Report on the training in Field techniques for the study of Volant and Non-volant small mammals Randenigala, Sri Lanka.

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Background

From 29th October to 3rd November, 2005 a training exercise was conducted in Sri Lanka by CCINSA in collaboration with RILSCINSA, networks for small mammals based in India assisted ably by local organisations. In continuation of the capacity building exercises to ensure that there will be sufficient scientifically trained manpower in the South Asian region to carry out the uphill task of documentation, monitoring and conservation of small mammals of the region, the Chiroptera Conservation Information Network of South Asia (CCINSA) and Rodent, Insectivore, Lagomorph and Scandent Conservation Information Network of South Asia (RILSCINSA) organised a training workshop in the "Field techniques for the study of Volant and Non-volant small mammals" at Randenigala, Sri Lanka. This one was the 8th in the series. Before this we have had three in India, three in Pakistan and one in Bangladesh.

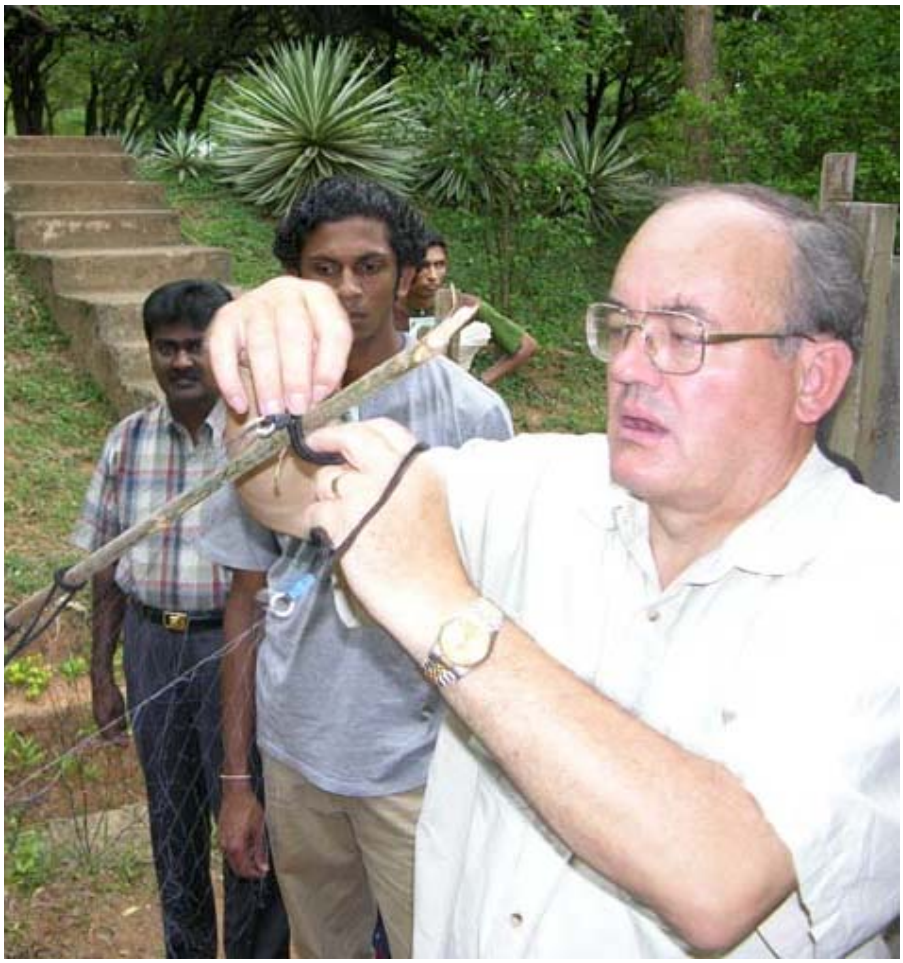
The programme was held at Training, Research, Education and Extension (TREE) Centre, Randenigala, Sri Lanka and was jointly organised by the Zoo Outreach Organisation, India, CBSG, South Asia and the Department of Zoology, University of Colombo, Sri Lanka, in collaboration with CCINSA, RILSCINSA and WILD (Wildlife Information Liaison Development Society). The venue of the workshop was an excellent setting at the TREE Centre in Randenigala, which in turn is located in one of the protected areas of Sri Lanka, viz. 'Victoria-Randenigala-Rantambe wildlife sanctuary, which incidentally is the largest protected area in Sri Lanka. The habitat of the area is predominantly scrub jungle to dry deciduous forests. The programme was sponsored by Chester Zoo, U.K., Bat Conservation International, U.S.A., Knowsley Safari Park, U.K. Dr. Mike Jordan, Curator of Higher Vertebrates, Chester Zoo and Dr. Paul Racey, Regius Professor, University of Aberdeen, U.K. were the main resource persons of the workshop.

All the participants and resource persons arrived at the venue on 29th October 2005 evening by 7 and straight away we commenced the session with a brief inaugural. Dr. Wipula Yapa, Senior Lecturer of University of Colombo, welcomed the participants and the resource persons, Dr. B.A. Daniel, introduced the resource persons and then had the 'ice- breaker", with a small activity called "sound off".

Day 1: The technical session began with the lecture by Mike Jordan, who introduced the biodiversity of the non-volant small mammals of the orders Rodentia, Insectivora, Lagomorpha and Scandentia. He stressed upon the disparity and the neglect that is being received by small mammals, in spite of the fact that they account for about 55% of the mammals of the world. The rodents are generally considered as pests, this is in spite of the fact that only 10 to 15 species (< 1%) are major pests. However, many of them are threatened with extinction. The diversity among the rodent group was well explained through slides by giving examples from Muridae, Sciuridae, Acomidae, Heteromyidae, Dipodidae, Geomyidae, Castomyidae and Hystricidae; the insectivore families such as Soricidae, Erinaceidae, Talpidae, Tenrecidae and Chrysocholidae.

This was followed by Mike's second presentation on different types of traps used for the study of the rodents. He explained about the live and single capture traps such as Sherman traps of varying dimensions, big wire mesh traps (also known as FAWS Trap– Forest And Wildlife Service Trap) etc. He also explained about the multi-capture traps such as UGLAN trap. The small mammals, being nocturnal, small and cryptic can only be studied by trapping. While setting the traps "One has to think like a small mammals", says Mike. He explained in detail with suitable examples, the number of traps required for the study of small mammals, place to set up traps and also minor details of successful trapping experiments such as space requirements and time of setting up the traps. Later Mike explained about the handling and welfare issues while studying both volant and non-volant small mammals. While handling the animals the primary aim should be "safety to

Dr. Mike Jordan gives an introduction in the field before setting traps



Paul Racey loops the mist net to the side pole.

the animals as well as to the person who is handling". Mike told that the advantages of handling volant and non-volant small mammals include species identification, sexing, marking, weighing, determination of the age, breeding condition etc. He also explained how these are done. Different types of marking the volant and non-volant small mammals were told by Mike and Paul.

Field session: Mike demonstrated the preparation of bait for setting the traps. Afterwards all the participants were taken to a nearby scrub jungle patch for the demonstration of setting traps. 30 traps were set and another 15 were set near the kitchen/canteen at the base camp.

Day 2: The day started with checking the traps set the previous day. It was a disappointment since most of the traps set were disturbed by the wild Macaques. However, one specimen of *Rattus rattus* was caught in one of the traps set on the tree. Mike explained in detail on the problems that the group encountered for a successful trapping. Alternative methods were discussed. He also demonstrated the handling techniques, identification and marking of the species using the trapped specimen before releasing it back in to the wild.

The technical session on the second day started with the presentation of Paul Racey, who gave a vivid introduction of bats, their general features, evolution, taxonomy, distribution, feeding ecology, echolocation and conservation. He then discussed about the survey techniques and study of bats. He stressed the need for the survey of the bats of the tropics, particularly South Asia, as there is very little information available on the bats of the region. Different types of nets to survey bats such as mist nets, harp nets, canopy nets, bat detectors, flick net etc were explained. To collect the bats at roosts large butterfly nets can be used. Paul also explained about the foraging strategy of different species/families of bats.

Paul explained about the use of dichotomous key and character matrix for the identification of bats in the field. He explained about sexing, breeding condition of the bats such as lactating or not and pregnant or not etc, and estimating the age of the bats.

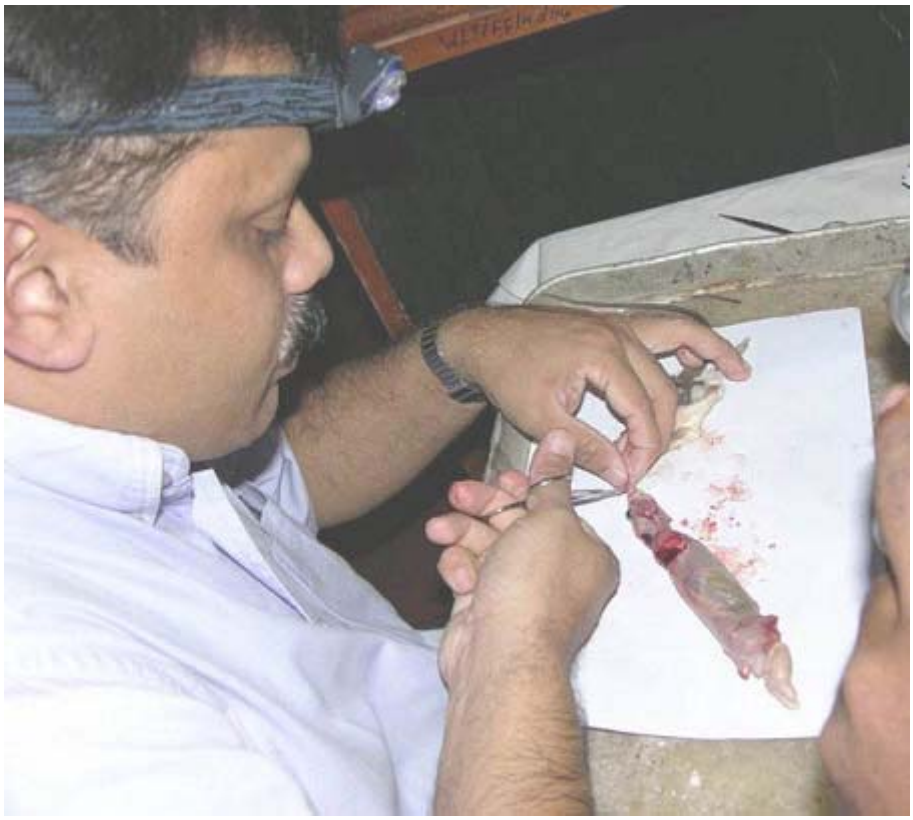
Field session: Three mist nets were set in and around the different buildings of the TREE centre. However, no bats were caught. Bats were however, seen flying all over there. In many instances they came very close to the mist net, but managed to avoid the nets.

Day 3: Field session: The day started with checking the traps. One *Rattus rattus* was caught from the natural forest patch and a *Mus booduga* was caught near the auditorium of TREE centre. The latter was caught in multiple capture trap, which actually is quite good for small body sized animals. Mike demonstrated handling, weighing, sexing, measuring, photographing releasing the animals. In the afternoon session of trap checking a *Funambulus palmarum* was caught, processed and released.

Paul Racey started the technical session on the third day by explaining the different methods of marking the bats, such as temporary marking (marker pen, nail varnish), permanent marking (forearm bands/rings, necklace, tattooing, bleaching the fur etc). Study of the foraging behaviour

of the bats, radio tracking studies, use of bat detectors etc were explained by Paul.

Nameer Ommer demonstrated the dry skin preservation techniques (carding) and preparation of the skull for storage in the museum. Voucher specimens are of extreme importance in the study of small mammals. It helps us to sort out taxonomical issues such as the identity of the species. Some of the advantages of carding, when compared to that of wet preservation are:a) it helps to retain the original colour and the shape of the animal for a longer period of time, to a great extent; and b) it help us save considerable space in the lab or museum. Moreover, it is also a very simple technique that can be done right in the middle of the forest/field station. All that is required is a pair of scissors and borax powder.



Nameer demonstrates the dry skin preservation techniques

Participant's presentations:
Maththegama Ralalage Manori Prasanthika Nandasena Goonathilake detailed about the findings of her Ph.D. dissertation on "Activity budget in diurnal roost of the False Vampire bat, *Megaderma lyra*". She studied a colony of 120 bats, and recorded various behavioural aspects.

Pradana Mudiyanselage Chandrasekara Bandara Digana explained about the results of his Ph.D. dissertation on "Survey of bats of Sri Lanka". He surveyed 18 districts of Sri Lanka, located > 500 roosts, and identified 20 species.

Field session: During the mist netting session in the evening two bats were caught out of the three mist nets kept. Paul Racey explained the method of processing the collected bats, including handling, removing the bats from the mist nets, recording the measurements, sexing, estimating the age, the reproductive condition of the bats etc. He also explained how to identify the bats. The bats caught were identified as *Pipistrellus coromandra* and *Hipposideros speoris.*

Day 4: Field session: The day started with checking the Sherman traps. One *Rattus rattus* and *Mus booduga* were caught. The handling and processing of the animals were demonstrated by Mike.

The technical session of the day was started by the presentation by Paul Racey on the dietary studies of the bats, wherein he explained about different techniques to study the dietary preferences of both fruit bats and insect bats.

This was followed by a panel discussion on survey protocols of volant and non-volant small mammals. The discussion was led by Paul Racey and Mike Jordan, during the course of which they answered different field related questions of the participants.

Mike Jordan illustrated about the importance of small mammal conservation with several examples. He explained about the threats to the small mammals such as habitat loss, introduction of alien and invasive species, predation, disease, habitat destruction, habitat degradation, all of which lead to habitat fragmentation. Defragmenting the population using recolonisation and reintroduction is a way out for the conservation of small mammals under severe threat. Mike also told that out of the 83 species of mammals that were extinct over the past 500 years, 75% are small mammals.

Wipula Bandara Yapa made presentation on an "Introduction to Sri Lankan Mammals" with particular emphasis on small mammals. This was followed by a presentation by Nameer Ommer on the CAMP process and the results of the CAMP on small mammals conducted by ZOO/CBSG

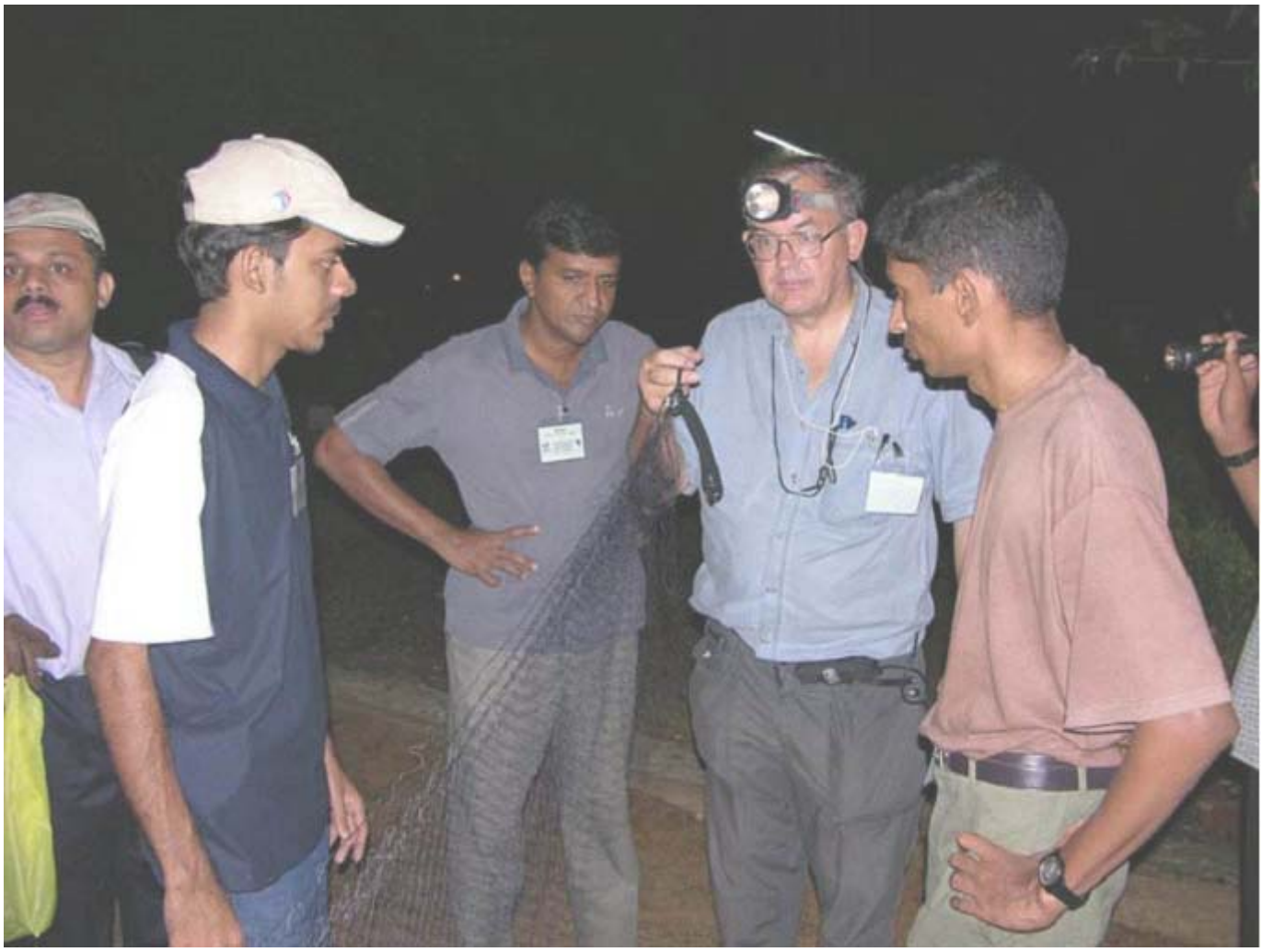
South Asia on small mammals during 2002 and 2004 on volant and non-volant small mammals respectively.

Field session: The evening mist netting was done on the bank of the Mahaveli River, which incidentally is the largest river in Sri Lanka. The river was dammed at Randenigala. Mist nets were set across the Minipe canal, just underneath one of the bridges across the Minipe canal. There was a roost below the bridge and within about 30 minutes of setting the net we caught six bats. These bats were processed in the field itself by Paul Racey. He explained the use of identification keys, and also the key prepared by Sampath de Alwis Goonatilake was used. With the help of the different keys, we reached up to the genus of the species caught, as *Myotis*. It was identified either as *Myotis hasseltii* or *Myotis horsfieldii*. Sampath and Yapa are studying the cranial and dental characters of the bats to confirm the identity. If it *Myotis hasseltii* then it is a rediscovery of the species after Phillips who located it in 1930s and if it is *Myotus horsfieldii* it will be a new record for the country.

One of the net was kept across a trail passing through the forest patch. One *Cynopterus sphinx* was caught in that net.

Day 5: B.A. Daniel explained about the various education activities of Zoo Outreach Organisation, particularly those related to small mammals.

Mike, Paul and Nameer then led a discussion on conservation recommendation of small mammals drawing examples from the IUCN Red list categories of small mammals of Sri Lanka. They pointed out the lack of our knowledge about the known species of small mammals of Sri Lanka and warrant more studies on them. One of the



Paul explains the technique of setting up mist nets to participants

main reasons for the conduct of this training workshop here in Sri Lanka is to equip young researchers to take up this challenge.

This was followed by a discussion on sources of funding for studies on small mammals, which was led by Paul and Mike. They have given the details including the web site address of various funding agencies that would be interested in funding studies on small mammals.

During the valedictory function all the participants were asked to give commitment to take up some activities towards conservation of bats and rodents. All participants received a certificate of appreciation and a CD containing all presentations of the resource persons and related literature. Dr. Wipula Yapa thanked all the participants for their interest shown in attending the workshop. He also thanked the Zoo Outreach Organisation, particularly Sally Walker for the visionary zeal of organising this kind of training workshop in different regions of South Asia, which would definitely have a long standing impact on the conservation of small mammals of the region in the years to come. Yapa also thanked the resource persons for their time and effort to go over to Sri Lanka to train the young biologists of the country.

Workshop Participants

Paul and Mike in the filed concluding remarks of the day

The ongoing small mammal training in South Asia conducted collaboratively by CCINSA and RILSCINSA is sponsored by

Chester Zoological Gardens, U.K. (Bats)

Bat Conservation International, U.S.A. (Bats)

Knowsley Safari Park, U. K. (Rodents)

Field Techniques Hands on Training workshop on Survey of Small Mammals

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