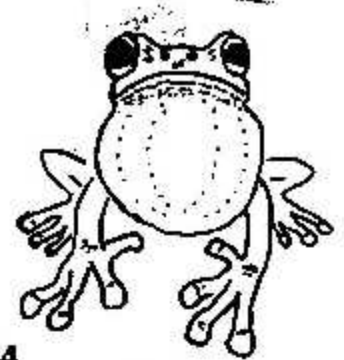


FROG CALL !

Newsletter No. 4 of the
FROG & TADPOLE STUDY GROUP : a special interests
 group of the **AUSTRALIAN HERPETOLOGICAL SOCIETY INC.**
 mail contact: Harald Ehmann, Biological Sciences,
 Sydney Institute of Technology,
 1 Mary Ann Street, Ultimo 2007



Telephone enquires: Harald Ehmann (02)2173290 FAX:(02)2174034
 David Millar & Martyn Robinson (02)3398226

THE NEXT MEETING will be a Workshop special on Saturday 17 October, 1992, at the Australian Reptile Park. The proposed outline is on the back of this page. The Workshop format is a wonderful opportunity to bring together people from three interest groups - it will be a full day and evening about frogs, frogs and more frogs!

We do need some good rainmakers to ensure a productive evenings field work!

THE LAST MEETINGS REPORT has been prepared by Steve Kum Jew and it is enclosed/attached.

COVERING COSTS: The group covers some costs through donations by participants at meetings. To cover postage costs to non-attending participants it will be necessary for them to send postage stamps (8@ 45¢) with the form below. If stamps are not received from non-attending participants then they will not receive mailouts.

Regards,

Harald E 24.9.92

Harald Ehmann
Convener

✕ -----

**Attach
 stamps
 here**

Name: _____

Address: _____

Phone number(s): _____

Particular/specific Interests: _____

FROG AND TADPOLE STUDY WORKSHOP

arranged for three interest groups:
TAFE HERPETOLOGICAL TECHNIQUES COURSE STUDENTS,
TAXON ADVISORY GROUP (AMPHIBIA),
AND FROG AND TADPOLE STUDY GROUP

Proposed outline (additions/modifications expected):

Date: 17th October, 1992

Venue: Australian Reptile Park, Gosford, New South Wales.

9.00am **Opening:** Hal Cogger

9.15am **Session 1:** Husbandry and Captive Care.

Chair person: William Melke

Presentations: Jan Nedved: European experiences
Harald Ehmann: Australian experiences
Chris Banks/Jon Birkett: Melbourne zoo experiences.
Others? (nominations please).

10.45am Morning refreshments

11.15am Open Workshop/

Round Table 1: Husbandry and Captive Care.

Participants invited to discuss their experiences, problems, solutions with husbandry and captive care of tadpoles and frogs. Possible case studies.

12.45pm Lunch break Display of books, equipment, recordings etc.

1.45pm **Session 2:** Field study/research techniques.

Chair person: Michael Mahony

Presentations: Arthur White: Frog diets.
Michael Mahony: Recording calls, biochemical identification.
Harald Ehmann: Field techniques overview.
Gunter Schmid: Photography (unconfirmed).
Others? (nominations please).

3.15pm Afternoon refreshments

3.45pm Open Workshop/

Round Table 2: Field study/research techniques.

Participants invited to discuss their experiences, problems, solutions with field study/research. Possible case studies.

5.15pm Outline evening session
program: Closing remarks for Sessions 1 & 2.

5.30pm Dinner break

7.00pm **Session 3:** Field work in Gosford, Ourimbah area. Locations and activities are weather dependant therefore these will be finalised on the day. Ideally we will visit a selection of breeding pond/areas (3 or 4) in small groups (of at most 8 people) on a rotating basis (for 45-60 minutes per pond/area). Each pond/area will have a 'resident' guide who will conduct each group's visit of 45-60 minutes.

10.30pm End of Workshop Fieldwork.

Workshop plan has input from Chris Banks, William Melke and John Weigel.
Version 14.10.92

Herald Ehmann
Biological Sciences, Sydney Institute of Technology
1 Mary Ann Street, Ultimo NSW 2007

Phone: (02) 217 3290

Fax: (02) 217 4034

FROG & TADPOLE STUDY GROUP

Meeting 24 August 1992

Present: 20 participants - see contact list.
MARK WILSON chaired meeting

General Business

- HARALD EHMANN: information on -
 - Decline in Amphibian Populations Task Force
 - Froglog
 - Taxon, advisory group
 - Tylers action plan for conservation of endangered frogs in Australia.
 - Bulk discounts on books.
- PETER JONES - supply of crickets in South Australia 5c each plus \$6 per padded post bag.
- TANDACTYLUS EUNGELLENSIS - 1 ♀ specimen found in Queensland in creek adjacent to previously known range.

Presentation on the Red Crowned Toadlet - by KAREN THOMM & JACQUI RECSEI.

P. australis - Found on Hawkesbury sandstone

General description - 24mm, orange head, sturdy stout frog, black and white. Ventral markings, no webbing. White patches on toes-lack of pigment. Walks not hops. Nests in moist soil in burrows, seepages or soaks, near creeks. Eggs laid on soil. Heavy rain washes tadpoles/eggs into pond. Will burrow away from you when you try to dig them up. Eats termites, ants, mites - gut identification from 2-3 specimens.

Why study them?

- limited distribution
- specialised breeding biology - species could be vulnerable.
- 3 breeding colonies on fire track near home at Hornsby Heights.

Distribution

- Hawkesbury sandstone mostly - conclusion derived from museum specimens, literature, NPWS, communication, and area subsequently mapped out.
- Core distribution area bounded by
 - N.Morrisset/Catherine Hill Bay
 - E.Mt Victoria/Leura
 - S.Moss Vale/Burrawang
 - Other locations that are questionable:-
 - Wombeyan caves
 - Smiths Lake
 - Texas, QLD
 - Armidale - Point lookout.

Geology

- Sydney sandstones composed of 3 Triassic sandstones:-
 - Wianamatta Group
 - Hawkesbury group
 - Narrabeen group

2/3rds of specimens found on Hawkesbury sandstone type.

1/3rd of specimen did not fit in - water trapped by shale layers between any sandstone layer and subsequent seepage a favoured toadlet habitat. Presence of shade a decisive factor.

20% of locations gone due to housing - this includes shale layers but does not mean 20% of habitat gone. Distribution used to be a 150 Km radius from Sydney i.e. 30,000 - 100,000 Km². Karen believes core distribution area now 18,000 Km².

Run off from houses is high in nutrients, high volume, high pH 7-10 and encourages weed infestation, particularly in the Wianamatta shale layer.

Hornsby and some other councils have escarpment protection which means no introduced animals/houses but Waterboard, Electricity Commission have unrestricted use.

Not enough locations checked for survival rates after human disturbance.

Shale indicator plants - Hakea teretifolia)
- Darwinia diflora) possible
- Agonia parviflora) froglet habitats

Breeding biology - ♂♂ call, ♀♀ chose mate ♀♀ may lay eggs over several nights, may choose several ♂♂ over several nights. 20 eggs in moist nest. 26 day incubation. Hatch when burrow flooded by rain. Tadpoles very advanced when hatched. 28 - 40 days to metamorphosis. Leave water while tail reasonably long. 3 inch deep x 1 metre wide puddles suitable for tadpoles. Tadpole mortality is unknown. Possibly breed several times/year but when? Literature conflicting. Tadpoles found in April so may breed in winter. If conditions are right possibly will breed anytime but peak period December → April (coincident with rain).

Conclusions and questions raised from this study

- . Distribution - smaller area than quoted in literature
- . Housing is rapidly decreasing suitable habitat.
- . They may/may not be endangered.
- . A lot assumed - inferred from related species.
- . Which sex digs burrow?

How often mate?

How often gravid?

How long between egg laying?

Pair bonding?

How large breeding congregation?

Flooding of nest - how eggs affected?

Time to sexual maturity?

Courtship?

How many different calls?

When call?

call induction?

Defence mechanisms ?

pH water analysis?

Why tadpoles need aeration?

Discussion at end of talk

- 1) 18,000 Km² area distribution excludes 25 Km² centre of Sydney (THUMM/RECSEI).
- 2) There are a lot of colour variations in population - needs further work (THUMM/RECSEI).
- 3) Froglet localities shaded areas in open forest. Not in tall closed forest (THUMM/RECSEI).
- 4) Generally tadpoles affect pH of water (able to maintain pH at 4.5 - 6.9) even with frequent water changes O₂ levels on bottom of pools close to saturation due to large surface area and low volume. Tadpoles may be found at BOD levels from 1 (drinkable H₂O) to 34 (very polluted), but mostly 10+ (EHMANN).
- 5) Froglet tadpoles not found in weed infested creeks nor where Crinia signifera live (THUMM/RECSEI).

Michael Mahony wants to hear from field workers who find Gambusia at frog breeding sites. In particular note the calling, breeding frog species.

Karen Thumm & Jacqui Rees raise these issues for our attention:

The following matters need clarification by further field observation or research, before we make a decision about the vulnerability of the species:

Breeding Biology

1. Which adult/s prepare the nest? Which adult/s can be found in the nest prior to egg-laying?
2. How soon after a nest has been emptied of its eggs by a rain downpour will a P. australis male return to the nest site?
3. How frequently do P. australis mate? How long does a female P. australis need to produce new eggs after spawning?
4. How long do P. australis stay in the nest after egg-laying? Male and/or female?
5. Is there pair bonding?
6. As the P. australis male continues to call next to the nest, is his presence a sign of parental care or rather readiness to mate if another female approaches?
7. How large is a typical breeding congregation of P. australis?
8. How long do P. australis need to reach sexual maturity?
9. What happens to immature eggs if prematurely flooded and how do short dampening rainfalls affect eggs which are ready to hatch?

Call

1. Is there a courtship trill?
2. How many different types of P. australis calls are there?
3. When do P. australis call?
4. Do "short, explosive sounds" start P. australis calling?

Behaviour

1. Do P. australis have a defence stance?

Habitat

1. What is the soil and water P.H. in P. australis sites?
2. Why should P. australis tadpoles need aeration? cf. ~~55~~ Jacobsen