



The Croaker

Newsletter of the Tablelands Frog Club



Striped Rocket Frog
(*Litoria nasuta*)

June 2008



Tablelands Frog Club

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Opinions expressed in this Newsletter are not necessarily that of Tablelands Frog Club.

PUBLIC INFORMATION:

The Croaker is the Newsletter of the Tablelands Frog Club Incorporated. This Newsletter is produced by the voluntary efforts of members. We gratefully accept all contributions, however limited space may mean that contributions are not included immediately, and all are subject to editorial discretion. The TFC newsletter is published bimonthly (i.e. February, April, June, August, October, & December). Newsletter submissions are due on the 15th of the preceding month. Please direct all contributions to The Editor c/o Tablelands Frog Club, at the addresses listed above.

TFC meetings/nights and field trips/outings are held monthly. See schedule for dates, speakers and locations. Annual membership fees are:

\$15.00 Adults
\$15.00 Family
\$ 5.00 Junior/Associate

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Editorial bullrush!

Hello everyone and welcome to The Croaker. While frogs are still the focus of the club, the newsletter is taking a new direction. We have expanded our interests to include reptiles. Future issues may further expand to include insects, arachnids, and who knows what else... perhaps we may include plants, after all animals rely on them for their survival. I feel that expanding our knowledge gives us a greater understanding of our focus animal, the frog. Enjoy this issue, and don't forget our meetings.

Darren Green

Front Cover

Frog of the month, Striped Rocket Frog (*Litoria nasuta*), photo by Michael Anthony.

Our Story

The Tablelands Frog Club was formed in January 1995 in Yungaburra by a group of people who were aware of diminishing numbers of frogs in all areas and who were keen to learn more about the species in general. From the outset guidance was available from experts in the field. Since that time public interest has been constant and the Club has grown rapidly. Frog enthusiasts have joined from as far afield as Adelaide in the south to Weipa in the north. The pooling of Club members' expertise in various related fields has helped the Club to become established and recognised within the community. Membership numbers reached 94 within the first year and are still increasing. On November 17, 1995, the Club became incorporated under the Queensland Associations Incorporation Act 1981. The Club now operates under appropriate rules.

What can I do as a member?

The Club needs all the support and enthusiasm you can provide to help us to achieve a better understanding of these much overlooked animals. Some of the rare species are facing extinction at this very moment. We need assistance to address the many problems which threaten the livelihood of these vulnerable creatures by improving our knowledge of their habits and habitat, by enhancing their environment and by educating our children and the public at large on these issues.

Education: The Club offers many opportunities for you to learn about frogs and in turn to educate others.

Research: Grant applications are made by the Club as an incorporated body and research is led by social scientists who provide you with the opportunity to participate in this work. The Club maintains an information database on frog distribution and invites your input.

Protection of frog environment and breeding: The Club provides guidance and knowledge on how to protect and create friendly frog environments and how to set up a breeding programme for common species in your garden.

Our Aims

To study frogs: The Club meets once a month with professional guest speakers and relevant videos. Members are encouraged to participate in general discussion and to introduce items of interest. Members recordings of frog distribution and animal husbandry are collated on a database for research purposes. The Club conducts workshops and field trips with professional guidance. The Croaker, the Club's newsletter, contains scientific information, contributions from both adult and junior members and general business matters of the Club.

To conserve and encourage the preservation of frogs: The Club has a Code of Conduct and abides by the Nature Conservation Act 1992, runs public awareness campaigns through the media, displays static educational material, encourages a 'Frog Friendly' environment and guides members on breeding programmes of common species in gardens and urban parks.

From the president's lily pad

A successful day was had at the frog club stall at the 100 year celebration of Queensland National Parks, held at Millstream Falls, despite being a one man band. There were a number of enquiries about frogs that people had seen or heard. Many asked about the "little frog found in sand" – this is our last frog of the month, the Ornate Burrowing Frog *Limnodynastes ornatus*.

Also many people described Rocket Frogs (*Litoria nasuta*, this frog of the month) and the Brown-striped Marsh Frog (*Limnodynastes peronii*), although these two are superficially similar.

Other enquiries turned out to be the Common Nursery Frog (*Cophixalus ornatus*, next frog of the month), a Green-eyed Treefrog (*Litoria genimaculata*) and a Little Red Treefrog (*Litoria rubella*), from descriptions of sightings or calls from around houses.

You will notice the inclusion of snake and turtle info in this newsletter; as well as being interesting for current members it is hoped that it may possibly attract more members for the club, from other fields of natural history.

If anyone (members or friends) has any observations on frogs or other wildlife please send it in.

There was general agreement that it would be a good thing to expand the club into a more general interest club; however it would require changes to the constitution and other types of red tape, which no-one has the time to deal with at the moment. In the meantime there seems no reason why we cannot include information on other types of animal and general conservation issues in our newsletters.

The club has a small amount of merchandise left, including polo shirts, 1 cap, t-shirts, books and one frog call tape. We would like to sell what we have left and work on getting some more (see this newsletter for TFG merchandise available). If anyone has any ideas or designs for merchandise please contact the committee. We would particularly like to see some designs & ideas for club t-shirts.



With the dry weather there is little frog activity. Occasional frogs may be found sheltering under ground debris, particularly Green Tree Frogs (*Litoria caerulea*), Bumpy Rocket Frogs (*L. inermis*) and Little Red Tree Frogs (*L. rubella*). Some of the rainforest stream-dwelling frogs are still active, particularly Green-eyed Tree Frogs (*L. genimaculata*), Stoney Creek Frogs (*L. jungguy*) and Common Mistfrogs (*L. rheocola*). Two gravid (with eggs) *L. rheocola* were found at Nandroya recently, however there were no males calling at all. The only frogs heard calling in recent weeks have been Brown-striped Marsh Frogs and Northern Barred Frogs (*Mixophyes* sp.) on a recent field trip near Mt Molloy.

Our next field trip will be to Granite Gorge near Mareeba on 23rd of August. There are White-lipped Treefrogs in the gorge that are brown with white spots. White-lipped Treefrogs have considerable ability to change their colour to suit their surroundings, and may vary from black to bright blue to yellowish brown in colour.

Happy frogging

Michael Anthony

<http://www.tablelandfrogclub.com>



**Destination
BORNEO**
22 August 2008

Borneo is home to some of the world's most spectacular and diverse wildlife. Renowned Cairns wildlife photographer, Kelvin Marshall, will be presenting a dazzling slide show on the flora and fauna of Borneo at the Edge Hill Environment Centre, Edge Hill State School. They say a picture is worth a thousand words. In the case of Kelvin's visually stunning images, words are not enough.

Come along and discover the beauty of moths, dragonflies, and other insects, spiders, mammals, birds, snakes, lizards and frogs. No doubt you will go home in awe of Borneo, and take with you a powerful message. Kelvin's presentation will encourage discussion, questions and answers, and maybe a few tips on wildlife photography.

As always, supper will be provided after the meeting. Meeting starts at 7.00pm.



In the spotlight

Striped Rocket Frog

(*Litoria nasuta*)

Details...

Family: Hylidae

Common name: Striped Rocketfrog; Rocket Frog

Scientific name: *Litoria nasuta*

Description: This frog can be red-brown or yellow-brown on its back, usually with two longitudinal lines of darker warts, ridges and skin folds.

This frog has extremely long legs and is very streamlined. A wide dark stripe runs from the snout, through the eye and tympanum (tight membrane covering the entrance to the ear), and breaks up into a series of blotches along the side. This dark stripe is broken by a pale bar in front of the eye and another in front of the arm. A pale stripe also runs from underneath the eye to the base of the arm. The tympanum has a pale rim. The backs of the thighs are yellow with dark brown lines. The belly is whitish and granular. The finger and toe pads are small and the toes are half webbed.

Size: 50 mm

Habitat: This frog lives in open forests and Melaleuca swamps. It is often found near streams, ponds, waterholes and flooded grassy areas.

Call: A fast "wik wik wik" sound.

Breeding: Males call from spring to early autumn and breeding increases after heavy rain.

Eggs: Are laid in clusters in shallow water, either attached to vegetation or free floating. They usually sink after a disturbance.

Tadpoles: Are medium sized and dark olive-brown, with a pale stripe running down the base of the spine and onto the tail.

Similar species: This frog can be distinguished from *Litoria freycineti* by its lack of spots on the back of the thighs.



Conservation Information...

Suspected threatening processes: Habitat modification (e.g. vegetation clearing, invasive weeds).

Population size: An estimate of the total number of adults present in the species entire range is >50000 individuals. Factors affecting population size and distribution are unknown or unsubstantiated.

Population trend in Australia over the past 50 years: Population size stable or suspected to be stable or increasing.

Knowledge of population trend in Australia: Monitored locally.

Population concentration: Not known to concentrate or exist in discrete locations. (e.g. the number of sites in which individuals group together either seasonally, such as breeding sites, or they may occupy discrete habitat patches within the broader landscape, such as discrete water bodies or drainage units.)

Ongoing management activities in Australia: None directed primarily at the taxon.

Reproductive potential for recovery: The average number of eggs deposited per adult female per year is 51-200 eggs/female/year. Minimum age at which females are known or suspected to first reproduce is <2 years.

Range size in Australia: The size of the geographic area over which the taxon is distributed: > 1,000,000 km.

Distribution trend: Area occupied has declined by < 25%. (This is an estimate of change in the portion of the total range that is occupied or utilised; it may not equal the change in total range.)

Knowledge of distribution in Australia: Broad range limits or habitat associations are known, but local occurrence cannot be predicted accurately.

Source...

Article & Map from Frogs Australia Network.

Tadpole photo Marion Anstis.



Frogs Australia
NETWORK 

<http://frogsaustralia.net.au/>

August
"in the spotlight" focuses on the
Common Nursery Frog
(*Cophixalus ornatus*)

August
also focuses on the
Small-eyed Snake
(*Cryptophis nigrescens*)



In the spotlight

Striped Rocket Frog

(*Litoria nasuta*)

Striped Rocket Frog *Litoria nasuta* (large-nosed beach-frog) (Gray, 1842)

Taxonomic History

The first specimen of this species was collected from Port Essington, N.T. and lodged in the British Museum of Natural History. J.E. Gray described this animal as *Pelodytes nasutus*. Further specimens, believed to be from Cape York, were described in 1884 by C.W. de Vis of the Queensland Museum as *Hyla peninsulae*; these syntypes are now presumed lost. A further specimen from Milne Bay in Papua New Guinea was described as *Hyla semoni* by Boettger in 1894 and the type specimen lodged in the Natur-Museum Sendkenburg, Frankfurt, Germany.

The genus *Hyla*, which once consisted of roughly 300 species from across the globe, has now been split up into many; the genus *Litoria* was then used for "hylid" or tree frogs occurring in Australia, Bismarck Archipelago, Lesser Sunda Islands, Molluccan Islands, New Guinea, Solomon Islands and Timor.

Rocket frogs occur from north-east Western Australia across the top end of N.T. and Queensland then down the east coast of Australia to about Gosford, with an apparently outlying population at Avalon on Sydney's northern beaches. It is also found in southern New Guinea.

In north Queensland this frog is found in grassy habitats, on the coast and tablelands near permanent water such as swamps and creeks, but may be found around seasonally inundated floodplains, canefields and roadside ditches. While not found in rainforest in the Wet Tropics, except in grassy clearings and along roads, specimens have been found in the Lockerbie Scrub rainforest near the tip of Cape York. Over much of its range the Rocket Frog is one of the more abundant and readily observed species of frog.

This is a terrestrial species which while most active at night, can also be found during the day. Both adults and juveniles can be observed both in sunny or shaded grassy areas, usually near water. Often the first indication of their presence is a plop as they jump into the water (other "ground hylids" and the Wood Frog (*Rana damelii*) also have this habit), but they will also just leap away when disturbed – their quick fire jumping through grass makes them difficult to capture. This diurnal presence may be to the detriment of the species as fishermen often collect it for bait; apparently favoured by Barramundi (*Lates calcarifer*) hence are known as "barra frogs".

This species may be commonly seen and heard from the first rains leading up to the wet season to the end of the wet/ early dry season. They are most active at the height of the wet season, often seen on roads or calling from near water. The call is described as excited quacks and is similar to that of other ground Litorias with similar morphology and habits (*L.freyineti*, *L.inermis*, *L.latopalmata*, *L.nigrofrenata*, *L.pallida* and also the similar *Cyclorana alboguttata*). During drier times of the year they may be found near permanent water or hiding under rocks and logs where moisture is retained.

The most notable characteristic of this species is its ability to leap large distances and often high into the air. An examination of a Rocket Frog shows that it has long muscular legs which provide the power to rapidly propel it. Its elongated body form and pointed snout provide sleek streamlining. These factors also contribute to this frog's

powerful swimming ability. This is a terrestrial frog with little climbing ability despite its inclusion in a genus of true tree frogs; this species and others in its subgroup may eventually be placed in a separate genus. The tiny toe-discs show its climbing ancestry however.

The leaping and swimming abilities of Rocket Frogs are adaptations to living on the ground and in the open, allowing it a better chance to escape predators, both diurnal and nocturnal. The longitudinally aligned markings also provide excellent camouflage amongst grasses where it is commonly found.

The Rocket Frog has been observed in full sunlight and may bask, in the manner of some other frog species (*L.dahlia*, *C.australis*) and juvenile Cane Toads (*Bufo marinus*).

As with most Australian Frogs, *L.nasuta* is believed to be an opportunistic predator of arthropods, especially insects. Rocket frogs fall prey themselves to a number of birds, mammals and reptiles, possibly also fish, especially the eggs and tadpoles. Rocket Frogs are often found in road-killed Keelbacks (*Tropidonphis mairii*).

Males grow up to about 45mm, the larger females to about 60mm.

Reproduction occurs during the wet season, from December to April, males calling from amongst grass tussocks, often within a metre of water. A gravid female was collected at the end of January. This species normally breeds in still water resulting from wet season rain, such as inundated grassland, canefields and roadside ditches, but also may breed in permanent waterbodies. Eggs have been recorded as laid as a surface film containing 50 to 100 eggs, recorded from 15 to 30 cm of water, at temperatures of 30 to 41 degrees Celsius. The eggs take 1 to 5 months to develop, this is mostly dependent on temperature.

Tadpoles are a mottled brown above with a lighter ventral surface, and may grow to 55mm in length. At a temperature of 30 degrees Celsius tadpoles metamorphose approximately 30 days after hatching. Metamorphlings measure approximately 20mm.

AUTHOR: Michael Anthony.





Amphibian news...

Zoologists Unlock New Secrets About Frog Deaths

ScienceDaily (Mar. 28, 2008) — New research from zoologists at Southern Illinois University Carbondale opens a bigger window to understanding a deadly fungus that is killing off frogs throughout Central and South America, and that could threaten amphibian populations in North America as well. The research, led by SIUC zoologist Karen R. Lips, and SIUC zoologist Michael W. Sears, underscores the dire circumstances facing up to 43 percent of known amphibian species in the world and points up the need for more regulations, conservation efforts and quarantines to prevent the fungus' spread.

An associate professor of zoology in the College of Science at SIUC, Lips is at the forefront of in research in catastrophic decline of frog species brought on by the *Batrachochytrium dendrobatidis* fungus. The fungus, known to researchers as "Bd," wipes out frog populations essentially by completely blocking their skin. Amphibians such as frogs depend on their skin to provide oxygen and moisture. Bd infections cause electrolyte imbalance, which can lead to cardiac arrest. Lips has studied the issue since the early 1990s, becoming a recognized expert on the subject. She, along with her graduate and doctoral students, regularly visit the high jungles of Central America, roughing it in the wild while collecting data on the ecological systems before, during and after the fungus arrives.

This latest study, conducted with Sears, an assistant professor of zoology at SIUC, and two other colleagues at the Illinois Natural History Survey and Zoo Atlanta, expands upon that work by seeking better understanding of the spread of the fungus, its triggers and how it might be spread. Specifically, the researchers examined data from South American amphibian declines to see whether the wave-like spread seen in Central America, typical of an emerging infectious disease, was evident. One previous theory, for instance, blamed the fungus on global climate change. Lips and Sears, however, found climate

change doesn't appear to trigger outbreaks of the fungus, but that it instead spreads in wave-like patterns often seen in exotic species and emerging infectious diseases. They call their theory the "spreading pathogen hypothesis."

Using modeling, the researchers found evidence of four different introductions of Bd into South America. They found that the fungus spread through the population at a rate similar to that seen in Central America and in a manner that best explains amphibian population declines in Central and South America. "What makes the study really relevant is we can now generalize how the fungus is spread," Lips said. "We know from our research, that if we start looking in the right time and place in an area where the fungus is, we're probably going to see it affecting frog populations. This helps us understand what's going on, and it can potentially help us get out in front of it."

The study could help governments and environmental agencies focus on ways to prevent the fungus' spread through more regulation of potential infection routes, such as the ornamental plant and aquarium wildlife trade. The fungus can easily hitch a ride to other regions through such trade, Lips said. "If you go and buy an ornamental plant from one of these regions and plant it in your yard, or you buy a frog at a pet shop, think about it. If the fungus is there and still alive, it's now introduced into the environment. Then it can get into your pond or streams."

Lips said simple testing of such products and organisms before importing them could reveal the fungus' presence. Once discovered, simple anti-fungal drugs will kill the fungus before it can contaminate an area. "Our research has shown that once the fungus gets somewhere new it spreads like wildfire," Lips said. "So the key is preventing it from spreading." The fungus is present in North America, including Illinois, but little is known so far about its impact here. With funding from the Illinois Department Natural Resources, Lips in the coming months will survey the extent of the fungus and its impact in Illinois.



Among the study's key points:

- Climate change, while having some negative impacts on amphibian biodiversity, does not appear to have triggered the disease in Central America and the Andes of South America, as suggested by previous studies.
- The fungus appears to have spread in a wave-like manner, in a typical pattern of disease spread.
- The fungus was introduced in South America in the late 1970s or early 1980s. After introduction, the disease spread along the Andes, infecting native amphibians and often causing the extinction of entire populations and species.
- There is robust evidence supporting the "spreading pathogen hypothesis," which holds the disease was and continues to be spread in a wave-like pattern seen in Central America. It is likely this same pattern will emerge in other places where Bd has been detected, including North America and Europe.

Lips said the study increases understanding of the disease, which should allow humans to take steps to limit its spread. "We need to get into areas ahead of the spreading wave — such as eastern Panama and the southern Andes — to conduct intensive surveys and monitoring for both native amphibians and the ... fungus," Lips said. Environmental agencies also should immediately begin conservation programs aimed at conserving rare and endangered amphibian species that might be wiped out by the fungus. "At this

time, the fungus cannot be controlled or managed in wild amphibians nor their habitats," Sears added. The island of Madagascar, which is home to a large number of plants and animals found nowhere else in the world, so far appears free of the deadly fungus. The researchers said governments should take steps to maintain that status.

In the future, Lips believes that researchers should study treatment options for wild amphibians and possibly their habitats to prevent or minimize the fungus while establishing a global network of disease surveillance. They should increase communication and monitoring of global trade and increase outreach communication with researchers and policy makers to raise awareness on its potential impacts in other geographic locations. Researchers also should survey museum specimens to better determine the location, timing and possible sources of the fungus and its introduction into the environment in various locations. They also should study fungus samples for genetic clues as to its origins and the different strains involved.

SOURCE: Southern Illinois University Carbondale (2008, March 28). Zoologists Unlock New Secrets About Frog Deaths. ScienceDaily. Retrieved April 6, 2008, from <http://www.sciencedaily.com/releases/2008/03/080326195628.htm>

PHOTO: Red-eyed Tree Frog. 43 percent of known amphibian species in the world are at risk because of a fungus. (Credit: iStockphoto/Mark Kostich)

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Amphibian news...

Harlequin Frog Rediscovered In Remote Region Of Colombia

ScienceDaily (Mar. 15, 2008) — After 14 years without having been seen, several young scientists supported by the Conservation Leadership Programme (CLP), have rediscovered the Carrikeri Harlequin Frog (*Atelopus carrikeri*) in a remote mountainous region in Colombia. The critically endangered Carrikeri Harlequin frog was recently rediscovered by the Project Atelopus team in the Sierra Nevada de Santa Marta Mountains in Colombia's Magdalena department. Colombia is one of the world's richest countries in amphibian diversity with more than 583 species. Unfortunately, in the past several years, there has been a decline in amphibian populations especially in higher elevations in Colombia.

The Carrikeri Harlequin frog is native to the Sierra Nevada de Santa Marta Mountains in Colombia's Magdalena province. The frog lives in the páramo habitat at an altitude of 4,000 meters and is approximately five centimeters in size. This population is unique since it possesses orange



markings, which are unusual for this species. Páramo is a neotropical grassland ecosystem located in high elevations between the upper forest line (about 3,100 meters in altitude) and the permanent snow line (about 5,000 meters). Nearly 57 percent of this ecosystem worldwide is found in Colombia. "By discovering that the endangered frog still exists, we hope

it will show how important conservation is," said Luis Alberto Rueda, scientist for the Project Atelopus team who led the expedition. "And we plan to continue with our research so that we can better assist in helping to ensure that this frog

will not become extinct."

In addition to Rueda, who is part of the GECO (Grupo de Ecofisiología, Comportamiento y Herpetología) of the University of the Andes, the individuals who are part of the Atelopus team of scientist include: Oswaldo Cortes, Giovanni Chaves, Erika Salazar, Jose Gil, Sergio Pulido, Astrid Nossa, Fabian Tavera, Jenny Gallo, Ximena Villagrán and Nidia Rodríguez members of the Ecodiversidad Colombia Foundation. The CLP, formerly known as the BP Conservation Programme, supports the vital work of a new rising generation of conservation professionals who are helping to drive practical projects addressing a wide range of global environmental issues from protecting sharks in Brazil to conservation of threatened amphibians in Colombia and endangered turtles in Cambodia to the assessment and conservation of threatened bird species in China.

SOURCE: The Conservation Leadership Programme (2008, March 15). Harlequin Frog Rediscovered In Remote Region Of Colombia. ScienceDaily. Retrieved April 6, 2008, from <http://www.sciencedaily.com/releases/2008/03/080311160514.htm>

PHOTO: Carrikeri harlequin frog. (Credit: Conservation Leadership Programme)

First Lungless Frog Discovered

ScienceDaily (Apr. 8, 2008) — Researchers have confirmed the first case of complete lunglessness in a frog, according to a report in the April 8th issue of *Current Biology*. The aquatic frog *Barbourula kalimantanensis* apparently gets all the oxygen it needs through its skin. Previously known from only two specimens, two new populations of the aquatic frog were found by the team during a recent expedition to Indonesian Borneo. "We knew that we would have to be very lucky just to find the frog," said David Bickford of the National University of Singapore. "People have been trying for 30 years. But when we did and I was doing the initial dissections -- right there in the field -- I have to say that I was very skeptical at first [that they would in fact lack lungs]. It just did not seem possible. We were all shocked when it turned out to be true for all the specimens we had from Kalimantan, Indonesia.

"The thing that struck me most then and now is that there are still major firsts (e.g., first lungless frog!) to be found out in the field," he added. "All you have to do is go a little ways beyond what people have done before, and -- voila!" Of all tetrapods (animals with four limbs), lunglessness is only known to occur in amphibians. There are many lungless salamanders and a single species of caecilian, a limbless amphibian resembling an earthworm, known to science. Nevertheless, Bickford said, the complete loss of lungs is a particularly rare evolutionary event that has probably only occurred three times.

The discovery of lunglessness in a secretive Bornean frog supports the idea that lungs are a malleable trait in amphibians, which represent the evolutionary sister group to all other tetrapods, according to the researchers. *Barbourula kalimantanensis* lives in cold, fast-flowing water, they noted, so loss of lungs might be an adaptation to a combination



of factors: a higher oxygen environment, the species's presumed low metabolic rate, severe flattening of their bodies that increases the surface area of their skin, and selection for negative buoyancy--meaning that the frogs would rather sink than float.

The researchers said that further studies of this remarkable frog may be hampered by the species' rarity and endangerment. They therefore strongly encourage conservation of the frogs' remaining habitats. "This is an endangered frog -- that we know practically nothing about -- with an amazing ability to breathe entirely through its skin, whose future is being destroyed by illegal gold mining by people who are marginalized and have no other means of supporting themselves," Bickford said. "There are no simple answers to this problem." The researchers include David Bickford, National University of Singapore, Singapore; Djoko Iskandar and Anggraini Barlian, of Institut Teknologi Bandung, Java, Indonesia.

SOURCE: Cell Press (2008, April 8). First Lungless Frog Discovered. ScienceDaily. Retrieved April 9, 2008, from <http://www.sciencedaily.com/releases/2008/04/080407123824.htm>

PHOTO: Researchers have confirmed the first case of complete lunglessness in a frog. This little aquatic frog apparently gets all the oxygen it needs through its skin. (Credit: Courtesy David Bickford)

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Amphibian news...

Rare Maud Island Frogs Hatched In New Zealand

ScienceDaily (Mar. 10, 2008) — What looks at first to be a slimy mess in a Petri dish represents a highly-significant advance in conservation and restoration ecology. Ecologists from both the Sanctuary and Victoria are celebrating the arrival of the first Maud Island frogs (*Leiopelma pakeka*) to hatch on mainland New Zealand for many years. Clustered together to conserve moisture, the 13 fingernail-sized baby froglets were recently transferred from the Karori Sanctuary to Victoria University where they will be incubated and later released as young frogs.

No larger than a human adult's little fingernail, the Maud Island froglets differ from most frog species in that they hatch from the egg as fully-formed froglets without going through the usual tadpole stage. 13 froglets in total were found during a recent audit of a specially-constructed frog research enclosure at Karori Sanctuary. "Sixty frogs were released into the special mouse-proof enclosure in 2006 in an effort to re-establish this highly-endangered species on the mainland," Victoria Master's student Kerri Lukis says. Ms Lukis is studying the Sanctuary population for her Master's thesis under the supervision of Associate Professor Ben Bell, Director of the University's Centre for Biodiversity and Ecological Restoration.

She says that thirty of frogs released in 2006 were later released outside of the enclosure so that the captive and wild populations could be compared. When it came time to find the frogs again to see how many frogs had survived and whether they had bred she was delighted to find the 13 froglets attached to adult males. "This is extra special because Maud Island frogs have never been found breeding in their natural habitat before, and certainly not on the mainland. "It's wonderful timing for 2008 - international Year of the Frog – and a Leap Year. It's rare to get a 'good news' story about frogs – every year around 35 species of frog become extinct and two of New Zealand's remaining native frog species are on the critical list."



While not the rarest species, the thimble-sized Maud Island frogs are nationally threatened. Like all of New Zealand's native frog species, they are endemic (found only here) and belong to the endemic genus *Leiopelma*. They have evolved very little over the last 70 million years, resulting in some very distinctive features and behaviours. For example, they don't croak, live in water, have webbed feet, or go through a tadpole stage. Associate Professor Ben Bell says the University and the Sanctuary have worked closely together on this project. "It is good to know that the Karori Sanctuary frogs are able to breed in an enclosure there. Whether those frogs released into the wild in Karori survived and bred is less certain at present."

SOURCE: Victoria University Of Wellington (2008, March 10). Rare Maud Island Frogs Hatched In New Zealand. ScienceDaily. Retrieved April 6, 2008, from <http://www.sciencedaily.com/releases/2008/03/080305194942.htm>

PHOTO: Adult Maud Island frog. The thimble-sized frogs are nationally threatened in New Zealand. (Credit: Copyright Karori Sanctuary)

Amphibians Respond Behaviorally To Impact Of Clear Cutting

ScienceDaily (Mar. 14, 2008) — The number of amphibians drastically decreases in forest areas that are clearcut, according to previous studies. A University of Missouri researcher, however, has found that some animals may not be dying. Instead, the Mizzou biologist said some animals may be moving away (possibly to return later) or retreating underground. The finding could have major implications for both the timber industry and the survival of amphibians. "Everyone jumped to the conclusion that the frogs and salamanders were dying after a clearcut had occurred," said Ray Semlitsch, professor of biological sciences in the MU College of Arts and Science. "Anecdotal data accumulated through the years indicated there were potentially three things amphibians could do: stay and die, retreat underground or evacuate the site. We have never been sure of how they respond to strong habitat changes, especially behaviorally."

Semlitsch and his graduate students at MU found, during a period of two years, that significantly more salamanders and frogs evacuated clearcut treatments than entered, although the researchers cannot say what portion also may have died or retreated underground. Documenting this evacuation response is important because animals are potentially available later for re-colonization once the forest begins to grow back. The results of the study present two primary implications for timber



management that would benefit amphibians. First, timber harvesters producing clear cuts that are small (within a six-acre area) may improve the chances of amphibians being able to move out of the area until sufficient reforestation occurs. Second, if harvesters leave coarse woody debris (everything over two inches in diameter) on the ground, it will contribute to the amphibians' survival by creating food, maintaining moisture and providing shelter.

Semlitsch said amphibians are potential bio-indicators of ecosystem health and are the most threatened vertebrate type globally, with one-third, or 1,896 species, currently at risk of extinction. Studies done in the past indicate harvesting forest is particularly detrimental. Amphibians are very sensitive to water loss, heat and changes in temperature. They have no natural barrier to water loss. Semlitsch found that amphibians may be able to react to changes in their environment in an effort to alleviate risk in ways previously undocumented.

Semlitsch said one of his goals is trying to maintain ecosystem health and function and developing principles to help species persist.

"I am trying to develop general principles to help us manage our natural resources without exploiting them to a point where ecosystems begin to fall apart," he said. "I am not against cutting trees, but let's do it in a way that's responsible and will maintain forests and the timber industry, as well as amphibians, for generations to come." This study will be published in the March issue of Ecological Applications (Ecological Society of America).

SOURCE: University of Missouri-Columbia (2008, March 14). Amphibians Respond Behaviorally To Impact Of Clear Cutting. ScienceDaily. Retrieved April 6, 2008, from <http://www.sciencedaily.com/releases/2008/03/080311093341.htm>

PHOTO: The Ringed Salamander (*Ambystoma annulatum*) is a species unique to the Ozarks. (Credit: Photo by Bill Peterman)



Remember 2008 is the "Year of the Frog." Go to <http://www.aark.org> for more information.



Snake stuff...

Evolution Of Aversion: Why Even Children Are Fearful Of Snakes

ScienceDaily (Feb. 28, 2008) — Some of the oldest tales and wisest mythology allude to the snake as a mischievous seducer, dangerous foe or powerful iconoclast; however, the legend surrounding this proverbial predator may not be based solely on fantasy. As scientists from the University of Virginia recently discovered, the common fear of snakes may well be intrinsic. Evolutionarily speaking, early humans who were capable of surviving the dangers of an uncivilized society adapted accordingly. And the same can be said of the common fear of certain animals, such as spiders and snakes: The ancestors of modern humans were either abnormally lucky or extraordinarily capable of detecting and deterring the threat of, for example, a poisonous snake.

Psychologists Vanessa LoBue and Judy DeLoache were able to show this phenomenon by examining the ability of adults and children to pinpoint snakes among other nonthreatening objects in pictures. "We wanted

to know whether preschool children, who have much less experience with natural threats than adults, would detect the presence of snakes as quickly as their parents," LoBue explained. "If there is an evolved tendency in humans for the rapid detection of snakes, it should appear in young children as well as their elders."

Preschool children and their parents were shown nine color photographs on a computer screen and were asked to find either the single snake among eight flowers, frogs or caterpillars, or the single nonthreatening item among eight snakes. As the study surprisingly

shows, parents and their children identified snakes more rapidly than they detected the other stimuli, despite the gap in age and experience. LoBue and DeLoache also found that both children and adults who don't fear snakes are just as good at quickly identifying them as children and adults who do fear snakes, indicating that there may be a universal human ability to visually detect snakes whether there is or is not a fear factor based on a learned bias or experience.

LoBue and DeLoache explain that their study does not prove an innate fear of snakes, only that humans, including young children, seem to have an innate ability to quickly identify a snake from among other things. One of their previous studies indicated that humans also have a profound ability to identify spiders from among non-threatening flora and fauna. LoBue has also shown that people are very good at quickly detecting threats of many types, including aggressive facial expressions. The results, which appear in the March 2008 issue of *Psychological Science*, a journal of the Association for Psychological Science, may provide the first evidence of an adapted, visually-stimulated fear mechanism in humans.

SOURCE: Association for Psychological Science (2008, February 28). Evolution Of Aversion: Why Even Children Are Fearful Of Snakes. ScienceDaily. Retrieved April 9, 2008, from <http://www.sciencedaily.com/releases/2008/02/080227121840.htm>

PHOTO: The common fear of snakes is most likely intrinsic. (Credit: iStockphoto/Jake Holmes)

Unlocking The Psychology Of Snake And Spider Phobias

ScienceDaily (Mar. 24, 2008) — University of Queensland researchers have unlocked new evidence that could help them get to the bottom of our most common phobias and their causes. Hundreds of thousands of people count snakes and spiders among their fears, and while scientists have previously assumed we possess an evolutionary predisposition to fear the unpopular animals, researchers at UQ's School of Psychology may have proved otherwise.

According to Dr Helena Purkis, the results of the UQ study could provide an unprecedented insight into just why the creepy creatures are so widely feared. "Previous research shows we react differently to snakes and spiders than to other stimuli, such as flowers or mushrooms, or even other dangerous animals...or cars and guns, which are also much more dangerous," Dr Purkis said. "[In the past, this] has been explained by saying that people are predisposed by evolution to fear certain things, such as snakes and spiders, that would have been dangerous to our ancestors. "[However], people tend to be exposed to a lot of negative information regarding snakes and spiders, and we argue this makes them more likely to be associated with phobia."

In the study, researchers compared the responses to stimuli of participants with no particular experience with snakes and spiders, to that of snake and spider experts. "Previous research has argued that snakes and spiders attract preferential attention (they capture attention very quickly) and that during this early processing a negative (fear) response is generated... as an implicit and indexed subconscious [action]," Dr Purkis said. "We showed that although everyone preferentially attends to snakes or spiders in the environment as they are potentially dangerous, only inexperienced participants display a negative response."

The study is the first to establish a clear difference between preferential attention and the accompanying emotional response: that is, that you can preferentially attend to something without a negative emotional response being elicited. Dr Purkis said the findings could significantly increase understanding about the basic cognitive and emotional processes involved in the acquisition and maintenance of fear.

"If we understand the relationship between preferential attention and emotion it will help us understand how a stimulus goes from being perceived as potentially dangerous, to eliciting an emotional response and to being associated with phobia," she said. "[This] could give us some information about the way people need to deal with snakes and spiders in order to minimise negative emotional responses."

Researchers are now planning a follow-up study, which will test their theory that love and fear, or phobia, involve the same basic attention mechanism. "We are interested in testing animal stimuli for animal lovers to see whether these stimuli, a dog for a breeder for instance, have access to preferential attention [in the same way as snakes and spiders do for those with phobias of them]. "I am also interested in the difference that we saw in our previous work between preferential attention, and the emotional response that is elicited after this initial processing."

The study calls for volunteers who work with or own dogs, cats, horses, cattle, snakes and spiders and also general members of the public who will form a control group. "I also need people who are allergic to dogs or cats, people who are apprehensive of snakes and spiders, and people who have no fear of snakes and spiders but don't explicitly work with them," Dr Purkis said. "[Additionally, we're looking to get in touch with] people who are willing to have their pets (dogs, cats, horses, cattle, snakes, spiders) photographed for use as experimental stimuli."

JOURNAL REFERENCE: Purkis, Helena M.; Lipp, Ottmar V. "Automatic attention does not equal automatic fear: Preferential attention without implicit valence." *Emotion* vol. 7, no. 2 (May 2007): 314-323.

SOURCE: University of Queensland (2008, March 24). Unlocking The Psychology Of Snake And Spider Phobias. ScienceDaily. Retrieved April 9, 2008, from <http://www.sciencedaily.com/releases/2008/03/080320132646.htm>

PHOTO: Hundreds of thousands of people count snakes and spiders among their fears, and while scientists have previously assumed we possess an evolutionary predisposition to fear the unpopular animals, researchers at UQ's School of Psychology seem to have proved otherwise. (Credit: iStockphoto/Holger Gogolin)





Snake stuff

Snake Venoms Share Similar Ingredients

ScienceDaily (Dec. 25, 2007) — Venoms from different snake families may have many deadly ingredients in common, more than was previously thought. A study published in the online open access journal BMC Molecular Biology has unexpectedly discovered three-finger toxins in a subspecies of the Massasauga Rattlesnake, as well as evidence for a novel toxin genes resulting from gene fusion. Susanta Pahari from National University of Singapore, Singapore (currently working at Sri Bhagawan Mahaveer Jain College, Bangalore, India) used venom glands from a rare rattlesnake that lives in arid and desert grasslands. Known as Desert Massasauga (*Sistrurus catenatus edwardsii*), this pitviper is a subspecies of the North American Massasauga Rattlesnake (*Sistrurus catenatus*).

Together with Stephen Mackessy from the University of Northern Colorado, USA and R. Manjunatha Kini from National University of Singapore, Singapore, Pahari constructed a cDNA library of the snake's venom gland and created 576 tagged sequences. A cocktail of recognized venom toxin sequences was detected in the library, but the venom also contained three-finger toxin-like transcripts, a family of poisons thought only to occur in another family of snakes (Elapidae). The team also spotted a novel toxin-like transcript generated by the fusion of two individual toxin genes, a mechanism not previously observed in toxin evolution. Toxin diversity is usually the result of gene duplication and subsequently neofunctionalization is achieved through several point mutations (called accelerated evolution) on the surface of the protein. Pahari says "In addition to gene duplication, exon shuffling or transcriptional splicing may also contribute to generating the diversity of toxins and toxin isoforms observed among snake venoms."

Previously, researchers identified venom compounds using protein chemistry or individual gene cloning methods. However, less abundant toxins were often missed. The library method has now revealed new toxin genes and even new families of toxins. Taking low abundance toxins into consideration shows advanced snakes' venoms actually have a greater similarity than previously recognized. Snake venoms are complex mixtures of pharmacologically active proteins and peptides. Treating snake venom victims can be complicated because of the variation between venoms even within snake families. Kini says "Such a diversity of toxins provides a gold mine of bioactive polypeptides, which could aid the development of novel therapeutic agents."

SOURCE: BioMed Central (2007, December 25). Snake Venoms Share Similar Ingredients. ScienceDaily. Retrieved April 9, 2008, from <http://www.sciencedaily.com/releases/2007/12/071219202946.htm>

Snakes Locate Prey Through Vibration Waves

ScienceDaily (Feb. 25, 2008) — It is often believed that snakes cannot hear. This presumption is fed by the fact that snakes lack an outer ear and that scientific evidence of snakes responding to sound is scarce. Snakes do, however, possess an inner ear with a functional cochlea. In a recent article in Physical Review Letters* scientists from the Technical University Munich (TUM), Germany, and the Bernstein Center for Computational Neuroscience (BCCN) present evidence that snakes use this structure to detect minute vibrations of the sand surface that are caused by prey moving. Their ears are sensitive enough to not only "hear" the prey approaching, but also to allow the brain, i.e., the auditory system, to localize the direction it is coming from. The work was carried out by J. Leo van Hemmen and Paul Friedel, scientists at the Biophysics Department of the TUM and BCCN, together with their colleague Bruce Young from the Biology Department of Washburn University at Topeka (KS, USA).

Any disturbance at a sandy surface leads to vibration waves that radiate away from the source along the surface. These waves behave just like ripples on the surface of a pond after a stone is dropped into the water. The sand waves, however, propagate much quicker (the speed is about 50 meters per second) than at the water surface but on the other hand much more slowly than for instance in stone (or concrete) and the amplitude of the waves may be as small as a couple of thousands of a millimeter. Yet a snake can detect these small ripples. If it rests its head on the ground, the two sides of the lower jaw are brought into vibration by the incoming wave. These vibrations are then transmitted directly into the inner ear by means of a chain of bones attached to the lower jaw. This process is comparable to the transmission of auditory signals by the ossicles in the human middle ear. The snake thus literally hears surface vibrations.

Mammals and birds can localize a sound source by comparing the arrival times of sounds that arrive at the right and left ear through air. For sound coming from the right, the right ear will respond a fraction of a second earlier than the left ear. For sound coming from the left, the situation is exactly the other way around. From this time-of-arrival difference, the brain computes the direction that the sound comes from. Combining approaches from biomechanics and naval engineering with the modeling of neuronal circuits, Friedel and his colleagues have shown that the snake can use its ears to perform the same trick for sound arriving through sand. The left and right side of the lower jaw of a snake are not rigidly coupled. Rather, they are connected by flexible ligaments that enable the snake to stretch its mouth enormously to swallow large prey. Both sides of the jaw can thus move independently, just like two boats floating - so to speak - on a sea of sand, and in this way allow for stereo hearing.

A sand wave originating from the right will stimulate the right side of the lower jaw slightly earlier than the left side, and vice versa. Using a mathematical model, the scientists calculated the vibration response of the jaw to an incoming surface wave. They could show that the small difference in the arrival time of the wave at the right and the left ear is sufficient for the snake's brain to calculate the direction of the sound source. The extraordinary flexibility of the lower jaw of snakes has evolved because being able to swallow very large meals is a big advantage if food is in short supply and competition fierce. Moreover, the separation of the sides of the lower jaw also allowed this very interesting form of hearing to develop.

SOURCE: Technical University Munich (2008, February 25). Snakes Locate Prey Through Vibration Waves. ScienceDaily. Retrieved April 9, 2008, from <http://www.sciencedaily.com/releases/2008/02/080221105350.htm>

PHOTO: It is often believed that snakes cannot hear. Snakes do, however, possess an inner ear with a functional cochlea. (Credit: iStockphoto)





Turtle talk

Tortoises under threat from sea worm

A NEW threat is emerging to marine life at the bottom end of the Murray River, with increasing numbers of freshwater tortoises falling victim to sea worms attracted by the saline waters.

A tortoise whose shell has been infested by the bristle worm
An unknown number of tortoises have died at the Lower Lakes of the Murray and near the mouth of the river in South Australia, while one volunteer group has taken 150 injured tortoises into its care.

"We got our first call in mid-March, but we didn't think much of it," said Native Animal Network volunteer Deanne Smith. "We had two calls in two weeks, but then it just snowballed."

The tortoises are turning up on river and lake shores or stuck in mud banks, after being paralysed by the predatory bristle worms.

The worms attach themselves to the tortoises and infest their shells with their castings so they are unable to swim or walk.

"They (bristle worms) don't normally turn up in fresh water, but now they are able to live in the lakes," Ms Smith said.

"The more castings that are attached, the heavier it makes the tortoise. In the worst cases, they look like rocks."

The infestation can mean a slow death for the river creatures.

"They can't get away from predators, and some of them are being found with rat bites," Ms Smith said.

"They also move their limbs to aid breathing, so if they can't move, they find it hard to breathe."

The lakes and the bottom end of the river are heavily saline, and without solid rainfall or fresh water to flush out the system, the prognosis does not look good for the tortoises and other freshwater marine life.

Members of the public are being asked to alert authorities if they find an injured tortoise.

Yesterday, Murray-Darling Basin Commission chief executive Wendy Craik warned of harsh consequences for the bottom end of the river if inflows remained low for five years.

"Clearly, there wouldn't be enough fresh water for the Lower Lakes if these conditions we've had the last year or two continue," she said. "It's hard to see where you would get water for the Lower Lakes."

Waters in the lakes are already 0.4m below sea level and falling.

They are under threat of being poisoned by acid-sulphate soils if lake beds are further exposed.

Dr Craik acknowledged that one option was to let sea water in, turning the lakes saline and killing off existing marine life.

"Letting in the sea might be a less worst-case option than having acid-sulphate soils on the Lower Lakes, but that would have to be a last resort, probably," she said.

Dr Craik also warned that drastic falls in water flows on the Victorian section of the Murray had already equalled the CSIRO's most extreme climate change predictions for 50 years from now.

"The average inflow for the last decade crosses the CSIRO's extreme climate change scenario for the Victorian Murray in 2055," she said.

"So what we've been experiencing is what we thought we might get in 2055."

AUTHOR: Andrew McGarry

SOURCE: The Australian 11 April 2008, <http://www.theaustralian.news.com.au>

Does the world need Leatherbacks?

From DOTEARTH, The New York Times Blog, by Andrew Revkin. An interesting answer to his question "Does the World Need Leatherbacks?" An Interesting response co-signed by Sylvia Earle, Carl Safina, and James R. Spotila

The World Needs Leatherback Turtles

There are two races going on in the Pacific Ocean. One is "The Great Turtle Race" greatturtle.com being presented on the Internet by The Leatherback Trust and over 20 other organizations to inform and educate the public about the biology of the leatherback turtles. The second race is a "Race for Survival" being presented by humanity as it strip mines the Pacific Ocean for fish, and the surrounding lands for development sites, minerals and forests. Recent blog posts question whether we, humans, really need the leatherback turtle and by extension the rest of biodiversity as well. Obviously we think the answer is yes.

Leatherback turtles are the "Panda of the Pacific." They are symbolic of the great biodiversity that inhabits the oceans. That biodiversity is threatened by human activities ranging from overfishing to global warming. So what? Does it matter? That is the way the situation is usually addressed. We humans focus on the next paycheck, the cost of gasoline, and the next meal. So let's put the leatherback in a broader perspective. Let's look beyond this week and beyond the next financial quarter. Why do we need the leatherback and all the rest of the earth's biodiversity?

First, we need the leatherback, the panda and the worm because they might be useful to us. We have all heard about medicines that come from the rain forest. That is true. But consider this. With all of the millions of species on this planet is it possible that there is a cure for colon cancer in the genetic information of a beetle, a plant or a fungus in the forests of Costa Rica? The earth is like a house overflowing with wedding presents. When the bride and groom come home from their honeymoon they decide it is too crowded and throw out some of those gifts. A few weeks later they find that they don't have a toaster or a vacuum. They were there but got thrown away. That is what we are doing, throwing away the gifts of biodiversity before we even unwrap (study) them. There are scientists who question whether biodiversity is needed for the stability of ecosystems. We might want to keep that biodiversity around until we figure that out.

Second, we save biodiversity because of aesthetics. We like pandas and leatherbacks, and eagles and pretty insects, if they are not biting us. So we save charismatic animals and plants because we like them, because we are emotionally attached to them. Leatherback hatchlings are cute. Pandas are cute all the time. Sturgeons aren't exactly cute, but are certainly interesting. We keep them because we are in control and we like to have them around. The farmer in Africa is less enamored of the elephant that crushes his garden than the city dweller in Manhattan who like to watch elephants on television. So we save the things that we like, unless someone can make more money and biodiversity happens to get in the way. So we put houses and hotels on sea turtle nesting beaches and shopping centers over wetlands. It is hard for cute to win over money.

Third, and most important, even if we don't need biodiversity, the species that make up that biodiversity have their own right to exist. All species survive by eating or out competing members of other species. But all species have an inherent right to exist in the world as it continues to evolve. We, the humans, do not have the right to cause other species to go extinct, whether that is the polar bear in the melting arctic, the butterfly in the rain forest or the rattlesnake in Pennsylvania. Extinction is natural given the normal processes of nature, but when humans cause a species to go extinct that changes the equation of evolution. Quite frankly this is a moral issue. We did not put other species on the planet and we do not have the right to take them off of it! Leatherbacks in the Pacific Ocean have declined by 90% in the last 20 years. They are going faster than you think. Watch the Great Turtle Race, cheer them on, and help them to survive. (www.greatturtle.com)

From Sylvia Earle, National Geographic, Carl Safina of the Blue Ocean Institute, James R. Spotila, widely seen as one of the leading experts on the species.

GO TO: <http://dotearth.blogs.nytimes.com/2008/06/04/how-much-nature-is-enough/>

GO TO: <http://www.greatturtle.com/2008/>

THE AUSTRALIAN



Frogs in other languages

Afrikaans- frog/toad: padda
Albanian- frog: bretkocë toad: thithëlopë, zhabë
Ayapathu (an Australian language)- frog: thata
Arabic- frog: difdi' or dafda' toad: difdi' al-jabal (lit. 'mountain frog')
Azerbaijani- frog: qurbaga
Bengali- frog: byang
Bulgarian- frog: zhaba (ZHA-ba) (same Cyrillic spelling as Russian)
Cambodian- frog: gong-gaip
Catalan- frog: granota toad: gripau
Chinese- frog: qing wa
Danish- frog: frø toad: tudse
Dutch- frog: kikker toad: pad
Ethiopian- frog: enkurarit
Esperanto- frog: rano toad: bufo
Finnish- frog: sammakko toad: rupisammakko (lit. 'scab-frog')
Fiji Islands- frog or toad: boto (kra-PO)
French- frog: grenouille- toad: crapaud (kra-PO)
Gamilaraay (an Australian aboriginal language)-frog: gindjorra
German- frog: der Frosch toad: die Kröte
Greek- frog: batrachos (accent on first syllable)
Hausa- frog: kwado
Hawaiian- frog: poloka, lana, mo'o lele lu'elu'e
Hungarian- frog: beka toad: varangy
Indonesian - frog: kodok
Italian- frog: ranocchio (m. rhymes with Pinocchio!) or ranna (f. cf latin)
Icelandic- frog: froskur toad: karta
Irish- frog: loscann toad: buaf
Japanese- tree frog: amagaeru frog: kaeru or kawazu singing frog: kajika
bullfrog: tonosamagaeru
Kazak- frog: qurbaqa (same Cyrillic spelling as Uzbek)
Kyrgyz- frog: baka
Korean- frog: Kae-gu-ri toad: tu-ggo-bi
Latin- frog: rana small frog: ranunculus toad: bufo
Lao- frog: gop toad: kaan-kak
Lithuanian- frog: varlė toad: rupuzė
Malay (Malaysian)- frog: katak
Norwegian- frog: frosk (pr. 'frosk') toad: padde (cf. Dutch and Swedish)
Persian- frog/toad: qúrbághih (gore-baah-gey)
Philipeans- I'm told there's more than 100 languages in this country!
In Tagalog (language of Manila, the capital), frog: palaka In Visayas (a region in Southern Philippines), frog: paka
Polish- frog: zaba (where z is pronounced like J in the french name Jaques)
Portuguese- frog: rã, rana toad: sapo
Romanian- frog: broasca
Russian- frog: lyagushka (lya-GOOSH-ka) toad: zhaba (ZHA-ba)
Samoan- frog: rane
Sanskrit- frog: bheka
Scots Gaelic- frog: losgann (cf. Irish) (Northern) Sotho frog/toad: segwagwa, segwegwe
Serbian- frog: zaba
Slovene- frog: zhaba (zaba) toad: krastacha (krastaèa)
Spanish- frog: rana toad: sapo
Swahili- frog/toad: chura
Swedish- frog: groda toad: padda
Tamil- frog: tappaLai
Tatar- frog: baka
Tibetan- frog: sbal pa toad: sbal pa rigs shig (literally "a kind or species of frog")
Thai- frog: gòp (kab)

Here is a compilation of Australian Aboriginal words, places and meanings in respect to frogs. This list is not complete and any additions should be forwarded to the editor. Naming houses has increased in popularity and those who are devoted to herps may wish to use some of these words. For example, the author keeps a few turtles and has named his email address "Pinkenbah" meaning a place of freshwater turtles. Appropriate enough? However, this is not limited to email addresses or house names, but has endless possibilities, even if it is just for curiosities sake. There are between 500 and 600 different Aboriginal languages or dialects within Australia (Elkin 1974), therefore, Aboriginal words have been placed in alphabetical order.

AMPHIBIANS

BONG BONG Many frogs
BULLAKIBIL Bullfrog
BUN-YUN BUN-YUN Frog
CARCOAR Frog
GOOLOO-ROOEYBRI Bullfrog
JUNEE Frog
KYARRAN Frog
MENPERRE Frog
NANGKITA Small frog
NUDGE Green frog
TATA Frog
TENDU Climbing frog
THIDNAMURA Toad
TIDDALICK Frog
TUKI Bull frog
TYARAN Frog N
WITHINKA Green frog
YUAIA Frog

A Guide to Keeping Australian Scorpions by Mark A Newton

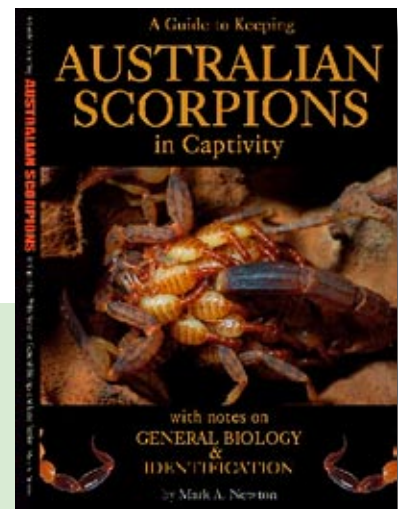
This book started out with the intention of being a short, simple guide to Keeping Australian Scorpions as it was apparent nothing in print was available to help those interested in Scorpion Husbandry. It seemed that one of the big magnets to keeping scorpions was their amazing biology, and so it seemed imperative the keeper would want to know more about aspects of life history, diversity, species and more and so this book developed into far more than was originally planned.

Understanding an animal's biology and ecology is the foundation to knowing how to keep it in captivity. This book relates to various aspects of life history, physiology and ecology to help in establishing the best forms of housing, including environmental physical parameters such as temperature, humidity, substrate types etc.

A book of this type would be a little short of complete if it did not include a section on known species, their approximate distributions and general description.

Problems such as taxonomy and species descriptions are addressed along with more fun stuff such as what to take on a collecting trip, what things you might need to study scorpions if that is your interest - it's not all science of course.

This book is a MUST HAVE for anyone half serious about Keeping Scorpions, it will be the best investment you ever make. You now have the opportunity to purchase pre-release books, signed by the author from http://www.thedailylink.com/book_orders/promo1.html



Something to think about...

Susan Strauss, in her 1996 book *The Passionate Fact: Storytelling in Natural History & Cultural Interpretation*, tells us that the average American citizen watches 26 hours of television a week. If knowledge comes through direct experience, imagine how limited their true knowledge is. Furthermore, living experience with the natural world is an increasingly rare commodity in a society that is more often bathed in virtual reality than actual reality.

Froggy jokes

Q. How can you tell if a frog doesn't have ears?
A. You yell "Free Flies" and he doesn't come.

Q. How do you confuse a frog?
A. Put it in a round bowl and tell it to take a nap in the corner.

Q. How does a frog confuse you?
A. When he comes out and says he needed that nap and feels much better.

Q. How do you apologize to a witch?
A. Ribbit!

Q. What did the frog say to the fly?
A. You are really starting to bug me!

Q. What does a frog say when it sees somethin' great?
A. Toadly awesome!

Q. What do you call a frog with no legs?
A. It doesn't matter- he won't come anyway.

Q. What do you call a frog with legs?
A. Dinner.

Three frogs walked into a bar, the fourth frog ducked.

A frog goes into a bank and walks up to the window. He can see from the teller's nameplate that the teller's name is Patricia Whack. So he says, "Ms. Whack, I'd like to get a loan to buy a yacht and go on a cruise." Ms. Whack asks how much money he wants to borrow. The frog says around \$55,000. Ms. Whack asks the frog his name and he replies "Kermit Jagger, it shouldn't be a problem, I know the branch manager." Ms. Whack explains that \$55,000 is a large sum of money and that he will need to put up something as collateral against the loan. She asks "do you have anything as collateral?" Kermit says, "Sure, I have this," and produces a small pewter cricket, about an inch tall. Stunned, Ms. Whack explains that she'll have to speak with the branch manager and walks into an office at the front of the bank. She finds the branch manager and says: "There's a frog by the named of Kermit Jagger out there who says he knows you and wants to borrow \$55,000. He wants to use this as collateral." She holds up the small pewter cricket. "Like, what is this thing suppose to be?" So the branch manager looks back at her and says: "It's a knick knack, Patti Whack. Give the frog a loan. His old man's a Rolling Stone."

Memberships

Members – please note memberships are due at the end of the calendar year – last date for payment is by the annual general meeting of a given year. 2007 members will receive this newsletter only for 2008. Please assist us by renewing as soon as you can (next newsletter will be in June, next meeting is in March).

Gaby Schierenbeck	
Ms Mandy Lindsay	Atherton
Bevan Pritchard	Atherton
Keith McDonald	Atherton
Wai Awarau	Atherton
Philip Bennett	Atherton
Dr Amber Gillett	Beerwah Old
Dr Stacey Gelis	Beerwah Old
Robyn King	Broadbeach Old
Dominic Chaplin	Bungalow
Bonnie Arbon	Caboolture Old
Iudy Catchpole	Chambers Flat Q
Keith Martin	Clifton Beach
Dan Vermilya	Connecticut, Usa
Charles Annicelli	Connecticut, Usa
Michael Cermak	Earlville
Cindy Harkness	Edge Hill
Jo Loader	Glasshouse Mountains, Old
Kia Bailey	Glasshouse Mountains, Old
John Booy	Gordonvale
Grant Turner	Innisfail
Val Speedje	Innot Hot Springs
Kent Jozefowski	Kallangur, Old
Murray Wellington	Kuranda
Kuranda Envirocare	Kuranda
Rosy Maccarone	Kuranda
Cathy Retter	Kuranda
Clarissa Morris	Landsborough, Old
Sue Morris	Landsborough, Old
James & Margaret Sweetzer	Malanda
Merv Robson	Malanda
Inga Lorenz	Malanda
Howard & Aggie Smith	Malanda
Beryl Davidson	Malanda
Marney Fichera	Mooroobool
Michael & Sharon Williams	Newport, Vic
Val Bonner-Burrows	Oxley Old
Cheryl Lammeretz	Peachester, Old
Ian Wilesmith	Redbank Plains Old
Andrea James	Redlynch
Tricia Schilling	Reesville, Old

Wendy & Phillip Grimm	St Ives Nsw
Darren & Jo Green	Trinity Beach
Michael Anthony	Whitfield
Shaun Cook	Whitfield
Maria Destro	Whitfield
Eleanor Duignan	Whitfield
Michael Willcox	Whitfield
Dr Che Phillips	Yara Glen Vic
Murray Powdrell	Yorkeys Knob
Martin Cohen	Yorkeys Knob
Alan Gillanders	Yungaburra
Margaret Egger	Yungaburra
Neville Simpson	Yungaburra
Claudine Grandjean	Yungaburra
Sian Moore & Scott Radcliffe	Yungaburra
Chris Tsilemanis	Yungaburra
Carroll/ Liz Lionel & Sandy	Yungaburra
Garrie Douglas/Lee Curtis	Yungaburra
Alastair & Amanda Freeman	Yungaburra

Meetings 2008 - 2009

Friday 22nd August – 7.00 pm at the Edge Hill Environment Centre - Kelvin Marshall, one of Cairns best photographers with a great collection of photos from a recent trip to Borneo

Friday 31st October – 7.00 pm Yungaburra CWA Hall – Jean Horton from the Environmental Protection Authority will outline the regulations concerning the collection & keeping of tadpoles & frogs in Queensland

Friday 7th November – venue TBA Cairns – Laura Worth from the Environmental Protection Authority will outline the regulations concerning the collection & keeping of tadpoles & frogs in Queensland

January TBA – We hope to have Dr Martin Cohen again, this time in Yungaburra

February TBA – Cairns – watch this space!!!

March TBA – ANNUAL GENERAL MEETING - Yungaburra

Field trips 2008 - 2009

Saturday 23rd August 2008
Granite Gorge (population of brown White-lipped Treefrogs)

Saturday 25th October 2008
Davies Creek Falls (Waterfall Frogs)

Saturday 8th November 2008
Koolmoon Creek (weekend – rainforest trek)

Saturday 6th December 2008
Daintree (weekend)

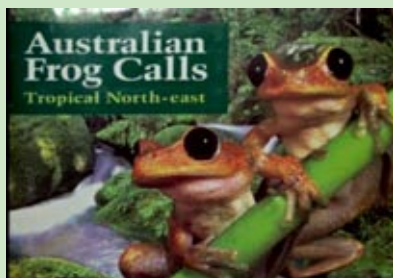
Saturday 31st January 2009
Yarrabah Rd Gordonvale (frogs in the canefields)

Saturday tba February 2009
Mareeba Wetlands (dry country frogs)

NOTE: Please contact Michael Anthony on 0427367888 for details of field trips



TFC Merchandise



Frog calls CD \$25.00

Visors	\$20.00
Frog Calls Wet Tropics (Tape)	\$10.00
Attracting Frogs to Your Garden	\$20.00

Limited stocks available, be quick and order now!

Phone Michael Anthony

4053 2759.



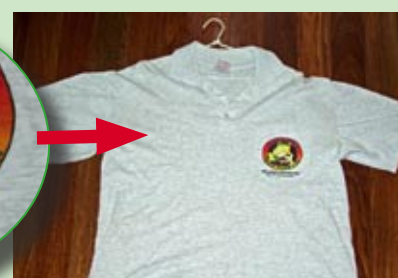
Caps \$20.00 each



Tee shirts \$15.00 each



Polo shirts \$10.00 each



Polo shirts \$10.00 each



Tablelands Frog Club

Mail Bag 71

YUNGABURRA QLD 4879

<http://www.tablelandfrogclub.com>

Application for Membership

- \$15.00 Adult membership
 Membership type
 \$15.00 Family membership
 \$5.00 Junior/Associate

Surname(s): _____ Given name(s): _____

Address: _____
_____ P/Code _____

Postal: _____
_____ P/Code _____

Phone (h) _____ (w) _____ (m) _____

E-mail Address (for newsletters and updates) _____

Occupation: _____

The Tablelands Frog Club Incorporated is incorporated under the Associations Incorporation Act.

TFC OFFICE USE ONLY			
Membership paid:	\$ _____	Paid by:	<input type="checkbox"/> Cash, <input type="checkbox"/> Money Order, <input type="checkbox"/> Cheque
Receipt number:	# _____	Date issued:	_____/_____/_____
Membership number:	# _____	Date entered:	_____/_____/_____



Tablelands Frog Club

Mail Bag 71
YUNGABURRA QLD 4879

MEMBERSHIP TAX RECEIPT

Membership paid: \$ _____ Paid by: Cash, Money Order, Cheque

Receipt number: # _____ Date issued: _____/_____/_____

Membership number: # _____ Signed: _____

Please Post Membership Application to: Mail Bag 71, Yungaburra QLD 4872



The Croaker

Newsletter of Tablelands Frog Club
June 2008

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Mail Bag 71
YUNGABURRA QLD 4879

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Croaker!**



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Read it!**

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