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LOVE FOR "VET"

Not even a single idea, about her I had

For one of her blood relatives I for sure longed

With her forever and always, to be identified I wanted

Suddenly by chance, to her home I was invited

With those who knew her, I slowly but surely related

To know more about her, many efforts I made

She is hard to get, my dear Dad was told

For years like Jacob I will work, I agued

Hard to handle and keep, the unable ones said

She will possess your progress, her neighbors prophesied

For peace and rest, I still needed her in my life

Gradually but courageously, I fell in love with her

My mind now made up, the music ready to face

To her parents I proposed, my want and value for her

To pay dowry I promised, and vows we made

Courtship period came; I still didn't listen to rumors

Finally my wedding came, and I legally married "VET"

By ***Mash Mashety*** J30/5410/2014

The poem explains how I did intrafaculty transfer from Fisheries and aquaculture to Veterinary Medicine. People kept discouraging me about VET being hard but I slowly developed passion for it and chose not to listen to what they were saying but instead went ahead .I paid for intrafaculty (paid dowry) and applied for transfer (proposed marriage).As I waited for the results (courtship), I kept attending VET classes wondering what would happen if I didn't succeed. Finally results were out and had been successful (wedding).i was now free to do VET (married).

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The Principal, CAVS joins students and members of staff some from Department of Veterinary Anatomy and Physiology; in planting of indigenous plants at the college field station on 28th May 2014.Over 2,000 indigenous medicinal trees were planted.

A SMILE

It doesn't ask for much,
Not even requires a touch.
It may just heal a heart,
Without needing a skill of art.
A simple language it really is,
Even kids familiarize with it.
Friends begin always there,
With it for them to share.
Try to start with it today,
And see what it brings all day.

Franca Kasuku; Wildlife Year Two Student

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WHAT A LIFE????

This life is good, enjoyable and very free but involves a lot of decision making. One has  to choose right from wrong. In life you may work very hard but later realize your 'very hard" was never hard enough. You end up with disappointments since you don't get what you had hoped for. *What a life*?

Jemimah Odhiambo, 2nd year Wildlife Student

You look back, feel so much discouraged and don't seem to realize you waste a lot of time lamenting. Look around you, everything moves on normally. *What a life*??

Everyone around you seems not to care. Just peep your window and look at the world. With or without you, life must go on, so you have to get out of your 'small cocoon' and move on, face life as it is. *What a life*??

You realize that you have to accept what you can't change i.e. failure, disappointments, discouragements etc., one has to change attitude towards life, this enhances your success and achievements. Thus the turning point 'kumbe' life can be this good but only for those who accept, forget their past and focus on the future.

My dear bro and sis don't let others degrade you. Failing is not the end of everything. You have a potential so you better exploit in order to achieve. Worry not yourself about your past, you have a brighter future ahead as they say "Greener pastures are on the other side of the river" Get up dearest and move on.

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P O A C H I N G

It sucks to be powerless… and hurts exponentially too. My vision has already blurred but the pain washes through me in waves like the most indescribable torture and all i can think of is my baby. My sweet Baraka. She still calls out, even now, to our family but no one comes. They are afraid.

I may be dying but i hear their approach, those bastards… murderers… and I slip into unconsciousness once more, helpless to comfort my child's cries. Assure her that she will live on and I won't.

❁

Baraka was born at sunrise to an explosive welcome reverberating around us. The females surrounding us sang and laughed, their trunks raised as they thanked God for this blessing. "She's beautiful!" "..look at her flap those ears.." "Oh! Already trying to walk. Patience just like her mother's" "Akila, you have done well, the heaven's be praised"...and so on. I must be glowing, honestly, I must. It feels like the sun rose in my heart. With some effort I stand and curl my trunk around her side, helping her totter forward. She stumbles but keeps on, looking up at me for approval. Her first trumpet is feeble, sweet and small. It is hope for me...for my herd.

❁

"We are majestic beasts, Baraka. Powerful and beautiful, a pride to this land. Never forget that." "More than the lions? Or the leopards? What about the giraffes? They're taller than we are." She looks sincerely baffled by my declaration. "More than all the creatures of the savannah. Trust your Mama." With a nod she rushes off to play with the other calves in the waterhole and I smile.

❁

We crash through the trees, shouts ringing behind us. There's the obvious adrenaline of a dangerous chase. I just can't see us living without a watermelon or two from the local farms close by. And the maize, ready to yield. The juicy fruit, mmm...the urge to turn back and brave the furious villagers for some more is near overwhelming. Immediately I shake off the absurd idea and stamp on.

For a moment sadness engulfs me. This is what our lives have come to. Stealing. Destroying. Where the villages grow, my childhood home once spread in an expanse of wild savannah. No more. We battle with those little creatures for survival. It isn't our fault neither is it theirs. Sort of.

Fear of what the future holds for us is hazy but we can see where we stand in this battle. Sometimes I don't understand. Like when they killed Baraka's father for no reason other than to take his tusks.

Humans.

❁

There are times, a good handful, when there is peace. When we know not fear and only joy and happiness prevail. Times I wish were more permanent so Baraka wouldn't experience

the harsh reality of our existence. Wishful thinking but I know one day, one day the sun will rise and stay.

❁

Why are they raising my trunk? What more could they possibly want from me? They are slicing into my trunk now. This is not pain. This is hell. This is fire and ice, torturous shards spearing through me. They laugh and congratulate each other, their guns, machetes, my darling tusks held high.

With my last haggard breath I beg Baraka to run. Run and hide. Run and live on. Run but never forget, we are magestic beasts, powerful...beautiful..proud.

❁

Mama is gone. Dead. I'm afraid. I want to wake up now and stare into the star filled expanse of the night sky. Listen to the soft grunts and calm breathing of my herd as they sleep. Look at Kiara, our matriach and see myself. Snuggle close to my mama and be safe. Thank God that it was just a terrifying stupid nightmare...but the whistling wind and my solitary footfalls as I escape the horrid scene but not the memory...it's real.

I hate them.

. . . . . .

#HandsOffOurElephants
#SaveTheJumbo

***Cheryl Umalla, 1st* year Wildlife student.**

The passion of a student for herpetology; Ocharo Stephen 1st year Wildlife student.

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A study about chameleons

Introduction

Chameleons are highly specialized clade of lizards, approximately 160 species coming in a range of colors, and many have ability to change colors.

Chameleons are distinguished by:

1. Zygoductylous feet
2. Their separately mobile stereoscopic eyes
3. Their very long, highly modified, rapidly extrudable tongues
4. Their swaying gait
5. Crest of horns on their distinctively shaped heads &
6. Many species have a prehensile tail

They are well adapted for climbing and visual hunting. They are found in worm habitats that vary from rain forests to deserts conditions i.e; Africa, Madagascar, Southern Europe and across South Asia as far as Sri Lanka. They have also been introduced to Hawaii, California and Florida, and are often kept as households pets.

Etymology

The word chameleon is derived from a Greek word meaning 'burrowing animal'

Classification

Scientific classification

Kingdom animalia

Phylum chordate

Subphylum vertebrata

Class reptilian

Order squamata

Suborder iguania

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Infraorder acrodonta

Family chamaeleonidae

The family chamaeleonidae was divided into two subfamilies;

1. Brookesiinae have 33 species [dwarf family]

2.Chameleoninae have 100 species [most typical [by Klaver and Bo~hme in 1986; since then the validity of this subfamily designation has been the subject of much debate although most phylogenetic studies support the notion that the pygmy chameleons of subfamily are not a monophyletic group while some authorities have previously preferred to use the subfamilial division and no longer recognize any subfamilies with the family chameleonidae.

Evolution

The oldest known chameleon is the Angiosaurus brevicephalus from the middle Paleocene [about 58.7-61.7] of China. Other chameleon fossil include Chameleo caroliquarti from the lower Miocene [about 13-23 mya] of Czech Republic and Germany, and Chameleon intermedus from the upper Miocene [about 5-13 mya] of Kenya.

The chameleons are probably far older than that, perhaps sharing a common ancestor with IGUANIDS and AGAMIDS more than 100 mya [agamids being more closely related]. Since first fossil have been found in Africa, Europe and Asia, chameleons were certainly once more widespread than they are today. Although nearly half of all chameleons species today are found in Madagascar, this offers no basis for speculation that chameleons might have originate from Madagascar.

Monophyly of the family is supported by several studies; chameleons vary greatly in size and body structure with maximum total length from 15mm [0.59in] in male Brookesia miira [one of the world's smallest reptile] to 68.5cm [27.0in] in the male Furcifer outstaleti.

Many have head ornamentation, such as nasal protrusions, or horn-like projections in the case of Trioceros jacksonii, or large crest on top of their heads like Chameleo calytratus.

Many species are sexually dimorphic, and males are typically much ornamented than the female chameleons.

Pet chameleons

Distribution and habitat

Scientific name	Common name	Length in inches		colour	Lifespan yrs
		Male	female		
Chameleo caltyptarus	Veiled chameleon	14-24	10-13	Green &light	5
Trioceros Jacksonii	Jackson's chameleon	9-13	10-13	Green &light	5-10
Furcifer Pardalis	Panther chameleon	15-21	9-13	Dark colours	5 2-3
Riepeleon brevicaudatus	Bearded pygmy chameleon	2-3	2-3	Brown, beige green	3-5
Rampholeon Spectrum	Spectropygmy chameleon	3-4	2-4	Tan & grey	3-5
Rampholeon temporalis	Usumbara pited pygmy	2.5-4	2-3.5	Gray 7 brown	5-11

They are well adapted for climbing and visual, they are found in warm habitats that vary from rain forests to deserts conditions i.e; Africa, Madagascar, Southern Europe and across South Asia as far as Sri Lanka. They have also been introduced to Hawaii, California and Florida, and often kept as pets.

Descriptions

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Senses

[Chameleon's vision]

Chameleons have the most distinctive eyes of any reptile.

Their upper and lower eye lids are joined with only a pin hole large enough for the pupil to see through, they rotate and focus separately to observe two different objects simultaneously; their eyes move independently from each other. This gives them a 360degree arc of vision around their bodies.

Prey is located using monocular depth perception, not stereopsis. Chameleon have very good eyesight for reptiles, letting them see small insects from a 5-10 metre distance.

Like snakes, chameleons do not have an outer or middle ear, so there is neither an ear opening nor eardrum. However, chameleons are not deaf; they can detect sound frequencies in the range of 200-600Hz [audio sound receptors]

Chameleons can see both visible and ultra-violent light, chameleons exposed to ultraviolent light show increased social behaviors and activity levels are more inclined to bask and feed, and there are also more likely to reproduce as it has positive effect on the pineal gland.

Feeding

All chameleons are primarily insectivorous that feed by ballitically projecting their long tongues from their mouths to capture prey located some distance away.

The chameleons tongue are typically thought to be 1.5 to 2 times their body length [excluding the tail] smaller chameleons [both smaller species and smaller individuals of the same species] have recently been found to have proportionately large tongues apparatus than their larger counterparts. Thus smaller chameleons are able to project tongues greater distances than the larger chameleons that are the subjects of most studies and tongue length estimates, and can project their tongues more than twice their body length.

The chameleon tongue apparatus consist of highly modified hyoid bones, tongue muscle and collagenous elements. The hyoid bone has an elongated parallel sided

projection called the entoglossal process, over which a tubular muscle, the accelerator muscle sits.

The accelerator muscle contracts around the entoglossal process and is responsible for creating the work to power tongue projection both directly and through the loading of collagenous elements located between the entoglossal process and the accelerator muscle.

The tongue retractor muscle, the hyoglossus connects the hyoid and accelerator muscle and is responsible for drawing the tongue back into the mouth following tongue projection.

Tongue projection occurs at extremely high performance reaching the prey in as little as 0.07 seconds having been launched at accelerations exceeding 41g. the power with which the tongue is launched known to exceed 3000W/Kg , exceed that for which muscle is able to produce, indicating the presence of an elastic power amplifier to power tongue projection.

The recoil of elastic elements in the tongue apparatus are thus responsible for large percentages of overall tongue projection performance.

Being an ectothermic reptile, the thermal sensitivity of the tongue retraction in chameleon, however is not a problem as chameleon have a very effective mechanism of holding onto their prey once the tongue has come into contact with it, including surface phenomena such as adhesion and interlocking and suction. The tongue sensitivity of the tongue projection that enables chameleons to feed effectively on cold mornings prior to being able to behaviorally elevate their body temperature through thermoregulation, when other sympatric lizards species are still inactive likely temporally expanding their thermal niche as a result.

Change of color

[signal theory]

Some chameleon species are able to change their skin color. Different chameleon species are able to vary their colouration of pink, blue, red, orange, green, black, brown, light, blue, yellow, turquoise, and purple.

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Color change in chameleons has functions in social signaling and reactions to temperature and other conditions, as well as in camouflage. The relative importance of this functions varies with the circumstances as well as the species. Color change signals a chameleon's physiological condition and intentions to other chameleon.

Chameleons tend to show darker colors when angered, or attempting to scare or intimidate others, while males show lighter multicolored patterns when courting females.

Some species such as Smith's dwarf chameleon adjust their colors for camouflage in accordance with the vision of the specific predator species [bird or snake] by which they are being threatened.

The desert dwelling Namaqua chameleon also uses color change as aid to thermoregulation, becoming black in the morning to absorb heat more efficiently then a lighter gray color to reflect light during the heat of the day. It May show both colors at the same time neatly separated left from right by spine.

Mechanism of color change

Chameleon's skin has a transparent outer layer, underneath this layer are specialized cells called *chromatophores;* having color pigment in their cytoplasm are the cells that change color.

These cells are in layers, each layer of cell contain different color pigment:

1. Xanthophores; the first pigment just beneath the outermost transparent layer.
   This layer has yellow pigments.
2. Erithrophores; found beneath the xanthophores
   Contain red pigments.
3. Iridophores; lie under the erithrophores.
   Contain guanine, used to make DNA – affect blue light.
4. Melanophores; the innermost layer under the iridophore.
   Have brown pigments with melanine. It also controls how much light is reflected.

Transparent layer

Xanthophores
Erithrophores
Iridophores
Melanophores

Dispersion of the pigment granules in the chromatophores sets the intensity of each color. When the pigment is equally distributed in a chromatophore, the whole cell is intensively colored. When the pigment is located only in the centre of the cell, the cell appears mainly transparent. Chromatophores can rapidly locate their particles of pigment thereby influencing the animal's color.

How the color is achieved

In the chromatophores, the pigments are tiny in vesicle keeping the pigments in one place,

The cells can be activated by hormones in the blood or nerve signals or both.

When the chromatophores are activated, it stimulates the vesicles containing the pigments to release. The pigment floats the cell and the color is visible.

Due to different chromatophores pigments, the chameleon can change so many colors; this is achieved by mixing different pigments,

I.e; yellow + red = green

Normally the pigments are locked away inside tiny sacs with the cells, but when a chameleon experiences difference in body temperature, or mood, its nervous system tells specific chromatophores to expand or contract; this changes the color of the cell.

Ex: An exited chameleon might turn red by fully expanding all its erithrophores, blocking out all other colors beneath them; a calm chameleon on the other hand might turn green by contracting its erythrophores and allowing some of the blue-

reflected light from his iridophores to mix with its layer of somewhat contracted yellow xanthophores.

NB: when camouflaging, the chameleon will see its surrounding color using its eyes then stimulate its chromatophores… the environments color is detected by the eye.

The chameleon foot

The feet of a chameleon are highly adapted to *arboreal locomotion.* Though species such as Chamaelo namaquensis, that have secondarily adopted a terrestrial habit have retained the same foot morphology with the little modification on each foot, i.e; the five clearly distinguished toes are grouped into two fascicles. The toes in each fascicle are bound into a flattened group of either two or three giving each a tongs-like appearance.

In chameleons on the front feet, the outer, lateral, group contains two toes whereas, the inner, medial group contain three. On the rear feet, this arrangement is reversed, the medial group containing two toes and the lateral group having three.

These specialized feet allow chameleons to grip tightly onto narrow or rough branches. Furthermore, each toe is equipped with a sharp claw to afford a grip on surfaces such as bark when climbing. It is common to refer to the feet of chameleons as didactyl or zygodactyly though neither terms is fully satisfactory. Both being used in describing totally different feet such as zygodactyl feet of parrots or dactyl feet of sloths or ostriches, none of which is reasonably descriptive of chameleons foot anatomy. Their foot structure does not resemble that of parrots to which the term was first applied. As for dactyl , chameleon visibly have five toes on each foot, not two…

Parasites

Chameleons are parasitized by nematode worms including threadworms [filarioda] and roundworms. Threadworms can be transmitted by biting insects such as ticks and mosquitoes. Roundworms are transmitted through food contaminated by roundworm eggs; the larvae burrow through the wall of the intestines into the bloodstream.

Chameleons are subjected to several protozoan parasites such as such as plasmodium which causes malaria, trypanosome which sleeping sickness and Leishimania.

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Body systems

Inegumentary system

A chameleon skin changes color to communicate, it also changes due to temperature, light and mood.

The skin has different layers; the transparent outer layer made of two cell layers; this contain red and yellow pigments. Cells that give skin color below chromatophores are the cell layers that reflect blue and white, then there is a layer of brpen melanin causes skin to darken level of external light, heat and internal chemical reactions cause this cells to expand and contract causing camouflage.

Reproductive system

Chameleons are mostly oviparous, with some being ovoviviparous.

Oviparous lay eggs 3-6 weeks after copulation. The female will climb down to the ground and begin digging a hole from 10-30cm [4-12 in] deep depending on the species. The female turns herself around the bottom of the hole and deposits her eggs. Clutch sizes vary greatly with species. Small brookesia species may lay only 2-4 eggs while large veiled chameleon have been known to lay 80-100 eggs.

Eggs generally hatch after 4-12 months again depending on species. The eggs of parson's chameleon [Calumna parsonii] a species which is a rare in captivity are believed to take more than 24 months to hatch.

The ovoviviparous species, such as the jackson's chameleon have a 5-7 month gestation period. Each young chameleon is born with the sticky transparent membrane of its yolk sac. The mother presses each egg onto a branch where it sticks, the membrane bursts and the newly hatched chameleon frees itself and climbs away to hunt for itself and hide from predators. The female can have up to 30 live young from one gestation.

Digestive system

Extremely extensive tongue that snaps up insect and out of reach prey tongue can be twice the body length, movable eyes with 360degree vision. Most are carnivorous and hunt for food. Body parts; jaws small triangular teeth, tubular stomach, intestinal tract and cloaca [excretion site]

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Circulatory system

Cold blooded blood is low in red blood cells; they don't require oxygen to heat their bodies. Blood is carried through vessels linking various organs to the lungs and the heart; the heart has 3 chambers hence there is venous and arterial blood mix that limits the amount of oxygen reaching organs… this explains the slow movement. The ventricle is subdivided into 3:

Cavum venosum- leads to systemic circulation

Cavum arteriosum- receive oxygenated blood from left atrium and pumps to right aorta

Cavum pulmonale- receives blood from right arterium and directs flow into pulmonary circulation

Respiratory system

Respiration takes place in the lungs.

Occurs through respiration in alveoli, small blood vessels lined sacs where oxygen is taken in by blood cells and carbon dioxide is taken off. The lung can be unilobed or bilobed. Few alveoli are present in lungs which limit the amount of oxygen taken in at once; this helps explain why they move at slow pace.

Nervous system

Hormones and nerves carry information through the body and are used for communication between cells, left and right hemispheres, spinal cord with ganglious nerves; nerve senses.

10 unique features of a chameleon

1. Almost half of all chameleon species live on the land of Madagascar. With 59 different species existing nowhere outside the island. Approximately there are 160 species living.

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2. Most chameleon change from brown to green and black, but some can turn almost any color. A change can occur in as little as 20 seconds. Chameleons don't change colors to blend in with surroundings scientist have shown disagree , studies show that light, temperature and mood causes chameleons to change color. Sometimes changing color makes the chameleon more comfortable, it help the animal communicate with other chameleons.
3. Chameleon eyes have a 360degree arc of vision and can see two directions at once. The upper and lower eyelids are joined with only a pinhole large enough for the pupil to see through. They can rotate and focus separately to observe two different objects simultaneously, which lets their eyes move independently from each other.
4. Chameleons vary greatly in size and body structure with maximum length varying from 0.6inches to 68.5cm [30inches]
5. Ballistic tongues that are 1.5 to 2 times the length of the body excluding the tail. They feed by projecting their long tongue from their mouth to capture prey located a distance away. The tongue has a high performance reaching the prey in as little as 0.07 seconds having been launched at accelerations exceeding 41g. The chameleon tip is a bulbous ball of muscle, and as it hits its prey it rapidly forms a small suction tip.
6. Happy feet. The chameleon's feet is highly adapted to movement in trees [arboreal locomotion] On each foot there are 5 clearly distinguished toes that are grouped into a flattened section of either two or three toes giving each foot a tong-like appearance. On the front feet the outer group contains two toes whereas the inner group contains three. On the rear feet this arrangement is reversed; the outer group contains 3 three toes and the inner group contains two toes. These specialized feet allow chameleons to grip tightly onto narrow branches. Each toe is also equipped with a sharp claw to help grip on surfaces when climbing.
7. Males are typically much more ornamented. Many have head or facial ornamentation such as nasal protrusions or horn-like projections, others can have large crest on top of their head.
8. Chameleons can't hear much. Like snakes, chameleons do not have an outer or middle ear so there is neither an ear opening nor an eardrum. However, chameleons are not deaf, they can detect sound frequencies in the range [200HZ-600HZ] {audio receptors}

9. Ultraviolent vision. Chameleons can see both visual and ultraviolent alight, chameleons exposed to ultraviolent light show increased social behaviours and activity level and are more inclined to bask and feed. They are also more likely to reproduce as it has a positive effect on the pineal gland.
10. The American chameleon is not a true chameleon. The American chameleon or anole [Anilis carolinensis] is not a true chameleon, but a small lizard of the iguana family. It is found in South East United States and is noted for its color change.

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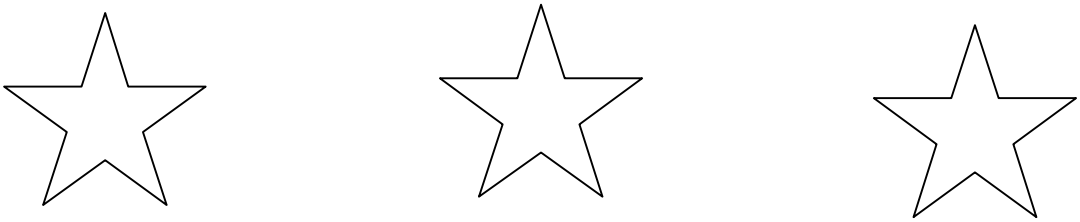

The Department of Veterinary Anatomy and Physiology is a Department of The Faculty of Veterinary Medicine (FVM), College of Agriculture and Veterinary Science (CAVS) located at Chiromo Campus. The Department teaches preclinical Veterinary Students Animal Physiology and Veterinary Anatomy. It also offers courses to BSc wildlife BSc Fisheries and BSc Leather students form a selection of the following courses; Vertebrate Anatomy, Ecophysiology, Ornithology, Icthyology, Herpetology and Wildlife Behaviour. The Department also offers undergraduate service courses to the Faculty of Agriculture and College of Health Sciences (BSc. Biochemistry). Postgraduate service courses are also offered to the Department of Animal Production and The School of Biological Sciences (MSc. Biology of Conservation).