Carnivores
What has happened to the Carnivore Times? Go to page 6!
Volume: 3 2003 No: 1

CYCLES of LIFE

The living world around us has many different cycles. One of these is called the "life cycle". A life cycle is the different phases or stages of a living things lifetime. These phases are birth, growth (youth and adulthood), reproduction as well as death. Each phase is a change from the one before it. Sometimes the change is easy to see and sometimes it is not so clear.

Life ends with the decomposed remains of a gemsbok

Phase 1: Birth

Young wildebeest starting out life

Phase 2: Growth: From youth to adulthood

Although the life cycle of one living thing will end with death, the cycles of life continue with each new generation. . .

Phase 4: Death

The Hoodia succulent is flowering for reproduction

Phase 3: Reproduction

Camel thorn tree growing from young sapling into a giant

Life cycles are different lengths for different living things. Some are very quick, like a fly, while others are very slow like a Camel thorn tree. Some life cycles are simple while others are more complicated.

Mopane Metamorphosis

The life cycle of a moth, butterfly and some other insects is special because the shape changes completely. The body form and appearance of the insect is completely different at birth, in youth and as an adult. This complete change is called **metamorphosis**.

Many Namibians know the mopane worm, Omagungu (Oshindonga), very well because it is a traditional source of food. Baboons and birds also like to eat the Omagungu. Look at the mopane worm's life cycle below:

The moth is a type of Emperor Moth called *Gonimbrasia belina*

Phase 1: EGG

An egg is laid and ten days later the egg hatches.

Phase 2: WORM

The worm feeds on the leaves of the mopane tree to grow bigger and store energy. They grow to be 9 - 10 cm long.

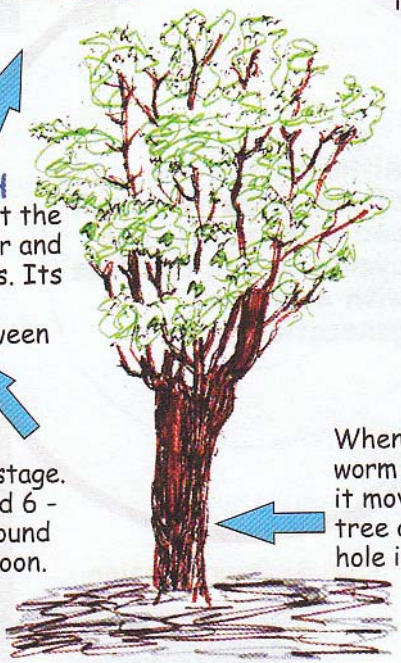
When the mopane worm is fully grown it moves down the tree and makes a hole in the ground.

Phase 3: PUPA

This is the resting stage. The worm will spend 6 - 7 months in the ground protected by a cocoon.

Phase 4: MOTH

The moth appears at the beginning of summer and dies after 2-3 days. Its job is to mate. The female will lay between 50-200 eggs.



The Mopane tree
Scientific name: *Colophospermum mopane*

Did you know?
One of the 4 Os regions in North-Central Namibia is named for the mopane tree in the Oshindonga language. Put the letters in the correct order to find out the name of the region.

I M S A O U T

Photographs on pages 1 & 2 courtesy of M. Dürr

MOPANE ART: Make your own metamorphosis

Now that you have learned about the life cycle of the Mopane worm you can make your own. Collect all of the materials and some friends. Follow the easy directions below:

Materials:

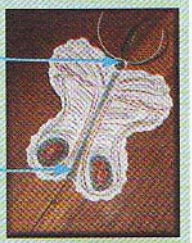
Kokis or colouring pencils; Scissors; Toilet paper tube; Stick (long and thin); Paper; 2 thin leaves

Step one:
Gather all materials.

Step two:
Cut out an Emperor Moth. Make sure that it is not bigger than the toilet paper tube.

Step three:
Colour in your Emperor Moth.

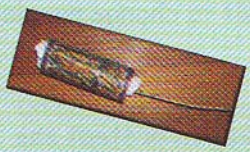
Step four: Make the moth's antennas.
Cut a small hole in the head of the moth. Insert the stem of the leaf into the hole (You may need to add some glue to make it stay).



Step five:
Make a small hole near the bottom of the moth. Insert the tip of the thin stick into the hole. (The stick is there to help you hold your Mopane Metamorphosis).

Step six:
Now colour the outside of the toilet paper tube. This is the pupa of the Mopane Worm.

Step seven:
Carefully insert the Emperor Moth into the pupa.



Step eight:
Carefully pull the Emperor Moth out of the pupa.

CONGRATULATIONS, you have made your own Mopane Metamorphosis!

People and Personalities in Conservation

Name: Peter Cunningham
Organisation: Polytechnic of Namibia (Department of Nature Conservation)
Job Title: Senior Lecturer
No of years on the job: 3 1/2

What is your job?
I am a lecturer for the Department of Nature Conservation. I teach students the subjects Resource Management and Development Studies. I also co-ordinate the more advanced B-Tech Degree in Nature Conservation.

What is the Diploma in Nature Conservation?
It is a broad diploma with a variety of subjects (for example, animal and plant studies and ecology). It is aimed to teach people about the conservation and management of wildlife and the environment. The diploma prepares students to work in various jobs. For example as a ranger on a game farm or conservancy, as a tourist guide, and an officer/ ranger in the Ministry of Environment and Tourism (MET), and in the fishing industry.

Why did you want to be a lecturer?
I enjoy lecturing because I can expose students to new ideas and thoughts. I can raise awareness about the environment by "planting a seed" in my students.

How has the Diploma in Nature Conservation changed since Independence?
It has become very Namibianised. The original course was based on a South African course. We are adapting to changes in Namibia by adding new subjects that will better prepare students for developing fields. Some of these developing areas are Community Based Natural Resource Management (CBNRM), Environmental Education (EE) and Fisheries Management.

What do you find most challenging in your job?
Changing people's attitudes and views. It is very difficult to change people's attitudes towards "conservation".

Peter's Message to Namibia's youth:
It should become each individuals personal responsibility to protect the environment we live in. Ultimately our survival depends on our attitude. Awareness is good, but action is better.

COMPOSTING: a 'rotten' cycle

Orange peels, egg shells, apple cores... These are all food scraps no longer needed by us. We can use these food scraps and other natural waste to our benefit by making a compost.

Compost is a mixture of soil and partly decayed plant material. It is used to make soil more fertile and therefore better for growing crops like maize.

How does a compost pile work?

By creating a moist, warm and airy place, the natural process of decomposition (rotting) takes place more quickly. Bacteria and other very small organisms together with the help of worms, snails and insects break down dead materials.

Make your own compost pile

1) Choose a shady area protected from sun and wind for your compost pile.
2) On the chosen spot put down your first layer of old garden material.
3) Next add a layer of kitchen waste.

Continue to alternate these two layers

4) Next add a layer of animal manure.
5) Lastly put on a layer of straw or use old plastic to hold in the moisture.
6) After a few weeks turn your compost pile.
7) When the compost is finished it will be a rich, dark brown colour and smell of good clean earth.

Good compost material:

Dead leaves and weeds
Straw
Torn newspapers
Egg boxes soaked in water
Vegetables and household waste:
peels, tea leaves, coffee grounds & egg shells.

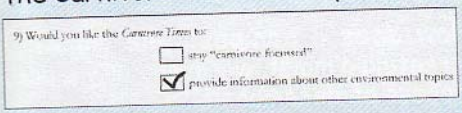
Composting tips:

~ Manage your compost pile well to prevent rodents and odours.
~ Do not use large amounts of one material at a time but rather use small amounts in each layer.
~ Keep the compost pile moist by adding water when needed.
~ Turn the pile after 2-3 weeks to give a fresh supply of air.

Drawings on this page courtesy of Share Net and ICCE

A new 'life cycle' for the Carnivore Times

If you remember, in the middle of last year a questionnaire was sent to you, the readers. Readers were asked several questions about how they feel about the Carnivore Times. One question asked was:



From the readers who returned the questionnaire, 73% said they wanted to learn about other environmental topics as well! **Some of the topics readers said they would like to learn about are**: biodiversity, alternative energy and cooking, birds, littering, water and global warming. Look at the development of the Carnivore Times below:

New Purpose: To explore topics about the whole Namibian environment and its conservation. To provide up-to-date information and hands-on activities for readers.

Egg: The Carnivore Times is born in 2001.

Worm: The Carnivore Times grows and finds its purpose: To report and explore topics about large carnivores and their conservation in Namibia.

Moth: A new purpose is defined and a "new name contest" is held.

Pupa: After readers are asked their opinion, the Carnivore Times decides to change.

GET INVOLVED in the "NEW NAME CONTEST"

This mini-magazine needs a new name. The name must explain what the mini-magazine is about (purpose), be likable, make sense and be fun!

If you have a new name for the **Carnivore Times**, send us your idea together with your name and address. All ages are welcome to enter the contest.
First prize for the New Name Contest is an environmental education book!

Send your name suggestion to:
The New Name Contest, NaDEET, P.O. Box 31017, Pioneers Park, Windhoek

All entries must be received by 9 June 2003

Chinga's & Nzovu's Corner

This year Chinga is turning 14 years old. Although she is still very wise, she is also getting very old for a cheetah. Chinga has decided to ask for some help from a very large friend, Nzovu, an elephant. As you may know, elephants are extremely wise and live for a long time. If you have a question for Chinga and Nzovu, please write to:
Chinga & Nzovu, NaDEET, P.O. Box 31017, Pioneers Park, Windhoek.

Dear Chinga,
How do birds mate? Do they have sex organs like mammals?
From Kleophas in Outapi

Dear Kleophas,
No, most birds do not have sex organs like mammals. When birds mate, the male and female will press their back ends (cloaca) together. The male bird thereby fertilizes the female bird. Mating usually occurs on the ground, however, swifts mate in the air. There are a few bird types that do have a penis. A Namibian example of this is the ostrich.

Most birds mate and breed between September and March. Birds spend a considerable amount of time courting each other to make sure they have the right partner. Sometimes birds will build a nest together as part of the mating ritual in which the eggs will be laid.

Chinga & Nzovu

Dear Chinga,
How old do baboons get? How tall are they? Are they similar to humans?
From Elias in Oshakati

Dear Elias,
In Namibia we have one kind of baboon, the Chacma Baboon. The lifespan of a Chacma Baboon is about 18 years. They are about 80 cm tall (shoulder height). Males have an average weight of 30 kg and females 18kg. The baboon's tail is about the same length as the body. The back feet are about twice as long as the front feet.

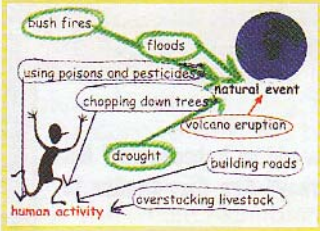
Baboons are similar to humans in that they live in family groups called troops. A troop of baboons can be small or very large with up to 100 members in one troop. In a troop the baboons take care of each other, feed together and the dominant male protects the troop from danger.

Chinga & Nzovu

Update from the last edition...

Answers to page 3: b and d

Answers to page 5:



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K	F	Z	Q	R	U	O	A	N	C	Y	N	F	M	X

Answers to page 6:

Habitat Changes:

1. There are more trees.
(How much water do you think is used everyday to keep the trees green?)
2.) There are more people.
3.) There are more vehicles
4.) There are traffic lights
5.) The road has changed

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Teachers please note: Multiple copies of this mini-magazine are available for you to use in the classroom. If you are interested, please complete the following:

yes, ☐ please send me ..... additional copies.

Please note that we have a new home and address. Please send all subscriptions to: **Namib Desert Environmental Education Trust (NaDEET), P.O. Box 31017, Pioneers Park, Windhoek**

Thank you to the British High Commission for your support for 2003!

This mini-magazine is written by Viktoria Paulick.