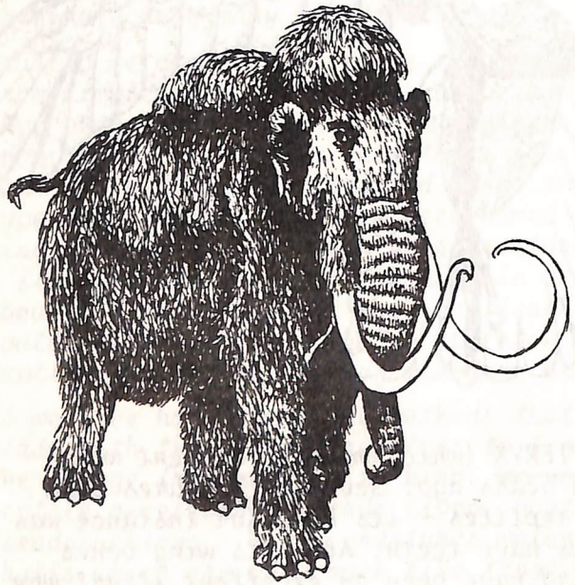
PHORORHACOS. This 'man sized' bird lived in South America. It could not fly and it most probably caught its food by running down small reptiles and mammals. In appearance it was not unlike its larger relative, the Diatryma which lived in North America much earlier than the Phorohacos. (The head of this larger bird was as large as the head of a horse)

PHORORHACOS

LIFE has existed on earth for more than 2,000 years, but birds are not nearly as old as this. Research carried out on fossils of animals preserved in clay suggest that the first bird lived about 140 million years ago, that bird being the Archaeopteryx.

Ringwood East P.S.

MAMMOTHS.



We know more about mammoths than any other of the many prehistoric creatures. They lived in the Ice Age, at about the same time that the first man appeared on the earth. The very cold conditions affected all creatures including man. The animals moved to warmer climates, or evolved into new forms to be able to live in the very cold temperatures. Many with the passing of time grew shaggy fur coats to enable them to survive. They had curved tusks their bodies being covered with red and black fur. Unfortunately the warmer weather which followed the Ice Age was not suitable for their thick coats. The mammoth became extinct after the Ice Age. Can you suggest possible reasons for this?

Three million years ago some mammoths fell into the icy sea near Siberia U.S.S.R. and were completely frozen. (One such discovery occurred in the U.S.S.R. in 1901). It was found that they had been so perfectly preserved that it was possible to eat the meat! Could this meat have been safe to eat? Why?

Only the ancestors of the smallest present day reptiles survived--lizards, turtles, crocodiles, and snakes for example. However the elephant - the largest of our animals today is not a direct descendant of the mammoth. You can no doubt think of other creatures that have their ancestors way back in time. Perhaps you could develop a time line showing how these creatures have evolved.

The Philip Morris Building.

In Vol.14,No.2, we told you about the Nocturnal House at the Healesville Sanctuary. This is now open to the public. In that issue of Nature Notes you read about some of the nocturnal animals rarely seen. You can see the animals daily between 11am. and 4 pm.

As you know, nocturnal animals sleep during the day and come out to feed at night. In this special building the lights are turned on at night and the animals sleep, thinking of course that it is daylight. During the day, the lights are turned off and the building is dimly lit with blue light. Why?

Another unusual nocturnal animal you will see is the feathertail glider. It measures only 15 cm. from the tip of its nose to the end of its tail. That's him in the photograph. It lives high among the leaves of gum trees where it feeds on insects and nectar. It is an agile climber and is capable of amazing acrobatics. Its Latin name is Acrobates pygmaeus. Can you think why?

A CASE moth FOR SUPER WALLY!

OUR CENTREFOLD HERO...

Our hero Wally Wombat was walking down the path one day when he saw a strange sight.....

....beautiful Miss Cecilia Caterpillar was becoming tangled in a mass of sticky web!

Good grief! She'll get strangled and suffocate! I must free her — this is a case for Superwombat! ....er... or was it Wombatman?

Silly blindfold... I can't see a thing...

Sw!? Small Womens?

After spending 3 hours in the nearest telephone booth changing into his costume, Wally emerges...

...to find that Cecilia's 'prison' is complete.

Never fear Cecilia dear, the mighty Superwombat's here!

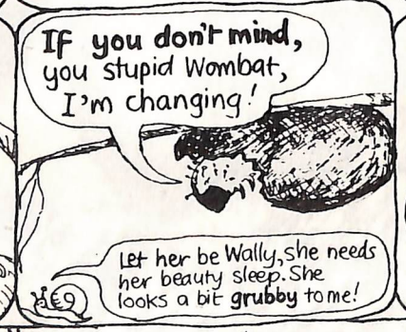
Wally takes drastic action to 'free' Cecilia!

RRRIPP!

EEEEEK!! HOW DARE YOU!

IF you don't mind, you stupid Wombat, I'm changing!

Let her be Wally. She needs her beauty sleep. She looks a bit grubby to me!



And sure enough, some months later, Wally noticed a beautiful moth emerge from Cecilia's cocoon....

Wow! It's amazing what make-up does for women now days!

Just so you don't make the same mistake as Wally, here are some common casemoths:

White & silky. Often found on 'swan' plants.

Brown. Found on gum trees.

Wanderer Butterfly Cocoon.

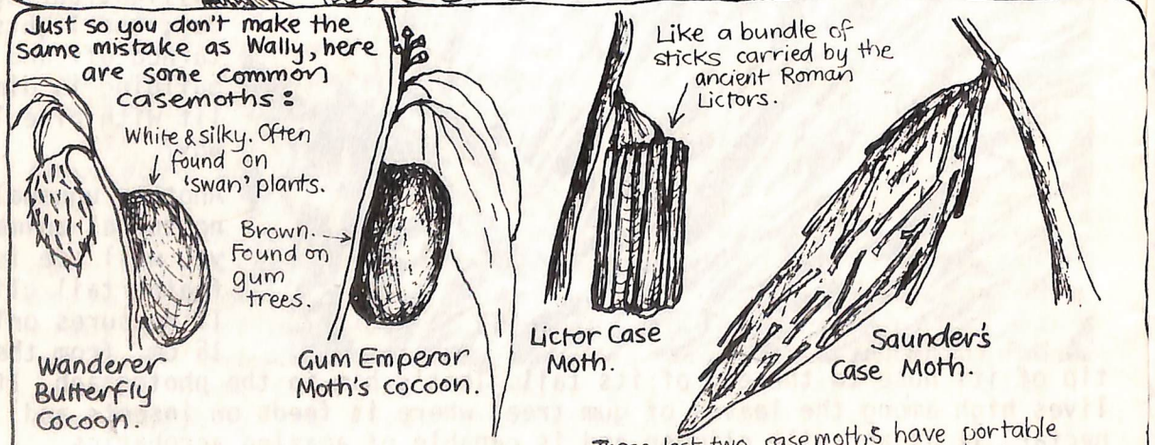
Gum Emperor Moth's cocoon.

Like a bundle of sticks carried by the ancient Roman Lictors.

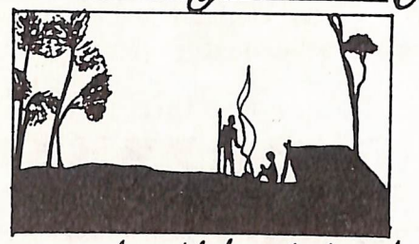
Lictor Case Moth.

Saunder's Case Moth.

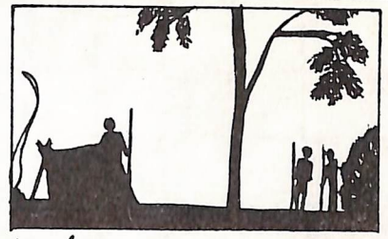
These last two casemoths have portable homes as they can move around.



A Legend of the Rainbow.

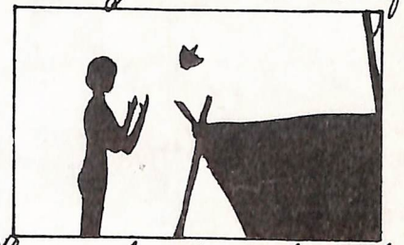


Long ago a beautiful girl loved and married a young man, whose brothers became very jealous.

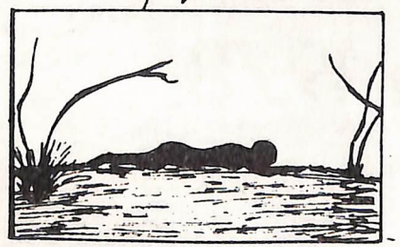


As the young man began to fear that they might even kill him, so one day he said to his wife:

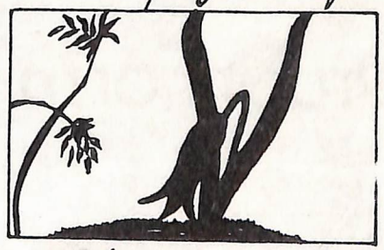
"If ever my brothers kill me, a small bird will come to you and blood will drop from its beak."



Then one day the brothers did kill him, and a small bird came to the camp of his wife.



And when blood dropped from its beak she knew that her lover was dead, and she cried out and fell to the ground weeping. Then her heart ached and she died, and even the skies began to weep.



But good spirits changed her body into a lovely flower and her dead husband became a rainbow; and so the young lovers of long, long ago will be able to smile at each other for ever and ever.

Mystery Message

1	2	3	4	5		6
7	8	9		10	11	12
13		14	15	16	17	18
19		20	21		22	23
24	25	26		27	28	29
	30	31	32	33	34	35
	36	37	38	39	40	
41	42	43	44			

The numbers under each letter tell you which square to put the letter in.

1. Largest Prehistoric bird. 22 32 4 34 27 44 20 29 42 36
2. Next year.. 10 11 12 13
3. Slithery, silent snakes sneak slyly. Got the Clue? 19
4. 15th. letter of the alphabet. 7
5. A non-worker bee. 3 23 43 28 29
6. A narrow opening or split in a rock formation. 21 14 41 19 17 2 35
7. A piece forming part of a skeleton. 25 37 30 18
8. 6 24 8 and me.
9. The two of 33 16
10. A prickly shrub with fragrant flower. 5 1 40 26
11. A rodent. 9 31 38

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