Appendix 4 : Scientific Meeting Abstract, Award and Related Publication.

<u>4.1</u> Polymerase Chain Reaction (PCR) Optimization for Mitochondria Cyt-b and D-loop Gene Fragment of Malaysian Slow Loris ((*Nycticebus coucang coucang*).

POLYMERASE CHAIN REACTION (PCR)
OPTIMIZATION FOR CYT-B GENE
FRAGMENT OF MALAYSIAN SLOW LORIS
(Nycticebus coucang coucang)

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1 Institute of Biological Sciences (Lorisidae Primate Research Group) — Faculty of Sciences University of Malaya, Kuala Lumpur

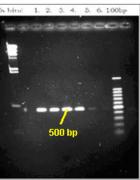
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3 Jabatan PERHILITAN, Cheras Kuala Lumpur

At present, little work has been done on the molecular systematics of the Loridae. Therefore, very limited inferences can be made on the basis of molecular data of the Malaysian Slow Loris. The mitochondiral cytochrome b (cyt-b) gene is widely used in systematic studies to resolve divergences at many taxonomic levels. The present preliminary study focuses mainly on identifying the best amplification conditions for cyt-b gene fragment of Slow loris (Nycticebus coucang coucang) as a molecular marker for future phylogenetic relationship studies of this prosimian species in Peninsular Malaysia, DNA was extracted from a total of six individuals captivity in the Malacca Zoo.

Polymerase chain reaction (PCR) was used to amplify the complete sequence of the cyt-b mitochondrial gene, PCR reactions were carried out in 50 µl reaction containing 1.0 µl dNTP (1 mM), 5 µl (5x) reaction buffer, 5 µl (50mM) MgCl2, 0.5 µl (10 mM) each primer, and 0.5 µl Tag DNApolymerase. PCR cycles for amplifications were performed using the following 35 cycles conditions denaturation at 94 o C for 1 min, annealing at 55oC for 1 min. A final extension at 720 C for 10 min was performed to completely extend the amplified product. The PCR product was purified with the QIAquick (QUIAGEN) estimated PCR product size for gene fragment was approximately 500 basepairs

Sequencing primers for Cyt-b gene (Kocher et al 1989)
L14724:
5-CGAAGCTTGATATGAAAAACCATCGTTG-8 A
h18918
5-AACTGCAGTCATCTCCGTTTACAAGAC-8



Cyt-b DNA PCR product after purification

Marker A-Hind III;
1. Individual No. 1
2. Individual No. 2
3. Individual No. 3
4. Individual No. 4
5. Individual No. 5
6. Individual No. 5
Marker 100bp.

- Kocher, TD, Thomas, WK., Meyer, A, Edwards, SV, Paalso, S, Villablanca, FX, 8 Wilson, AC (1989). Dynamics of mitochondrial DNA evolution in animals: Amplification and sequencing with conserved primers. Proc. Natl. Acad. Sci. U.S.A. 98: 6198-6200.







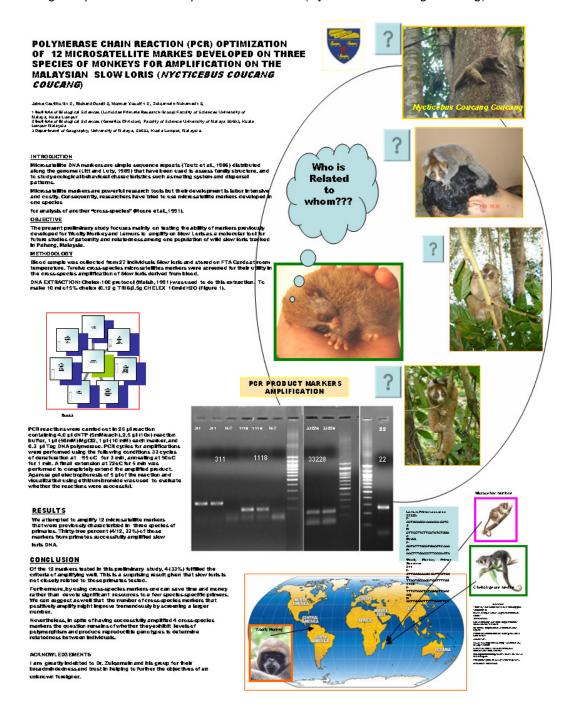






ACKNOWLEDGEMENT

We appreciate genetic tissue sampling assisted by Jabatan PER HILITAN and Malacca Zoos. The laboratory work has supported by the government Malaysia through the IRPA grants 04-02-02 0019 EA 301 **4.2** Cross-Species Amplification of 12 Primates microsatellites markers previously developed using samples from the Pro-primate Slow Loris (*Nycticebus coucang* coucang)



<u>4.3</u> Conservation and Awareness of Slow Loris. Trailing the Slow Loris, <u>The Star newspaper</u> <u>Kuala Lumpur Malaysia (17October 2006)</u>





17 October 2006 Tuesday **Environment** T3

Trapping one

TO say that trapping slow lorises is difficult is an understatement, heaves Jaime Castillo Garcia. And without help, it is impossible. "Whenever I saw one, I would call the willage people for help. We would spend two, three hours getting it down. Seven people, all big guys. trapping this small kongkong! It moves slowly, but they climb one tree it moves to another, and when they climb that tree, it moves to another."

Prior to his arrival in Lanchang a little over four months ago, Garcia was in the primal forest of the Krau Wildlife Reserve further north in Pahang. There, he worked on three transects—one at the peak of Bukit Tapah, another on the foothills of Bukit Rengit and the last at sea level along Sungai Lantai — to determine the population density of local loris communities.

He also tried trapping in nearby Kuala Gandah for a month but his collapsible traps baited with food, urine and faceta samples from captive lorises yielded nothing more exotic than rats and squirrels. Even the Orang

Asii hunters he enlisted eventually gave up the ghost.

"I decided this wasn't working, so I offered to pay the kampung people if they trap the kongkang for me."

According to Kamal Ahmad, 39, from Kampung Chempaka, while the slow loris is sought after by bomohs in Indonesia for chams, the local attitude here is "if it doesn't disturb us, we world rishturb it."

Along with the other villagers helping Garcia, he feels proud that their little animal is the subject of so much interest, and that Garcia is sharing his knowledge of it with them.

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Garcia believes the slow loris population in Lanchang is doing well because trees which villagers grew in between their orchards have formed wildlife corridors, so the animals are not isolated but could move between forest patches.

They like it because the trees look good in front of their house but without knowing it, they're conserving the place."

The data

SLOW loris populations were assessed by the World Conservation Union-IUCN in 1996 and in 2000. On both occasions, the populations were categorised as "lower risk/least concern". In Indonesia, the slow loris faces habitat destruction, illegal trade and hunting. The animals, which are sold openly at markets, are used in traditional medicines and kept as charms. The Loris and Potto Conservation Database, compiled by biologist Helga Schulze from the Ruhr University Bochum in Germany, says a 1987 study estimated 150,000 animals exist in indonesian reserves, but cannot be regarded as well-protected. In Indochina, the species is threatened not only by demand for traditional medicines but and the sold the sold will be uniformed to the sold of the s

The Slow Loris:

Belongs to the suborder of Prosimil or primitive apes.
A totally protected species, and so cannot be trapped or kept as pets.
Nocturnal (active at night) and arboreal (lives in treetops).
Has a poisonous bite.
Distributed over the indian subcontinent, southern China and South East Asia.
Is grouped into two species, Nycticebus courcing. The Malayan slow loris is considered a subspecies, Nycticebus courcing courcing, and point Nyctebus courcing menigensis (bound in Borneo and the Philippines) and Nycticebus courcing forwards of the New Active Courcing forwards (south in Borneo and the Philippines) and Nycticebus courcing forwards (south in Borneo and the Philippines) and Nycticebus courcing forwards (south in Borneo).

The Lorie and Botto Courseportion.

Global Positioning System (GPS) transmitters, he pointed out, while easier to track, are expensive and too heavy for smaler animals like the slow loris, which each measures between 30cm and 40 cm in length and typically weighs less than 2kg. It was the affermono before our night trek and while Bonita lay sedated, Jaime photographed her and took detailed in easurements as well as blood and hair samples for the DNA fingerprinting work that would make up the final component of his research prieder. For a Masters of Science at University Alabya, under the Group. He is focusing on the ecology of the Malayan slow loris and hopes to shed more light on the animal's ranging patterns and the list of plants which the animal uses. "We want to understand things like how much the animal moves daily and how the movement relates with other animals. We also want to apture dispersal... how young individuals move and establish an area a little bit further away and how they use sleeping sites. I also want to develop a biomap (a map of biological features related to the animal's ranging patterns.)."

To do all of this, Garcia needs to obtain data by tracking his collared animals via radio telemetry and recording their movements using the GPS. This he does daily between 7pm and 7am. Once he has that, he can use a Geographical Information System (GS) to create layers representing movement patterns for each slow loris. By layering the various elements together, he

hopes to obtain an integrated map that shows how his subjects interact with each other and their habitat.

But this stage of the project lies several months down the line. Right now, it is time to return Bonita to the wild.

That beep in the early afternoon the day after our night tracking exercise, we made our way to the spot where Bonita had been trapped not too long ago. On the way there, I thought about how Garcia has more than just his mammalian status in common with the little prosimians now. Not only was he a fan of the local fruits he bought to feed his captives, but over the last five months, he too had effectively become nocturnal, spending as he does 12 hours a night in the forest.

I asked what drove him on during those hours spent among the disorientating shadows.

"I stay focused because I get that beep. When I get that, I'm happy because it's moving, it's interacting with me, it's talking to me. If' I don't get that, I'm lost,' he englied.

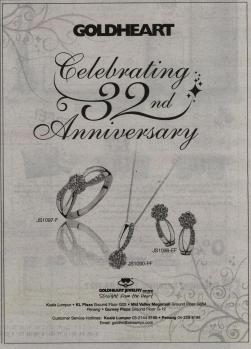
to me. If foot get that, in lower replied.

As he released Bonita from her net bag, he sped her on her way with hearty encouragements. Fully recovered from yesterday's sedative, she shimmied up a tree trunk and disappeared into the embrace of a palm tree—a slow loris favoured sleeping site—before a minute was up.

That beep is the most Garcia will hear from her now, but for him that is probably more than enough.



Jaime Garcia releasing the radio-collared adult female and baby where he originally trapped them.



<u>4.4</u> Wild Asia Seed Grant Recipients and Awareness, <u>The Star newspaper Kuala Lumpur</u> <u>Malaysia (17 October 2006)</u>



4.5 Department of Veterinary Services of Perak, Malaysia, Raising Awareness of Slow Loris (Trapping One)

Harga Daging Dan Ikan Tidak Dikawal

Department of Veterinary Services of Perak, M A L A Y S I A

Trapping one The Star, 17 Oct 2006

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