



# *The Croaker*

**Newsletter of the Tablelands Frog Club**

---



Frog of the month  
**Ornate Burrowing Frog**  
*Lynodynastes ornatus*

---

**April 2008**



# Tablelands Frog Club

## Executive Committee 2007-2008

<b>President:</b>	Michael Anthony capeherp@hotmail.com	(07) 4053 2759
<b>Vice-President:</b>	Keith Martin keithmartin30@hotmail.com	(07) 4055 3061
<b>Secretary:</b>	Marney Fichera marney_fichera@msn.com	
<b>Treasurer:</b>	Eleanor Duignan eduiquan@bigpond.net.au	(07) 4053 4857
<b>Committee:</b>	Neville Simpson Inga Lorenz Merv Maria Destro Shaun Cook (junior)	
<b>Editorial:</b>	Darren Green pinkenhah@internode.on.net	4057 5603
<b>Website:</b>	<a href="http://www.tablelandfrogclub.com">http://www.tablelandfrogclub.com</a>	

# Tablelands Frog Club

Mail Bag 71

YUNGABURRA QLD 4879



### DISCLAIMER:

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

The Croaker is now available as a PDF to members that have access to email. The PDF version of The Croaker is in full colour, and contains more information than mail-out photocopied versions. Email costs less to send out, and doesn't waste paper and other resources, making it good for the Tablelands Frog Club and the environment. To take advantage of this service, contact the Tablelands Frog Club with your email details. You will need Adobe Acrobat Reader to open PDF files. The latest version of Adobe Acrobat Reader is available as a free download from:



<http://www.adobe.com/downloads/>

<http://www.tablelandfrogclub.com>

## Editorial bullrush!

Hello everyone, and welcome to our second 'Croaker' for the year. Once again I find myself calling on members to submit articles. All the work seems to be left up to a few individuals. The trouble with this is that after a while these individuals get burnout and resign from their roles in the club. Take the newsletter, for example. Mike Anthony and myself seem to be the main contributors. If you have anything to submit, please forward it to my email address. Anything is appreciated, not only by me, but all the TFC members. Further to this, the TFC would appreciate active members. Some people may be good at writing letters (eg. to newspapers or politicians), see the Wilderness Society on page 10, others may like to help with supper after meetings, or promoting the club. The roles are as many and as varied as your imagination. If you have any ideas and would like to help with the TFC, then give Michael Anthony a call, or email. I'm looking forward to an expansion in the club, and raising our profile in the community.

In this edition I have included a section on amphibian fossils. Hopefully this may satisfy some of our members with an interest in pre-history. The next issue of The Croaker, due out in June may expand to include the closest frog relatives, the reptiles. This of course depends on space, and hopefully you will all send in something to fill the pages anyway. One idea for the newsletter, that we can all contribute, is a short story on how you became interested in frogs. Now that's something everyone can write about... no excuses.

**Darren Green**

## Front Cover

Frog of the mont, Ornate Burrowing Frog (*Limnodynastes ornatus*), 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. A mobile library of scientific and general information on frogs is available at these meetings. 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.

**To encourage children's interest in frogs:** The Club holds workshops suitable for junior members, runs a section called 'Kid's Corner' in the newsletter aimed at the younger group and conducts various competitions with appropriate educational prizes. The Club also guides children in frog breeding programmes and encourages them, under parental guidance, to participate in suitable field trips.

# From the president's lily pad

2007 has been a mixed year for the frog club, however overall it has been a successful year. We have established a high quality newsletter and a fantastic website. Meeting were a mixed success, with some poorly attended and others well attended.

We kicked off with a most interesting presentation from Steve Richards on his experiences in Irian Jaya (organised by the previous committee). The extremely remote and untouched area he has been going to has produced many new species of frog.

In June we had Michael Cermak talking on his experiences in Borneo, with some absolutely brilliant photography. In October we held a "members night" to share around photos and help with identification. This meeting was poorly attended with only a total of 6 people attending. This was held at the Mitchell Room at the Mareeba DPI, which is a fantastic venue. Those who attended were treated to a world first – photographs of a black Kookaburra by Eleanor Duignan.

In November we had Di Horsburgh from the Wilderness Society, with the society's Cape York Presentation, featuring some great photos and information about the importance of Cape York as a wilderness area and the need for protection of its many and varied habitats and wildlife.

Possibly the highlight of the year was the Frogs and Tadpoles of Northern Australia, by Marion Anstis. Marion is arguably Australia's foremost expert on frogs (and definitely tadpoles). She is currently working on a book on the Frogs and Tadpoles of Australia. A number of frog club members helped Marion with field work, hopefully some of the frogs we found will end up in her book.

Alastair Freeman capped off the year with his presentation on sea turtle monitoring.

Much gratitude is extended to all our guest speakers for the year. We have some more great speakers lined up for this year.

The club made a tiny profit for the year, mostly due to having our newsletter produced at no cost, thanks to Newsletter Co-ordinator Darren Green and member John Booy. The only cost is now for those members requiring posted newsletters. The idea of sending newsletters out via email has been successful, however we have been remiss with sending out the paper newsletters in time, we will improve this situation. If anyone is not receiving newsletters (via post or email) please let the committee know.

We still have the age old problem of too few doing too much, and a few of the club's regular activities have been curtailed due to lack of volunteers (frog festival and garden expo). We hope to have a presence at the garden expo (September) and the National Parks Centenary at Millstream (June) this year.

Field trips were generally poorly attended, apart from the Mareeba Wetlands trip in February. This is always a success and we will continue the tradition next year. We will put field trips on hold for the dry season as there is little frog activity during this time. Meetings and field trips for the year are included in this newsletter.

We have had many new members this year, but unfortunately seem to have lost a few existing members. Memberships are due at the end of the calendar year, and the last date for payment should be by the time of the AGM (usually late March).

We need your support so please renew your membership!

**Michael Anthony**

<http://www.tablelandfrogclub.com>

Friday 23<sup>rd</sup> May, Cairns - 7.00 pm at the Edge Hill Environment Centre, Edge Hill State School.  
Martin Cohen – Wildlife of the Wet Tropics.

## **“Wildlife in Australia’s Tropical Rainforests- with reference to the potential impacts of climate change”**

**Presented by one of tropical Australia’s leading wildlife commentators, Dr Martin Cohen, this presentation will take you into the hidden and little-known world of Australia’s tropical rainforests.**

Australia’s tropical rainforests contain more plants and animals than any other area in the country - many of which live nowhere else. People from all over the world, and within Australia, visit this natural wonderland to glimpse its secretive animals. As a result, **Dr Martin Cohen** - an expert in the region’s wildlife – presents this informative talk featuring his stunning, award-winning photography combined with fascinating information on many of the rainforest’s rare, threatened and significant animals. **Martin also presents current research into the impacts of climate change on the biodiversity of this unique wildlife.** Also see <http://www.wildaboutaustralia.com>



# In the spotlight

## Ornate Burrowing Frog

(*Lymnodynastes ornatus*)

### Details...

**Family:** Myobatrachidae

**Common name:** Ornate Burrowing Frog

**Scientific name:** *Lymnodynastes ornatus*

**Description:** This frog has a wide range of colours and markings. It can vary from dark brown above to pale grey with dark irregular markings.

There is often a butterfly or U-shaped light patch on the back behind the eyes. The legs and arms are barred or spotted with dark markings and the belly is white and smooth. The skin on the back has small warts and the toes are slightly webbed.

**Size:** 45 mm

**Habitat:** This frog lives in a wide range of habitats from the wet sclerophyll forests of the coasts to the dry woodlands of central Australia.

**Call:** Is a very short, rapidly repeated "unk... unk...unk".

**Breeding:** Males call while floating in the water. Breeding sites can range from puddles to large dams.

**Eggs:** Are laid in a small floating, domed foam mass which rapidly collapses to form a thin floating film, this characteristic being a critical difference from other *Lymnodynastes* species.

A female may lay more than 1500 eggs at a time.

**Tadpoles:** Are medium in size and grey-brown in colour, with gold flecks and dark spots. They grow rapidly and are sometimes predatory on smaller tadpoles.

**Similar species:** This species can be distinguished from other *Lymnodynastes* by its lack of a tibial gland (a lump on the upper surface of the back legs).

**Other characteristics:** This burrowing species is usually active after rain.

### Conservation Information...

**Suspected threatening processes:** None stated.

**Population size:** An estimate of the total number of adults present in the species entire range is >50000 individuals. Some factors affecting population size and distribution are known, but 1 or more major factors are unknown.

**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:** Not currently monitored.

**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 201-1000 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.

**Frogs Australia**  
NETWORK 

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



**June**  
**"in the spotlight"**  
**focuses on the**  
**Striped Rocket Frog**  
**(*Litoria nasuta*)**



# In the spotlight

## Ornate Burrowing Frog

(*Lymnodynastes ornatus*)



### Distribution

This frog was first described from Port Essington in the Northern Territory in 1841. Their distribution covers a wide variety of habitats from the northern half of NSW, through Queensland, NT and north-west W.A., also including some islands of the Torres Strait. It is common to this region, found in virtually all habitats except deep rainforest. Specimens are common in the Cairns suburbs, showing up on busy roads during wet weather and often found when transporting or digging soil. This is one of the most common species found on inland roads after rain and is commonly heard calling in roadside ponds & ditches during the wet season.

### Identification

This is another frog that could be confused with a Cane Toad. It does not grow as large (maximum of about 45mm), its eyes are bigger compared to the rest of the body; it has bold stripes on its legs and upper lips and lacks the large poisonous parotid glands of toads. The bold stripes on the upper lip and larger distance between the lip and the bottom edge of the eye differentiate this species from other short, squat burrowing frogs. The colour and pattern of this species is extremely variable – pattern may be variegated, plain or with a bold mid-dorsal stripe, but always has the leg and lip stripes.



### Habits

Its ability to burrow well down into the soil and remain dormant for long periods of time allows it to survive in dry areas away from permanent water. It does not form a “cocoon” as do many other arid adapted frogs, but most likely burrows deeper into moister, sandy soils. This frog is usually only found active after rain or on warm humid nights and emerges to breed in the pools and puddles formed by heavy rain, as well as shallow flowing water. Freshly dug ditches and pools on road surfaces are known to have been utilised. This species is a “backwards sliding burrower”, that is it uses its hind legs to dig downwards and backwards into the soil, as against some other species which burrow downwards in a circular motion. It feeds on arthropods (animals with an exoskeleton such as insects, spiders, centipedes etc).



### Reproduction

The call has been described as a short, nasal “unk” repeated slowly. Males call while floating spread-eagled in the water, one of the very few species to do so. Also unlike many species of frog, male Ornate Burrowing Frogs are only marginally smaller than the female. The male and female frogs perform amplexus while floating in the water; the third finger on each hand of the male is enlarged, enabling him to grasp the female in an inguinal embrace (grasping her in front of the back legs). This enables the female to have her hands free to paddle the water and trap air bubbles beneath her to whip the egg jelly into a buoyant froth in which the eggs are trapped forming the familiar floating egg mass of frogs of this genus. Females develop flanges on the underside of the inner three fingers of each hand, thus increasing their surface area to assist in this process. Up to 1600 eggs are contained in this foam nest, which in warm water collapses into a film on the surface – eggs may hatch within 18 hours. Breeding has been recorded at air temperatures of around 26°C and relative humidities of 88.5 to 96%. Water temperatures of egg deposition sites have been measured from 27 to 38°C.

This species of frog has one of the most rapid development stages of any species. Tadpoles may metamorphose within 21 to 26 days at a temperature of 30°C – compared to, for instance, *Lymnodynastes dumerilli* with a development period of 12 to 15 months. This rapid development would be common to tropical species which utilise temporary water for reproduction.



The tadpoles are brown on the dorsal surface with a darker patch between the eyes and on the tail muscle. Juveniles metamorphose at a length of 6 to 11mm. They may form dense aggregations and cannibalism may occur amongst tadpoles of this species, especially in pools that are drying up. Breeding occurs mostly at the start of the wet season. In the Kimberley Ornate Burrowing Frogs breed throughout the wet season and individuals may breed on more than one occasion each season.

AUTHOR: Michael Anthony  
PHOTOS: Michael Anthony.



# Dr Thomas Burton

## Profile of a herpetologist

Dr Thomas Burton's area of research is frog anatomy and systematics, particularly the muscular anatomy of the feet of frogs, finding characters in the foot muscles that indicate the relationships of the frog families, or that represent adaptations to various ways of life.

Since 1978, Tom has worked on the anatomy and systematics of frogs, particularly the microhylids of New Guinea, and on the evolution of muscle groups in frogs, particularly the muscles of the hand and foot.

In the course of his research, Tom has participated in the description and naming of a number of new species of frogs, and a new genus of New Guinean frogs. He has also described and named a number of hitherto undescribed muscles in frogs. In 2002, a newly discovered ligament in hands of South American frogs of the genus *Scinax* was named "Burton's ligament" in recognition of my anatomical work.

Some of Dr Burton's recent publications include:

Burton, T.C. (2004) Muscles of the pes of hylid frogs. *Journal of Morphology* 260: 209-233.

Richards, S.J. and Burton, T.C. (2003) A new species of *Choerophryne* (Anura: Microhylidae) from Southern Highlands Province, Papua New Guinea. *Transactions of the Royal Society of South Australia* 127: 47-51.

Burton, T.C. (2001) Variation in the foot muscles of frogs of the family Myobatrachidae. *Australian Journal of Zoology* 49(5): 539-559.

Davies, M. & Burton, T.C. (2000) Redefinition of the Australian frog *Limnodynastes depressus* Tyler (Myobatrachidae: Limnodynastinae). *Transactions of the Royal Society of South Australia* 124:141-150.

SOURCE: La Trobe University Bendigo.

AVAILABLE: <http://www.latrobe.edu.au/pharmacy/staff/honorary/honorarystaff.htm>

## Every good frog deserves a name

New species of frogs are frequently discovered in Papua New Guinea, and names have to be thought up for them. Sometimes a newly discovered species is named to honour a herpetologist that has contributed significantly to the knowledge of the frog fauna. One such species is *Choerophryne burtoni*, named in 2007 to honour Dr Thomas Burton of the Bendigo Campus of LaTrobe University - yes, him - "in recognition of his substantial contribution to New Guinea microhylid systematics."

The new species belongs to the family Microhylidae, which ranges the tropics, found in Africa, Madagascar, South America, Southern and South-East Asia, and especially in the hot spot that is New Guinea, where over 150 species have been named, and maybe another 100 await description. Despite their name, microhylids are not necessarily small. Specimens of some New Guinea species of the genus *Callulops* would easily fill a bread-and-butter plate. However, many species, including *Choerophryne burtoni*, are tiny. The diagnosis of Microhylidae depends upon internal structures - the shapes of the bones of the breast and back, and the possession of an extra belly muscle. The discovery of this muscle was one of Burton's earliest contributions.

The genus *Choerophryne* consists of five small terrestrial or scansorial (climbing) species found only on New Guinea. They are easily recognizable because of their elongated snouts formed by the projections of two small bones of the upper jaw. The name "*Choerophryne*" was first coined by an early 20th century Hungarian herpetologist named Mehely, and the artificial "common name" given to these species - "artificial" because no-one on earth actually uses it - is "Mehely Frogs", where Mehely is pronounced, apparently, as "May-hay", so the new species is "Burton's Mehely Frog". "*Choerophryne burtoni*" is pronounced "ker-OFF-rin-ee BUR-ton-eye."

*Choerophryne burtoni* has been found in only one location in the Kikori

Integrated Conservation and Development Project Area in Southern Highlands Province, PNG. It is quite common in its restricted area of steep limestone karst, but although the males make a lot of noise, they are very hard to catch, because they are so small (maximum size about 12.5 mm - half an inch), call from concealed sites like rolled-up leaves, and live in terrain that is riddled with sink-holes, hence difficult and dangerous for humans, especially at the very time the frogs call, i.e., in the dark when it is raining.

It is known to be a new species by differing with the previously named species in the structure of its first finger, the relative length of its legs, and the size of its snout (small by *Choerophryne* standards), and especially by the mating call of the males, which differs in pitch, duration and number of notes per call. Frogs of the new species are a "fleshy orange-brown" with darker patches on the back. The irises of their eyes are orange.

Dr Burton is reported to be "dead chuffed" and rumoured to have opened a bottle of Grange to celebrate with a select few friends.

REFERENCE: Richards, S.J., Dahl, C.S. & Hiaso J. (2007) Another new species of *Choerophryne* (Anura: Microhylidae) from Southern Highlands Province, Papua New Guinea. *Transactions of the Royal Society of South Australia* 131: 135-141.

AUTHOR: Antwoaan Grbac, informed by Cherie Burton.

FIRST PUBLISHED: 2008, Bendigo Field Naturalist's Club newsletter, Whirrakee 29(1):4-5.

PHOTO BELOW: *Choerophryne burtoni* by Stephen Richards.



## Bullfrog ballet

The Bullfrog Ballet video, from the Vancouver Aquarium, is available at <http://frogmatters.wordpress.com/2008/03/14/bullfrog-ballet-among-best-videos-so-far-in-the-year-of-the-frog/>

## Kermit Lobbies Congress

Thursday, March 13, 2008, MuppetNewsFlash.com

Yesterday Kermit the Frog appeared in Washington, D.C. yesterday to help promote awareness for endangered amphibians and to speak on behalf of his amphibian brethren. Besides speaking to the committee he also took some Q&A about if he has any plans for running for office. For video go to <http://www.muppetnewsflash.com/>



# Amphibian news...

## The relationship between environmental conditions and activity of the giant barred frog (*Mixophyes iteratus*) on the Coomera River, south-east Queensland

**ABSTRACT:** Determining the population density of ectotherms is often confounded by individual activity levels, which are highly dependent on ambient climatic conditions. In this study we used radio-telemetry and streamside surveys to examine the influence of local climatic conditions on individual activity levels (detectability) and streamside density of a population of endangered giant barred frog (*Mixophyes iteratus*) along the Coomera river in south-east Queensland. Temperature was the most important climatic variable influencing the behaviour and hence detectability of *M. iteratus*. The results indicated that males bury under the leaf litter during cold conditions (<18°C) so fewer were detected during surveys. Although females were also found to bury under the leaf litter in cold weather, no significant relationship between exposure and streamside density was detected. This is likely to be due to the lower number of females detected during surveys. The streamside density of juveniles was significantly related to temperature and rainfall, but little of the variance in the data was explained by climatic conditions, despite greater numbers of juveniles being found than adults. These results indicate that, for increased efficiency, surveys of *Mixophyes iteratus* should be undertaken when temperatures exceed 18°C.

**Keywords:** amphibian, climate, detectability, environmental variables, frogs, radio-tracking, surveys.

**REFERENCE:** Koch, A.J. & Hero, J.M. (2007) The relationship between environmental conditions and activity of the giant barred frog (*Mixophyes iteratus*) on the Coomera River, south-east Queensland, Australian Journal of Zoology 55(2) 89–95.



## National Tree Day

It's time to get organised for Planet Ark's National Tree Day 2008 on Sunday 27 July. Now in its 13th year, National Tree Day last year saw 290 000 volunteers plant 1.2 million trees. As the reality of climate change becomes increasingly

prevalent, everyone is wanting to know how they can help. One solution is to join with other Australians in positive action for climate change - planting trees for Tree Day!

### 25 July Schools Tree Day

Drop the books and get outside – it's tree-planting time! Schools Tree Day is a 'tree-mendous' opportunity for children to take an active role in helping protect the environment and combat climate change. The simple act of planting a tree helps inspire a love of nature and a determination to act on its behalf. In 2007, more than 220,000 budding environmentalists at 1,900 schools all over the country learnt how easy and fun it is to help the environment by planting trees on Schools Tree Day. All schools are encouraged to get on board with Planet Ark and help in 2008. For more information, simply call 1300 88 5000 or visit <http://treeday.planetark.com>

### 27 July National Tree Day

Grab your shovels, it's tree-planting time! National Tree Day is an opportunity for all Australians to take a positive and active role in helping protect our environment. By planting native trees and shrubs, we can help to combat climate change, provide food and shelter for our wildlife and beautify our surroundings. Last year, over 290,000 volunteers planted 1.2 million native trees and shrubs at 3100 sites around the country. Everyone is encouraged to get on board with Planet Ark and help in 2008. For more information, simply call 1300 88 5000 or visit <http://treeday.planetark.com>

## South American Frog Secretions Stimulate Insulin Release, Could Offer Diabetes Treatment Hope

ScienceDaily (Mar. 4, 2008) — Secretions from the skin of a South American frog could provide a new treatment for diabetes, says a University of Ulster scientist.

The paradoxical frog, *Pseudis paradoxa*, secretes a substance from its skin which protects it from infection. But the molecule, pseudin-2, may have another use for humans. Researchers found that it stimulates the release of insulin, the vital hormone which is deficient in diabetes sufferers.

Scientists made an artificial copy of the peptide, or protein building block, and showed that it could be used to boost insulin production in people with Type 2 diabetes.

They believe it could provide a new diabetes drug treatment, part of a new class of medicines called incretin mimetics which mimic natural substances.

However more work must be carried out before the frog therapy is ready to be tested on human patients.

The work is being carried out by researchers at the University of Ulster and United Arab Emirates University. Dr Yasser Abdel-Wahab, senior lecturer in biomedical sciences at the University of Ulster, says: "We are at an exciting stage with this research. "We have tested a more potent synthetic version of the pseudin-2 peptide and have found that it has the potential for development into a compound for the treatment of Type 2 diabetes.

"Now we need to take this a step further and put our work into practice to try and help people with Type 2 diabetes.

"More research is needed, but there is a growing body of work around natural anti-diabetic drug discovery that, as you can see, is already yielding fascinating results."

Insulin is essential for controlling the way the body fuels itself with sugar. Normally insulin is produced by cells in the pancreas in the right amounts needed to regulate blood sugar levels. But in Type 2 diabetes either not enough is produced, or the body becomes resistant to the concentrations that are available.

The Type 2 version of the disease is strongly associated with obesity and usually develops in middle age. Type 1, or insulin-dependent diabetes, is a less common autoimmune disease that results in the complete destruction of insulin-producing cells.

Currently there are 2.3 million diagnosed diabetes sufferers in the UK, most of whom have Type 2 diabetes. An estimated 750,000 people have Type 2 diabetes but do not know it.

The frog research was presented March 3 at the Diabetes UK Annual Professional Conference in Glasgow.

Douglas Smallwood, chief executive of the Diabetes UK charity, says, "Although it can be managed with diet and physical activity, Type 2 diabetes is progressive and may require tablets and/or insulin to control it effectively. Good diabetes control reduces the risk of complications including blindness, heart disease, kidney problems and amputation so new treatments are vital."

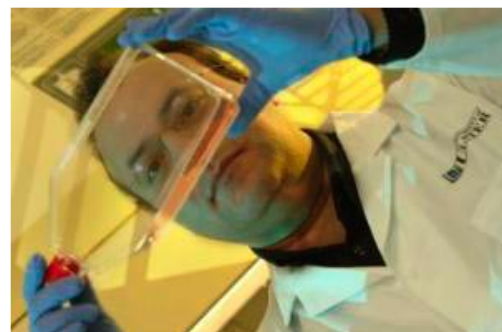
The bright green and pink paradoxical frog, from Trinidad and the Amazon basin, is appropriately

named because of its odd habit of shrinking with age.

As a tadpole, it can reach 27 centimetres in length, but adult frogs are only about four centimetres long.

**REFERENCE:** University of Ulster (2008, March 4). South American Frog Secretions Stimulate Insulin Release, Could Offer Diabetes Treatment Hope. ScienceDaily. Retrieved March 5, 2008, from <http://www.sciencedaily.com/releases/2008/03/080304224051.htm>

**PHOTO:** Biomedical scientist Dr Yasser Abdel-Wahab has discovered that secretions from the skin of a South American frog could provide a new treatment for diabetes. (Credit: Image courtesy of University of Ulster)



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



# Amphibian news...

## Giant frog jumps continents, may have eaten baby dinosaurs

ScienceDaily (Feb. 19, 2008) — A giant frog fossil from Madagascar dubbed *Beelzebufo* or 'the frog from Hell' has been identified by scientists from University College London and Stony Brook University, New York. The discovery of the 70 million year-old fossil frog, of a kind once thought unique to South America, lends weight to a new theory that Madagascar, India and South America were linked until late in the Age of Dinosaurs. The new frog resembles living Horned toads (ceratophryines or 'pac-man frogs') in having a squat body, huge head and wide mouth. With a body length (not counting the legs) of up to 40 cm -- longer than a rugby ball - and a weight of around four kilos (10 pounds), it is more than twice the size of its largest living relatives. The fossil, published in the journal PNAS, enters the Malagasy history books alongside meat-eating dinosaurs, plant-eating crocodiles and giant snakes, all very different from the present day animals of Madagascar.

Professor Susan Evans of the UCL Department of Cell & Developmental Biology says: "This frog, a relative of today's Horned toads, would have been the size of a slightly squashed beach-ball, with short legs and a big mouth. If it shared the aggressive temperament and 'sit-and-wait' ambush tactics of living Horned toads, it would have been a formidable predator on small animals. Its diet would most likely have consisted of insects and small vertebrates like lizards, but it's not impossible that *Beelzebufo* might even have munched on hatchling or juvenile dinosaurs.

"*Beelzebufo* appears to be a very close relative of a group of South American frogs known as 'ceratophryines,' or 'pac-man' frogs, because of their immense mouths," said Krause. The ceratophryines are known to camouflage themselves in their surroundings, then ambush predators. "The finding presents a real puzzle biogeographically, particularly because of the poor fossil record of frogs on southern continents," said Stony Brook University paleontologist David Krause, who led the research. "We're asking ourselves, 'What's a 'South American' frog doing half-way around the world, in Madagascar?'" He said that because frogs "are not adept at dispersal across marine barriers, and since the few fossil frogs that are known from the Late Cretaceous in Africa are unrelated to *Beelzebufo*, one possibility is that there was a land connection between South America and Madagascar during that period."



ScienceDaily  
Your source for the latest research news  
<http://www.sciencedaily.com>

Some geoscientists have suggested a lingering physical link between South America and Madagascar during the Late Cretaceous Period -- a link involving Antarctica. Antarctica in the Late Cretaceous was much warmer than it is today. "The occurrence of this frog in Madagascar and its relatives' existence in South America provides strong evidence that the supercontinent Gondwana 'disassembled' during the latest part of the Cretaceous," said Richard Lane, program director in NSF's Division of Earth Sciences.

"Madagascar has a mainly endemic frog fauna whose history has generated intense debate, fuelled by recent phylogenetic studies and the near absence of a fossil record. Our discovery of a frog strikingly different from today's Madagascan frogs, and akin to the Horned toads

previously considered endemic to South America, lends weight to the controversial paleobiogeographical model suggesting that Madagascar, the Indian subcontinent and South America were linked well into the Late Cretaceous. It also suggests that the initial spread of such beasts began earlier than that proposed by recent estimates."

SOURCE: University College London (19 February 2008), Giant Frog Jumps Continents, May Have Eaten Baby Dinosaurs, ScienceDaily. Retrieved February 25, 2008, from [http://www.sciencedaily.com / releases/2008/02/080218172307.htm](http://www.sciencedaily.com/releases/2008/02/080218172307.htm)

PHOTO: Artist's impression of prehistoric giant frog, with a modern-day frog and pencil for comparison (Credit: Courtesy of Stony Brook University).

## Amphibian skin agent may battle multi-drug resistant bacteria

ScienceDaily (Jan. 23, 2008) — Researchers from Italy found that a naturally occurring agent in frog skin may inhibit multi-drug resistant bacterial strains associated with hospital-acquired infections. Resistance to current antibiotic therapies is on the rise in both hospital and community settings. With some bacterial strains now resistant to every available drug, a return to the preantibiotic era in regard to such infections is cause for great concern. Researchers have identified antimicrobial peptides (AMPs) as one of the most promising candidates for future therapeutic use and they have found amphibian skin to be one of the richest sources of such AMPs.

Nosocomial infections are linked to various drug-resistant bacterial strains and are commonly acquired in a hospital setting as a secondary illness. In the study researchers tested five AMPs (temporins A, B, and G, esculentin 1b, and bombinin H2) from three different frog and toad species (*Rana temporaria*, *Rana esculenta*, and *Bombina variegata*) for antibacterial activity against multi-drug resistant strains often associated with human nosocomial infections. Initial results showed that all the peptides acted as antibacterial agents against the species tested. Further studies found that the temporins were more active against gram-positive bacteria; esculentin 1b produced an antibacterial response within 2 to 20 minutes of exposure, and bombinin H2 displayed similar activity toward all bacterial isolates.

"This peptide is an attractive molecule for use in the development of new compounds for the treatment of infectious diseases," say the researchers.

REFERENCE: M.L. Mangoni, G. Maisetta, M.D. Luca, L.M.H. Gaddi, S. Esin, W. Florio, F.L. Brancatisano, D. Barra, M. Campa, G. Batoni. 2008. Comparative analysis of the bactericidal activities of amphibian peptide analogues against multi-drug-resistant nosocomial bacterial strains. *Antimicrobial Agents and Chemotherapy*, 52. 1: 85-91.

SOURCE: American Society for Microbiology (2008, January 23). Amphibian Skin Agent May Battle Multi-drug Resistant Bacteria. ScienceDaily. Retrieved February 12, 2008, from [http://www.sciencedaily.com /releases/2008/01/080122102502.htm](http://www.sciencedaily.com/releases/2008/01/080122102502.htm)

PHOTO: Common Frog, *Rana temporaria* (Credit: Image courtesy of Wikimedia Commons).



ScienceDaily  
Your source for the latest research news  
<http://www.sciencedaily.com>





# Amphibian news...

## **V-Frog' virtual-reality frog dissection software offers first true physical simulation**

ScienceDaily (Feb. 11, 2008) — V-Frog, the world's first virtual-reality-based frog dissection software designed for biology education -- allowing not mere observation, but physically simulated dissection -- has been developed and is being marketed by Tactus Technologies. A provider of virtual reality, visualization and simulation products and services, Tactus Technologies is a spin-off of the University at Buffalo Virtual Reality Laboratory. "Other products out there are multi-media, not true virtual reality," explains Kevin P. Chugh, Ph.D. '01, president and chief scientist at Tactus Technologies, based in Getzville, a northern suburb of Buffalo. V-Frog, which operates on a personal computer using a standard mouse, actually simulates nearly unlimited manipulation of specimen tissue. As a result, every dissection is different, reflecting each student's individual work. The software is designed for grades 7 through 12, plus advanced placement biology students. Using a simple mouse and PC, students can "pick up" a scalpel, cut open V-Frog's skin, and explore the internal organs -- with true real-time interaction and 3-D navigation that actually accommodates discovery and procedures not possible with a physical frog specimen. "You can go through the entire alimentary canal, using the endoscopic function -- something you could never do with a real frog," says Chugh. "Likewise, with our V-Frog, you can explore nerves and blood vessels, and look closely at how the brain is wired. Students would never get the opportunity to see and work with these things this way with a real frog."

Life-like V-Frog, which was in development for three years, uniquely allows for comparative anatomy, letting students make parallels and contrasts between the amphibian's physiology and that of a human being, crab and other organisms. In addition, V-Frog allows students to watch a beating heart, observe digestion, dissect, probe and perform endoscopic procedures. "With other products, it's just a video -- static and two-dimensional," Chugh explains. "This is a simulation product, not simply a static Web site. It's actually superior to physical specimens and multi-media representations. The technology allows for virtual surgery. Our tissue simulation lets students see the correlation between form and function, and can be manipulated however the student wishes. It's truly a physically simulated dissection."

The Humane Society of the United States, as well as educators, legislators, students and others, support the realization that the use of virtual-reality frog dissection means no exposure to chemicals and potentially dangerous instruments, no specimen or ecosystem harm and no specimen disintegration. "This is very much a sign of the times," declares Chugh, noting that at least 25 states have laws or ordinances mandating that, if dissection is part of a school's curriculum, students must have an alternative to dissection. "It's a mainstream reality."

Additionally, the use of V-Frog means students are not constrained to a lab environment. The state-of-the-art product complies with both inquiry and life science standards. Instructors can also model a dissection, observable by the entire class, using a projector. This teaching and

learning experience can be conveniently repeated as often as desired.

V-Frog passed an important milestone when California approved V-Frog for legal and social compliance as per their State board of Education guidelines. It is also in the final stages of a similar review in New York State. The Virginia State Department of Education recently featured V-Frog prominently at the Innovate 2007 conference held in Richmond, Virginia.

According to Chugh, V-Frog's simulated dissection is more economical than real dissection due to its one-time license cost versus annual replacement of real frogs, dissection supplies and chemicals.

Tactus Technologies received a Small Business development grant from the Institute of Educational Services, a division of the U.S. Dept. of Education, for the development of V-Frog, which has a patent pending. V-Frog is being sold directly to individual schools, under a one-time licensing fee. Home version of the software can be purchased at Amazon.com.

SOURCE: University at Buffalo (2008, February 11). 'V-Frog' Virtual-Reality Frog Dissection Software Offers First True Physical Simulation. ScienceDaily. Retrieved February 12, 2008, from <http://www.sciencedaily.com/releases/2008/02/080211215636.htm>

PHOTO: V-Frog, the first virtual-reality-based frog dissection software, allows biology students to perform dissections on their computers (Credit: Image courtesy of University at Buffalo).

## **Bashed frog victim of mistaken identity**

WILDLIFE experts are trying to save a green tree frog almost kicked to death by children who thought it was a cane toad. The creature was yesterday handed in to the Gold Coast's Currumbin Wildlife Sanctuary suffering horrific injuries. Senior veterinarian Michael Pyne said some children apparently mistook the frog, nicknamed Puffy by sanctuary staff, for a cane toad and tried to kill it. "There was some children kicking what they thought was a toad in their backyard. The neighbour saw it and saw that it was a green tree frog, and they rushed over and grabbed the frog and brought it in to us."

Dr Pyne, who said Puffy was not likely to survive, urged people not to bash any amphibian, even if they suspected it was a cane toad. "This poor frog is in a desperate state, we're going to need a lot of luck for him to pull through," he said. "He's basically ruptured his lungs and he's filling up with air, and he's heavily bruised, so we're going to be doing a few procedures on him later today." Cane toads should be killed humanely, Dr Pyne said. "You shouldn't be kicking toads to death anyway, it's far better to catch them up and pop them in the freezer."

AUTHOR: Drew Cratchley 8 February 2008.

SOURCE: AAP, <http://www.news.com.au>

PHOTO: Unlikely to survive ... the frog has been named "Puffy" (AAP).



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



# Island nights...

For those of you that missed the March meeting, held at Yungaburra, Alastair Freeman from the Environmental Protection Agency (Queensland Parks & Wildlife) gave a wonderful presentation on monitoring sea turtles on Milman Island on the northern outer Great Barrier Reef. Here turtle monitoring is linked to the broader issues of marine turtle conservation. Here are a few notes taken from the night...

Milman Island is a densely vegetated sand cay surrounded by reef. Two species of marine turtle make use of the island as nesting places, what we call turtle rookeries. The Hawkesbill Turtle (*Eretmochelys imbricata*) breeds in high densities on the island, with egg deposition occurring mostly in November through February. Australia supports the largest breeding population of this species. Although the Hawkesbill Turtle is the main focus of research on Milman Island, the other species that occurs there is the Green Turtle (*Chelonia mydas*). This second species deposits eggs from October through February, and is genetically distinct from the same species that occur at the southern Great Barrier Reef. From a management perspective, this is important, with a possible third population occurring in the Gulf.

There has been a decline in nesting over the past ten years in the Hawkesbill Turtle, and baseline data is required to determine if the trend is continuing. The research team walks the beach at night looking for tracks in the sand and nesting turtles. They record details of the nesting habitat, check the flippers for tags, take curved carapace (upper shell) measurements, record barnacles and carapace damage, and record egg data like clutch size, measurements, and weight, before reburying them. Some specimens are subjected to the laparoscopy to examine the reproductive status of the female. This is an important tool and can provide researchers with information like first time breeders. Nests that hatch during the day are predated upon by sea birds like gulls and terns, with odds of survival by the young estimated at 1 in 1000. Unhatched eggs are also recorded. Monitoring has concluded a decline in nesting attempts and success. Natural hazards for turtles include crocodiles, dingoes, goannas, and sea birds. Unnatural hazards, however, are more of a concern. Traditional owners utilise turtles as food, with hunting pressure increasing and no longer being sustainable. There are other reasons that contribute to this as seen below. In some areas turtles are hunted as ornamentals. They become entangled in nets, from pots to ghost nets. Ghost nets drift through the ocean and can be up to 6 tonne and 19km long. Boat strike occurs in high use areas. Disease, like fibro papilloma, or pollution related ailments contribute to the health of a population. Pig predation is a serious concern to eggs and hatchlings alike, as pigs can dig up and devour an entire nest in one sitting. Climate change can affect turtles through waves eroding nests, and temperature change affecting the sex of the developing young, or being lethal to eggs.

This is all sad news for the future of our marine turtles, so what is being done other than monitoring. Alastair enlightened us on this. The EPA is working with Cape York traditional owners to reduce hunting pressure. Traditional owners are encouraged to become involved with research. Hunting, however, is insignificant in the big picture, but it is still worth trying to reduce as much pressure as possible. Traditional owners and the EPA have formed a partnership to control pigs. Prior to control the EPA recorded 100%

predation rate, compared with a 97% survival rate after control. They try to manage nesting turtles in urban areas, like The Strand in Townsville. They give expert advice on planning applications, especially in sea grass areas. The EPA provides education opportunities. This is successful as turtles are endearing animals from a public perspective. Education targets boat strikes, lighting in nesting areas, and problem animals such as dogs, dingoes and pigs.

Satellite technology has been employed to track turtles. They are protected in Australia, however when they cross into international waters they lose that protection status. An example of the problem in international water includes the turtle meat trade in PNG. As the old turtles die out there appears to be a lack of juvenile recruitment. All of a sudden, maybe in ten, twenty or fifty years, when the old ones die, will there be enough survivors to make a genetically viable breeding population... time will reveal all, but more importantly it is up to us to ensure they are on this planet for another 250 million years.

GUEST SPEAKER: Alastair Freeman.  
AUTHOR: Darren Green.  
TURTLE IMAGE; EPA Website.



Alastair Freeman with newly elected TFC President Michael Anthony.



## Queensland's iconic Walsh & Mitchell Rivers need your help

The mighty Mitchell River in Queensland's northern Gulf region is one of Australia's largest and most impressive rivers. It is also threatened by plans to build the large and expensive Nullinga Dam on one of its most significant tributaries, the Walsh River.

A Community Action Kit is available from the Wilderness Society. The kit provides background information, alternative solutions and outlines some simple and easy things that you can do to help protect the Walsh River from being dammed.

Thank you for taking the time to help protect the Walsh River from being dammed. Your action will make a difference!

Di Horsburgh  
FNQ WildCountry Community Campaigner  
The Wilderness Society (Queensland) Inc  
Upstirs, 125 Abbott Street PO Box 7748  
Cairns Qld 4870  
Phone (07) 40416666; Fax (07) 40416677  
<http://www.capeyork.wilderness.org.au>  
<http://www.wilderness.org.au>



**THE WILDERNESS SOCIETY**  
Protecting, Promoting, Restoring Wilderness



# Amphibian fossils...

## **Jeholotriton paradoxus (Amphibia: Caudata) from the Lower Cretaceous of southeastern Inner Mongolia, China**

AUTHOR: Yuan Wang and Christopher S. Rose, Journal of Vertebrate Paleontology, 2005, 25(3):523-532

ABSTRACT: A fossil salamander is described based on specimens from a Lower Cretaceous deposit near Ningcheng, Inner Mongolia, China. Recently reported as *Jeholotriton paradoxus*, this form represents a neotenic salamander as indicated by larval features such as external gills, tooth-bearing coronoids, pterygoids with anteromedially oriented anterior processes, and underdeveloped maxillae, in combination with adult features such as extensive medial contact of the nasals and posteriorly directed tooth rows in the palate. This taxon is distinguished from other Mesozoic salamanders by having 15–16 presacrals, proximally expanded uncapitate ribs, vomers with large tooth patches anteriorly and longitudinal dentigerous bars posteriorly, large nasals with no anterior notch, frontals with no anterolateral extension, premaxillae with distinct alary processes, short transverse processes on the vertebrae, and phalangeal formulae of 2-2-3-2 for the manus and 2-2-3-3-2 for the pes. Including *Laccotriton*, *Liaoxitriton*, *Sinerpeton* and *Chunerpeton*, five taxa of Mesozoic salamander have now been found in China. *Jeholotriton* has especially well-preserved impressions of articulated skeletons, a type of preservation that is uncommon in Mesozoic strata throughout the world and provides important anatomical details of this early salamander. The great diversity of fossil salamanders from the late Mesozoic of northeastern China implies that East Asia was an important center for the early evolution of urodeles.

## **Bufoiid toads from the late Oligocene beds of Salla, Bolivia**

AUTHOR: Ana Maria Baez and Laura Nicoli, Journal of Vertebrate Paleontology, 2004, 24(1):73–79

ABSTRACT: Isolated fragmentary anuran remains from several fossil-bearing levels of the continental succession exposed in the Salla-Luribay basin, Eastern Cordillera, are described herein. The anuran material consists of poorly preserved postcranial bones that are referable to toads of the nearly cosmopolitan genus *Bufo*, now widely distributed in South America. Moreover, these remains strikingly resemble skeletal elements of extant South American species of the *B. marinus* group, most of which inhabit humid to semiarid lowlands. Based on the ilial morphology, two species appear to be represented in the Salla Beds: one close to *B. arenarum* and another, possibly new, that attained large size. This study does not confirm an earlier suggestion that a taxon closely related to the living South American aquatic leptodactylid *Caudiverbera* is represented in the Salla succession. This record supports an Early Tertiary, or even older, major diversification of bufoinids.

## **A Field Guide to the Amphibians & Reptiles of Madagascar**

### **Madagascar**

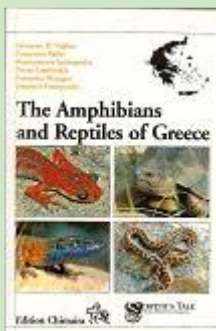
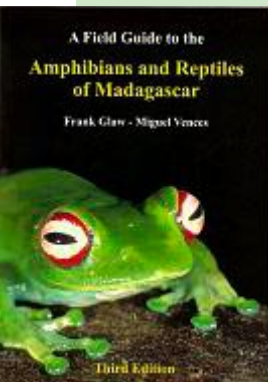
Third, completely revised edition. Includes the biology and description of all Malagasy amphibians and reptiles, distribution maps and lists of localities. Featuring over 700 species and including over 1500 colour photos.

AVAILABLE: <http://www.mikeswanherpbooks.com.au>

### **The Amphibians & Reptiles of Greece**

It is the long-term experience and knowledge of the six authors of this book which makes it a valuable contribution to Greek herpetology. Due to the same scheme with which the information per species is arranged, the reader can easily orientate himself. Apart from the specific information on any amphibian and reptile species occurring in Greece, the book also offers a very valuable introductory account on the natural landscapes, habitats, biogeography and conservation.

AVAILABLE: <http://www.mikeswanherpbooks.com.au>



## **Variation in the ilium of North American Bufo (Lissamphibia; Anura) and its implications for species-level identification of fragmentary anuran fossils**

AUTHOR: Gabe S. Bever, Journal of Vertebrate Paleontology, 2005, 25(3):548-560

ABSTRACT: The ilium is widely considered to be the single best element upon which to base the identification of fossil anurans when isolated bones are all that are available. I tested the diagnostic utility of continuous and discrete ilial characters for toads of the genus *Bufo* by evaluating their distribution among an expanded taxonomic sample of 27 extant North American species. Support for species-level identifications and for the identification of traditionally recognized species groups based on ilial characters alone was assessed. Results indicate that no distinctive morphologies in the ilium of extant North American *Bufo* are known that permit a species-level identification or the diagnosis of any traditionally recognized species group. Two of the ten included extinct species, *B. holmani* and *B. kuhrei*, do contain ilial characters that fall outside the observed range of the examined extant species. The fact that both morphometric and discrete characters fail to support species-level identification of isolated ilia of extant *Bufo* indicates that identifications should be restricted to higher taxonomic levels until new ilial characters are established. Potentially informative characters should be tested against a comparative sample that reflects clade diversity rather than one that reflects our geographic and/or temporal assumptions. This approach helps to avoid circularity if the identifications are used subsequently in analyses of faunal dynamics.

## **A new pipoid Anuran from the Late Cretaceous of South Africa**

AUTHOR: Linda Trueb, Callum F. Ross, and Roger Smith, Journal of Vertebrate Paleontology, 2005, 25(3):533-547

ABSTRACT: Numerous fossil pipoid frogs recovered from Late Cretaceous deposits of a closed crater-lake of Late Cretaceous age in the Marydale District of South Africa are described and referred to a new genus and species of pipoid anuran. The fossils include larvae and adult frogs that are thought to have been killed en masse following breakdown of the thermal stratification or possibly by CO<sub>2</sub> degassing from the underlying magma. A cladistic analysis of fossil and extant pipoid frogs based on 49 osteological characters reveals the new taxon to be a member of the pipinormorph clade, which includes the Late Cretaceous *Eoxenopoides reuningi* also from South Africa, fossil and Recent hymenochirines from Africa, and living *Pipa* from South America. The new taxon is distinctly larger than *Eoxenopoides* and further differs from this contemporaneous taxon in having an antorbital process on the maxilla and seven presacral vertebrae, with the first presacral being formed by fusion of Presacrals I and II. The curved shape of the ventral part of the braincase distinguishes this frog from hymenochirines, *Palaeobatrachus*, and *Eoxenopoides*. The new anuran is distinguished from the Israeli fossil *Thoraciliacus* of about the same age by the possession of a conch-shaped tympanosquamosal bone, a short jaw, and fusion of the sacrum and urostyle.

## **MEETINGS**

### **See page 14 for details**





# Amphibian fossils...

## **Plemmyradytes shintoni, gen. Et sp. Nov., An early permian amphibamid (temnospondyli: dissorophoidea) from the Eskridge formation, nebraska**

AUTHOR: Adam K. Huttenlocker, Jason D. Pardo, and Bryan J. Small, Journal of Vertebrate Paleontology, 2007, 27(1):316–328

ABSTRACT: The fossil vertebrate localities near Humboldt, Richardson County, Nebraska, have produced a diverse assemblage of amphibians from near the Permo-Carboniferous (C-P) boundary, including at least one species of dissorophoid (described here), a trimerorhachid, juvenile and adult specimens of the dvinosaur *Acroplopus vorax*, gymnarthrid microsauro material, numerous skeletons, skulls, and isolated vertebrae assignable to two species of the lysorophian *Brachydictes*, and diadectid teeth. A new genus and species of amphibamid dissorophoid, *Plemmyradytes shintoni*, is described from the lower half of the Permian-aged Eskridge Formation (early Asselian) near Humboldt. *P. shintoni* is only the second amphibamid species described from the Permo-Carboniferous midcontinent sequence in the Kansas-Nebraska region. Among amphibamids, it is set apart by the following suite of characters: (1) reduction of the lateral exposure of the palatine, (2) a long, narrow supratemporal (at least twice as long as broad) roofing the otic notch, (3) a posteriorly elongated squamosal, (4) long anterior maxillary teeth, decreasing in size posteriorly, (5) a shallow dentary with a long lateral dentary trough, and (6) dentary teeth that are slightly smaller than the maxillary teeth (approximately one-half to two-thirds as long). A cladistic analysis of 67 dissorophoid characters from 17 taxa supports a clade uniting *P. shintoni* with 'Tersomius' sp. and *Micropholis stowi* within a monophyletic Amphibamidae. The demonstration of evolutionary trends within the family based on the new data allows a comparison of competing phylogenetic hypotheses.

## **A complete Trematosaurid amphibian from the middle Triassic of Germany**

AUTHOR: Rainer R. Schoch, Journal of Vertebrate Paleontology, 2006, 26(1):29-43

ABSTRACT: Recent finds of small temnospondyls from the Lower Keuper (Ladinian, Middle Triassic) of southern Germany are referred to a new trematosaurid genus and species, *Trematolestes hagdorni*. It is the first trematosaurid represented by a nearly complete skeleton. *Trematolestes* is characterized by an unpaired frontal and a minute lacrimal at the orbital rim wedged in between an extensive prefrontal and a wide maxilla. Further characteristic are keeled, laterally compressed palatal tusks, a strong palatine and ectopterygoid dentition, and minute maxillary and posterior dentary teeth. In the visceral skeleton, ceratobranchial parts of the hyobranchial skeleton and an unpaired basibranchial element are ossified. The ribs bear pronounced spine-like uncinat processes throughout the trunk and anterior tail skeleton. The forelimb is minute, with a strongly abbreviated humerus not exceeding the length of the lower arm, rudimentary radius and ulna, and a small, probably four-fingered hand skeleton. Unlike the situation in capitosauroids, the trunk was deep with an elongated recurved ilium and a highly modified sacral rib. The trunk is composed of 22 vertebrae, while the caudal vertebral count is at least 24, but probably exceeded 30. Phylogenetic analysis suggests that *Trematolestes* is closely related to the Madagascan genus *Tertremoides* and together they are nested with the rostrumbearing slender-headed lonchorhynchines.

## **The earliest tupilakosaurid amphibian with diplospondylous vertebrae from the late Permian of southern France**

AUTHOR: Ralf Werneburg, J. Sébastien Steyer, Georg Sommer, Georges Gand, Jörg W. Schneider and Monique Vianey-Liaud, Journal of Vertebrate Paleontology, 2007, 27(1):26-30

ABSTRACT: A well-preserved vertebral column from the Late Permian of Southern France (Lopingian, La Lieude Formation, Lodève Basin) is described. It is composed of diplospondylous vertebrae and is most comparable with the temnospondyl *Tupilakosaurus* previously known from the Early Triassic of Greenland and Russia. This new specimen therefore represents the earliest occurrence of a diplospondylous tupilakosaur, and extends the geographic range of the group to Western Europe. It is an aquatic temnospondyl that used the anguilliform undulatory mode of swimming.

## **Revision of the early Cretaceous Cordicephalus from Israel and an assessment of its relationships among Pipoid frogs**

AUTHOR: Linda Trueb and Ana María Báez, Journal of Vertebrate Paleontology, 2006, 26(1):44-59

ABSTRACT: Because many fossil pipoid anurans have been described during the past 35 years from Cretaceous deposits in South America and Africa, it is appropriate to revisit some of the earlier ones to have been discovered, viz., *Cordicephalus gracilis*, *C. longicostatus*, and *Thoraciliacus rostriceps* from Israel. Careful examination of *Cordicephalus*, based on study of previously, as well as newly, prepared specimens, reveals the existence of only one species. *Cordicephalus gracilis* is redescribed and compared with *Thoraciliacus*, and the phylogenetic relationships of these genera to other living and fossil pipoid frogs are investigated in a parsimony analysis. *Thoraciliacus* is basal to a clade containing *Cordicephalus*, *Palaeobatrachus*, and all other living and fossil pipids; however, the placement of *Cordicephalus* with respect to *Palaeobatrachus* and *Pipidae* is unresolved. Both *Thoraciliacus* and *Cordicephalus* retain the primitive state for several pipoid synapomorphies involving the condition of the vomers, parasphenoid, and presence of a tympanosquamosal bone. In contrast to *Thoraciliacus*, however, *Cordicephalus* is characterized by several derived characters including possession of an otic capsule modified to accommodate a Eustachian tube and depressed, fully ossified opisthocoelel vertebrae. Despite their lack of many pipid specializations, both *Thoraciliacus* and *Cordicephalus* seem to possess many morphological features that typically are associated with aquatic habits. Among these are possession of a flat skull with a short rostrum, short axial column, and relatively long metapodials.

## **The amphibamid Micropholis from the Lystrosaurus assemblage zone of South Africa**

AUTHOR: Rainer R. Schoch and Bruce S. Rubidge, Journal of Vertebrate Paleontology, 2005, 25(3):502-522

ABSTRACT: The small temnospondyl *Micropholis stowi* from the Lower Triassic *Lystrosaurus* Assemblage Zone (Karoo Basin, South Africa) is redescribed on the basis of a larger sample of specimens, revealing a range of previously unknown anatomical features. *Micropholis* is recognized as a member of the Amphibamidae, representing both the last occurrence and the only Gondwanan member of this clade. (1) The largest specimens have an elongated narrow snout, larger otic notches, prominent quadrate processes, and wide cheeks giving the skull a marked lateral curvature. (2) Palpebral ossifications include a fabric of numerous polygonal ossicles contouring the size and position of the eyeballs. (3) The palate houses large fangs with inwardly curving crowns, an elaborate basicranial region resembling closely that of *Amphibamus* and *Doleserpeton*, and an extremely reduced rod-like palatine and ectopterygoid approaching the derived condition seen in other amphibamids. (4) In the postcranial skeleton, the greatly extended transverse processes, the morphology of the interclavicle and scapulocoracoid, and the structure of the pelvis and tail are characteristic features of *Micropholis* some of which are quite similar to the condition in *Eoscopus* and *Platyrhinops*. It is evident that two morphs of *Micropholis*, which differ in skull width and palatal dentition, are present in the Karoo Basin. Phylogenetic analysis suggests *Micropholis* to be nested within the amphibamid dissorophoids as the basal-most taxon. Within the Amphibamidae, *Doleserpeton* and *Amphibamus* are sister groups, nested with successive sister taxa *Platyrhinops* and *Eoscopus*. In particular, the miniaturized genera *Doleserpeton* and *Amphibamus* share a range of derived character-states with *Micropholis*, but the latter lacks the pedicellate dentition and has a more plesiomorphic posterior skull table and parasphenoid, suggesting that some of the shared derived states may have been acquired independently during the long isolated evolution of the *Micropholis* lineage in the Southern Hemisphere. In the present analysis, *Micromelerpeton* is the most basal offshoot of the dissorophoids, followed by a grade towards amphibamids formed by the following successive sister groups (from the base crownwards): (1) the trematopids, (2) *Ecolsonia*, and (3) the Dissorophidae, the latter being the sister taxon of all analyzed amphibamids.

# Froggy jokes

A man was crossing a road one day when a frog called out to him and said, "If you kiss me, I'll turn into a beautiful princess." He bent over, picked up the frog, and put it in his pocket. The frog spoke up again and said, "If you kiss me and turn me back into a beautiful princess, I will tell everyone how smart and brave you are and how you are my hero." The man took the frog out of his pocket, smiled at it, and returned it to his pocket. The frog spoke up again and said, "If you kiss me and turn me back into a beautiful princess, I will be your loving companion for an entire week." The man took the frog out of his pocket, smiled at it, and returned it to his pocket. The frog then cried out, "If you kiss me and turn me back into a princess, I'll stay with you for a year and do ANYTHING you want." Again the man took the frog out, smiled at it, and put it back into his pocket. Finally, the frog asked, "What is the matter? I've told you I'm a beautiful princess, that I'll stay with you for a year and do anything you want. Why won't you kiss me?" The man said, "Look, I'm a computer programmer. I don't have time for a girlfriend, but a talking frog is cool."

One day a man walks into a doctor's office with a frog on his head. The doctor in amazement jumps up and says "Good grief, how on earth did you get that great ugly thing!" The frog looks down and replies "I dunno Doc, it started out as a little wart on my bottom!"

A scientist was interested in studying how far bullfrogs can jump. He brought a bullfrog into his laboratory, set it down, and commanded, "Jump, frog, jump!" The frog jumped across the room. The scientist measured the distance, then noted in his journal, "Frog with four legs - jumped eight feet." Then he cut the frog's front legs off. Again he ordered, "Jump, frog, jump!" The frog struggled a moment, then jumped a few feet. After measuring the distance, the scientist noted in his journal, "Frog with two legs - jumped three feet." Next, the scientist cut off the frog's back legs. Once more, he shouted, "Jump, frog, jump!" The frog just lay there. "Jump, frog, jump!" the scientist repeated. Nothing. The scientist noted in his journal, "Frog with no legs - lost its hearing."

Q. How come the frog didn't get to be the Easter Bunny?  
A. Slippery hands...they were afraid he'd drop the eggs!

Q. Why did the frog make so many mistakes?  
A. It jumped to the wrong conclusions.

Q. What do frogs play at recess?  
A. Jumping jacks and leapfrog.

SOURCE: Various websites.

# 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).

MS MANDY LINDSAY	ATHERTON
BEVAN PRITCHARD	ATHERTON
KEITH MCDONALD	ATHERTON
WAI AWARAU	ATHERTON
DR AMBER GILLET	BEERWAH
DR STACEY GELIS	BEERWAH
ROBYN KING	BROADBEACH
BONNIE ARBON	CABOOLTURE
DOMINIC CHAPLIN	CAIRNS
JUDY CATCHPOLE	CHAMBERS FLAT
KEITH MARTIN	CLIFTON BEACH
CINDY HARKNESS	EDGE HILL
JO LOADER	GLASSHOUSE MOUNTAINS
KIA BAILEY	GLASSHOUSE MOUNTAINS
GRANT TURNER	INNISFAIL
VAL SPEEDIE	INNOT HOT SPRINGS
KENT JOZEFOWSKI	KALLANGUR
MURRAY WELLINGTON	KURANDA
ROSY MACCARONE	KURANDA
CLARISSA MORRIS	LANDSBOROUGH
SUE MORRIS	LANDSBOROUGH
JAMES & MARGARET SWEETZER	MALANDA
MERV ROBSON	MALANDA
JOHN BOOY	MALANDA
INGA LORENZ	MALANDA

HOWARD & AGGIE SMITH	MALANDA
BERYL DAVIDSON	MALANDA
MARNEY FICHERA	MOOROBOOL
MICHAEL & SHARON WILLIAMS	NEWPORT VIC
VAL BONNER-BURROWS	OXLEY
CHERYL LAMMERETZ	PEACHESTER
IAN WILESMITH	REDBANK PLAINS
ANDREA JAMES	REDLYNCH
TRICIA SCHILLING	REESVILLE
WENDY & PHILLIP GRIMM	ST IVES NSW
DARREN & JO GREEN	TRINITY BEACH
MICHAEL ANTHONY	WHITFIELD
SHAUN COOK	WHITFIELD
MARIA DESTRO	WHITFIELD
ELEANOR DUIGNAN	WHITFIELD
DR CHE PHILLIPS	YARA GLEN
MURRAY POWDRELL	YORKEYS KNOB
ALAN GILLANDERS	YUNGABURRA
NEVILLE SIMPSON	YUNGABURRA
CLAUDINE GRANDJEAN	YUNGABURRA
SIAN MOORE & SCOTT RADCLIFFE	YUNGABURRA
CHRIS TSILEMANIS	YUNGABURRA
LIZ LIONEL & SANDY CARROLL	YUNGABURRA
GARRIE DOUGLAS/LEE CURTIS	YUNGABURRA

## Meetings 2008 - 2009

**Friday 6th June** 7.00 pm Yungaburra CWA Hall  
– members night – bring along photos, slides, cds, dvds, audio of frogs or other wildlife for an “id fest”

**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 24th 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 24th 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)

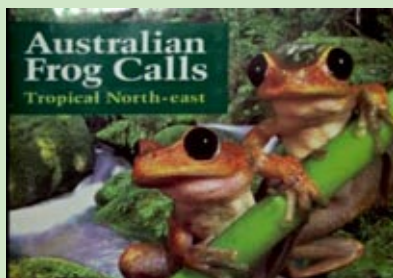
**Saturday tba February 2009**

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

## 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:  Cash,  Money Order,  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**  
**April 2008**

Sender...

**Tablelands Frog Club**  
**Mail Bag 71**  
**YUNGABURRA QLD 4879**

POSTAGE  
PAID  
AUSTRALIA

Please deliver to...

**The  
Croaker!**



**Read it!  
Read it!**

**<http://www.tablelandfrogclub.com>**