REPTILE RAP

South Asian Reptile Network Newsletter *Vol. 2, No. 1, September 2000*

The Common Sand Boa (*Eryx conicus*) in Captivity

Vibhakar K. Paralkar
Pisciculture Consultant, Manavakalyan, B2/3 Bangur Nagar, Goregaon, Mumbai

On 29th October 1984, I was walking on Linking road at my regular night walk in Goregaon's Western suburb. On my return at 22 hours, I saw a snake on Asphalt road and brought it home. It measured 52 cm long. The snake was kept in the wooden box of size 30 x 30 x 25 cm., with a top door of wire mesh and a water pot inside.

On the next day, a 30 to 35 mm size frog was released in the box, but it was ignored by the snake but the frog was found dead on 1 November. I tried feeding bigger sized frogs twice but they were not accepted by the snake.

Once while feeding, the cover of a box accidently remained loose and the snake escaped from the box at night. I carefully searched all the corners, furnisutres and every possible hiding place and finally it was found in a box file on the shelf at about 6 ft. high. After two week I constructed a cage using an old aquarium 60 x 30 x 30 cm. I fixed an asbestos cement sheet at the back and at bottom and with wire mesh on both sides. A front glass was fixed for viewing. A plywood sheet was used for top door, with hinges and a small 10 x 10 cm cutout door for feeding purpose. Two half-curved earthen roof tiles were piled up with a log of wood in one corner, as a hiding place and sufficient space for moving on a soil bed. A 15 cm ellipse shape 5 cm high glass pot with water was kept at the other corner.

The snake settled down in this new cage quite readily. It spent nearly all the day hiding under the tile and sometimes coiled beside the water pot. At night it became active, moved in the cage and tried to climb up to the top of the cage. When first caught, it was found timid and refused to bite. But inside the cage, I found that on slightest touch, it was quick to bite in defense, which was painful but not harmful.

Observations

Before sloughing, the body colour became dull, even eyes coverd with milky white opaque covering. The snake remained inactive and did not accept food. The process of shedding was observed, completed in 26 to 78 hours, beginning from the head region with eye caps intact was shed along with the skin of the rest of the body. The skin found in one piece wrapped like a removed stocking and not straight, and when tried to open straight, it broke in pieces. After sloughing, the snake became very active, the body colour looked brighter, and it accepted food. WHile fed with a live rat, the snake watched the prey for 5 to 20 minutes, killed the prey by constriction, held it up, with body coiled round the prey and exerted a pressure for up to 27 minutes and then started swallowing from the mouth end always. Even when offered a freshly killed rat, the swallowing process took upto 33 minutes.

The snake was released on 25th October'88 at 22.25 hours in the same area, 8 to 9 metres away in safer environment from where it was found. Before releasing, it was measured and found 61 cm., a growth of 9 cm in 4 years of captivity.

RAP RAP !!
Any reptile biologists out there ??

This is the second issue of REPTILE RAP and we at Zoo Outreach Organisation are extremely pleased to be contributing our bit to the functioning of the South ASian Reptile Network. Unlike amphibian, bat or invertebrate networks, we find the response to the network call slightly lackadaisical. Is it that there are too many reptile people around, or organisations established, that biologists are fazed about another network? If so, why did the 84 people who are members respond? Can I request you to just devote some time for this and inform us of other reptile researchers, students, professional, conservationists in the various institutes, wildlife departments, universities, colleges, government, forest departments, NGOs, zoos, independents, etc. from all the South Asian countries, viz. Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. A form is attached with this newsletter for this purpose, which we would appreciate if it is filled in and sent to us at Zoo Outreach Organisation.

WILD Columbus ZOO ZOO

CONSERVATION ASSESSMENT AND MANAGEMENT PLAN WORKSHOP FOR AMPHIBIANS AND REPTILES OF SRI LANKA

26-30 November 1998, University of Peradeniya, Peradeniya, Sri Lanka

Report -- Executive Summary

The diversity of Sri Lankan herpetofauna is among the richest in the world. The fauna is also among the highly threatened forms in the world, thanks to the small size of the island and the various threats acting on them. To assess the status of all the herpetofauna on the island, two attempts were made – one by the IUCN Sri Lanka office, who have assessed the forms according to a criteria derived to be fit for the small island, and, the other attempt was made in November 1998 by a group of organisations by using the IUCN Red List Criteria. The combined effort by three organisers, three sponsors and three collaborators resulted in a Conservation Assessment and Management Plan workshop held for five days from 26 to 30 November 1998, in the Univeristy of Peradeniya, Faculty of Medicine. The Amphibian and Reptile Research Organisation of Sri Lanka (ARROS), University of Peradeniya and the Conservation Breeding Specialist Group, Sri Lanka organised the workshop, which was sponsored by the Philadelphia Zoo and Columbus Zoo Conservation Fund. The Conservation Breeding Specialist Group, India assisted externally with organising the workshop and facilitating it. The workshop and the process itself was ratified and supported by the South Asian Reptile and Amphibian Specialist Group, the Declining Amphibian Populations Task Force (DAPTF) and the Declining Amphibian Populations Task Force, South Asia. The Friends of Rare Amphibians of the Western Ghats (FRAWG) and the Wildlife Heriatge Trust of Sri Lanka were external collaborators.

Totally, 173 amphibians and reptiles were assessed at the workshop, of which 54

Status of Reptiles of Sri Lanka

Scientific name	Category (Criteria)
Agamidae	
Calotes calotes (Linnaeus, 1758)	LR-nt
Calotes ceylonensis Muller, 1887	LR-nt
Calotes liocephalus Günther, 1872	EN (B1+2bc)
Calotes liolepis Boulenger, 1885.	VU (A1c; B1+2bc)
Calotes nigrilabris Peters, 1860	VU (B1+2abc)
Calotes versicolor versicolor (Daudin, 1802)	LR-nt
Ceratophora aspera Günther, 1864	EN (B1+ 2abcd)
Ceratophora erdeleni Pethiyagoda & Manamendra-Arachchi, 1998	CR (B1+2bc)
Ceratophora karu Pethiyagoda & Manamendra-Arachchi, 1998	CR (B1+2bc)
Ceratophora stoddartii Gray, 1834	VU (B1+2abcd)
Ceratophora tennentii Günther, 1861	EN (B1+ 2abcd)
Cophotis ceylanica Peters, 1861	EN (A1c+2c)
Lyriocephalus scutatus (Linnaeus, 1758)	VU (A1c+2c)
Otocryptis wiegmanni Wagler, 1830.	LR-nt
Sitana ponticeriana Cuvier, 1844	VU (A1c+2c)
Bataguridae	
Melanchelys trijuga parkeri (Deraniyagala, 1939)	VU (A1c)
Boidae	
Eryx conica brevis (Deraniyagala, 1951)	LR-nt
Chameleonidae	
Chamaeleo zeylanicus Laurenti, 1768	EN (B1+2bc)
Chelonidae	
Caretta caretta (Linnaeus, 1758)	EN (A1cd)
Chelonia mydas (Linnaeus, 1758)	EN (A1cd)
Eretmochelys imbricata (Linneaus 1766)	EN (A1cd)
Lepidochelys olivacea (Eschschottz, 1829)	EN (A1cd)
Colubridae	
Aspidura brachyorrhos (Boie, 1758).	VU (A2c; B1+2bc)
Aspidura copei Günther, 1864	EN (B1+2bc)
Aspidura deraniyagalae Gans & Fetcho, 1982	CR (B1+2bc)
Aspidura drummondhayi Boulenger, 1904.	EN (B1+2bc)
Aspidura guentheri Ferguson, 1876	VU (B1+2bc)
Aspidura trachyprocta Cope 1860	VU (A2c)

assessed at the workshop, of which 54 were amphibians. Of the 175 reptiles present on the island, only 119 were assessed in the time available. A total of 35 amphibian and reptile specialists participated in the workshop.

The workshop was based on the Conservation Assessment and Management Plan (CAMP), a workshop process developed by the Conservation Breeding Specialist Group (CBSG) of the Species Survival Commission (SSC)/ The World Conservation Union (IUCN). CAMP workshop is an ideal methodology for involving national or regional specialists to assess the conservation status of a group of taxa, e.g. mammals, birds, algae, etc. Preparation for the CAMP workshop involves identifying specialists on group of taxa to be assessed. Descriptive CAMP material and a set of Biological Information Sheets for species-specific questions are circulated to specialists. The Biological Information Sheet can be copied and filled out before the workshop or posted to the organisers if the specialist cannot attend. At the workshop the participants are divided into convenient-size groups of either taxonomic group specialty or geographical area specialty. The groups are then provided the Taxon Data Sheets on which they record information from the Biological Information Sheets and participating specialists. The Taxon Data Sheet consists of two parts, namely the taxon information and the management recommendations. All participants at the workshop correct and ratify the data compiled in each Taxon Data Sheet during the final plenary session.

After the workshop the editors/ facilitators undertake a review of the information compiled at the workshop by posting a draft report to all participants for corrections, modification and for other information not submitted at the workshop. In the case of this CAMP exercise, a group of specialists gathered subsequently and reviewed the data in the draft report before submission. Their names have been included in the Taxon Data Sheets as reviewers.

The taxon assessments were based on the new IUCN Red List Criteria (1994) developed by the IUCN. The IUCN Red List Criteria have evolved over the last 30 years starting from a subjective perception

Aspidura trachyprocta Cope 1860	VU (A2c)
Belanophis ceylonensis (Günther, 1858)	LR-nt
Boiga barnesii (Günther, 1869)	EN (B1+2bc)
Calliophis melanurus sinhaleyus Deraniyagala, 1951	VU (A2c)
Cercaspis carinata (Kuhl, 1820)	VU (B1+2bc)
Chrysopelea ornata sinhaleya Deraniyagala, 1945	VU (A1c; B1+2bc)
Chrysopelea taprobanica Smith, 1943	VU (A2c)
Dendrelaphis oliveri (Taylor, 1950)	CR (B1+2bc)
Haplocercus ceylonensis Günther, 1858	VU (A2c; B1+2bc)
Lycodon osmanhilli Taylor 1950	LR-lc
Lycodon striatus sinhaleyus Deraniyagala, 1955	VU (A2c; B1+2bc)
Macropisthodon plumbicolor palabariya Deraniyagala, 1955	VU (A2c; B1+2bc)
Oligodon calamarius (Linnaeus, 1758)	VU (A2c; B1+2bc)
Oligodon sublineatus Duméril, Bibron and Duméril, 1854	LR-nt
Oligodon taeniolatus ceylonicus Wall 1921	VU (A2c; B1+2bc)
Ptyas mucosus maximus (Deraniyagala, 1955)	LR-nt
Xenochrophis asperrinus (Boulenger, 1891)	LR-nt
Crocodylidae	
Crocodylus palustris (Lesson, 1838)	VU (A1acd; B1+2c)
Crocodylus porosus Schneider, 1801	VU (A1acd; B1+2c)
Dermochelyidae	
Dermochelys coriacea (Vandelli, 1761)	EN (A1cd)
Elaphidae	
Bungarus ceylonicus ceylonicus Günther, 1864	VU (A1c+2c)
Bungarus ceylonicus karawala (Deraniyagala, 1955)	VU (A1c+2c, B1+2bc)
Gekkonidae	
Calodactylodes illingworthi Deraniyagala. 1953	EN (B1+2abc)
Cnemaspis jerdonii sculpensis (Ferguson, 1879)	VU (B1+2bc)
Cnemaspis kandianus (Kelaart, 1852)	VU (A1c)
Cnemaspis podihuna Deraniyagala. 1944	CR (B1+2bc)
Cnemaspis tropidogaster (Boulenger, 1885)	VU (B1+2bc)
Cyrotodactylus frenatus (Günther, 1864)	VU (A2c; B1+2bc)
Geckoella triedrus (Günther, 1864)	VU (A1c; B1+2bc)
Geckoella yakhuna (Deraniyagala. 1945)	LR-nt
Hemidactylus brookii parvimaculatus Deraniyagala, 1953	LR-lc
Hemidactylus depressus Gray, 1842	LR-nt
Hemidactylus maculatus hunae Deraniyagala, 1937	EN (B1+2bc)
Hemidactylus triedrus lankae Deraniyagala, 1953	LR-nt
Hydrophiidae	
Leioselasma cyanocinctus (Daudin, 1803)	LR-nt
Microcephalophis gracilis (Shaw 1802)	LR-nt
Pleamis platurus (Linnaeus 1766)	LR-nt
Praescutata viperinus (Schmidt 1852)	LR-nt
Lacertidae	
Ophisops leschenaultii lankae (Deraniyagala, 1953).	LR-nt
Ophisops minor minor (Deraniyagala, 1971)	VU (B1+2c)
Scincidae	
Chalcidoseps thwaitesii (Günther, 1872).	EN (B1+2bc)
Dasia halianus (Haly & Nevil, 1887)	LR-nt
Lankascincus deignani (Taylor, 1950)	EN (B1+2bc)
Lankascincus deraniyagalae Greer, 1991.	EN (B1+2bc)
Lankascincus fallax (Peters, 1860).	LR-nt
Lankascincus gansi Greer, 1991.	VU (A1c)
Lankascincus taprobanensis (Kelaart, 1854)	EN (B1+2bc)

Lankascincus taylori Greer, 1991.	VU (B1+2bc)
Mabuya bibronii (Gray, 1833)	DD
Mabuya carinata lankae Deraniyagala, 1953.	LR-nt
Mabuya floweri Taylor, 1950.	DD
Mabuya madaraszi Mehely, 1897.	VU (A1c+2c)
Nessia bipes Smith, 1935.	EN (B1+ 2bc)
Nessia burtonii Gray, 1839.	LR-nt
Nessia deraniyagalai Taylor, 1950	CR (B1+2bc)
Nessia didactylus (Deraniyagala, 1934).	CR (B1+2c)
Nessia hickanala Deraniyagala, 1940.	EN (B1+2bc)
Nessia layardi (Kelaart, 1853).	CR (B1+2c)
Nessia monodactylus (Gray, 1839)	VU (B1+2bc)
Nessia sarasinorum (Muller, 1889)	LR-nt
Riopa singha (Taylor, 1950).	DD
Sphenomophus dorsicatenatus Deraniyagala, 1953.	VU (A2c)
Sphenomophus dussumieri Duméril and Bibron, 1939	DD
Sphenomorphus megalops (Annandale, 1906).	DD
Sphenomorphus rufogulus Taylor, 1950.	VU (D2)
Sphenomorphus striatopunctatus (Ahl, 1925)	EN (B1+2bc)
Testudinidae	
Geochelone elegans (Schoepff, 1795)	VU (A1cd)
Trionychidae	
Lissemys punctata punctata (Bonnaterre, 1789)	VU (A1c)
Typhlopidae	
Typhlops ceylonicus Smith 1943	CR (B1+2bc)
Typhlops lankaensis Taylor 1947	CR (B1+2bc)
Typhlops mirus Jan, 1860	EN (B1+2bc)
Typhlops tenebrarum Taylor 1947	CR (B1+2c)
Typhlops veddae Taylor 1947	CR (B1+2c)
Typhlops violaceus Taylor, 1947	CR (B1+2c)
Uropeltidae	
Cylindrophis maculata (Linnaeus, 1758)	LR-nt
Pseudotyphlops philippinus Schlegel, 1839	EN (B1+2c)
Rhinophis trevelyanus (Kelaart, 1853)	VU (B1+2bc)
Rhinophis blythii Kelaart, 1853	EN (B1+2abc)
Rhinophis dorsimaculatus Deraniyagala, 1941	CR (B1+2abc)
Rhinophis drummondhayi Wall, 1921	EN (B1+2bc)
Rhinophis oxyrhynchus (Schneider, 1801)	VU (A2c)
Rhinophis philippinus (Cuvier, 1829)	VU (A2c; B1+2bc)
Rhinophis porrectus Wall, 1921	EN (B1+2c)
Rhinophis punctatus Muller, 1832	EN (B1+2c)
Uropeltis melanogaster (Gray 1858)	VU (B1+2bc)
Uropeltis phillipsi (Nicholls 1929)	CR (B1+2bc)
Uropeltis ruhunae Deraniyagala, 1954	CR (B1+2c)
Varanidae	
Varanus bengalensis (Daudin, 1802)	LR-nt
Varanus salvator kabaragoya (Deraniyagala, 1947)	VU (A2bd)
Viperidae	
Hypnale nepa (Laurenti, 1768)	VU (B1+2c)
Hypnale walli (Gloyd, 1977)	VU (B1+2bc)
Trimeresurus trigonocephalus (Sonnini & Latriele, 1801)	VU (A1c)

The report is available at Zoo Outreach Organisation, PB 1683, 79 Bharathi Colony, Peelamedu, Coimbatore, Tamil Nadu 641004, India [herpinvert@vsnl.com]. The 225-page report contains Taxon Data Sheets for all amphibians and reptiles of Sri Lanka. Copies are also available with Anslem de Silva, Faculty of Medicine, University of Peradeniya, Peradeniya, Sri Lanka [anslem@med.ac.lk].

Prices (in India and Sri Lanka) are yet to be fixed, so please enquire.

in Red Data Books to the more sophisticated and objective Red Lists of today. The current categories and criteria ratified by the IUCN Committee in 1994 incorporates principles of population dynamics and conservation biology and is a product of nearly five years of revisions. The 1994 criteria is based on scientific rationale (principles of conservation biology) and has its advantages in being applicable to any taxonomic group, is comparable and is transparent in its applicability.

The 1994 IUCN Red List Criteria was adopted as a tool to assess the amphibians and reptiles of Sri Lanka. The probability of extinction determined the status of a taxon in the wild. The IUCN criteria include categories that determine whether a taxon is threatened, non-threatened, extinct, poorly known or is not fit/ considered for evaluation, based on the information available for assessment.

Assessments at the workshops were made from information gathered from all the participating biologists, from their knowledge in the field, including unpublished information of range extensions, sightings, local threats, habitat changes, impact of changing ecology and other important information that does not normally get published but is available. Sources from literature are also sought in compiling this information, and museum records, if available, are included. After the initial compilation of data in a Taxon Data Sheet, the status is derived using qualifiers (or criteria) for the degrees of threat and the information is ratified after discussion at an open plenary in the workshop. The information in the Taxon Data Sheet is then typed up and a draft sent to all participants for further review, additions or minor modification of information.

Amphibians in Sri Lanka are represented in five families, namely, Ichthyophiidae, Ranidae, Bufonidae, Microhylidae and Rhacophoridae. Family Salamandridae or newts are not found on the island. Of the 54 amphibian taxa (all valid descriptions until the date of the workshop) assessed at the workshop, 34 are endemics, meaning their distribution is restricted to only Sri Lanka, while the remaining 20 taxa are found on the Indian mainland also. The threats faced by many of the Sri Lankan amphibians have resulted in a

considerable number of restricted taxa being threatened in the wild. According to the IUCN Criteria, 19 endemic and 2 non-endemic amphibians are threatened to differing degrees and are therefore, Vulnerable, Endangered or Critically Endangered. Most of these assessments are also based on restricted distribution criterion. Threats affecting amphibians in Sri Lanka include pollution, pesticides and human influenced changes such as agricultural practices, loss of habitat and fragmentation. Change in climate patterns is also thought to affect amphibians on the island.

Similarly, 87 of the 119 assessed reptiles were categorised as threatened according to the Criteria. Of the 97 endemic reptiles, 74 were assessed as being Vulnerable, Endangered or Critically Endangered. Thirteen of the 22 non-endemics assessed also were found threatened. Of the 175 reptiles only 119 taxa were assessed at the workshop. The threats to the reptiles in Sri Lanka are more due to threats that are perceivable such as habitat loss, fragmentation, change in quality of habitat and human interference. Pollution and pesticides along with man-made fires are also a threat but do not affect reptiles as much as they do the more sensitive amphibians.

As evidenced by the assessments, much of which was done with limited information, more studies are required to really understand the status of the herpetofauna in the wild, a situation that is common in herpetofauna research in South Asia. Even though most of the assessments are made with reasonable data, or inferences, it is clear that direct observations are lacking. Monitoring of species is extremely rare, and in many cases only sporadic sightings or accidental observations are the sole indicators of a species' existence in a habitat. Various recommendations, therefore were suggested as part of the management planning of this exercise, whereby surveys, monitoring, habitat management, genetic studies, taxonomic studies, limiting factor research, limiting factor management, life history studies, captive breeding and other basic research and management recommendations were made. It was also suggested that this exercise be carried out again in a few years to determine the status of Sri Lanka's herpetofauna after some more information is collected.

ABSTRACTS OF RECENT ARTICLES FROM HERPETOFAUNA AND OTHER JOURNALS FROM SOUTH ASIA

J. South Asian Nat. Hist., September, 1999. Vol. 4, No. 2, pp. 213-218, 2 figs.

The systematic status of the endemic south Indian gecko *Hemiphyllodactylus aurantiacus* (Beddome, 1870)

Aaron M. Bauer & Indraneil Das

Hemiphyllodactylus aurantiacus (Beddome, 1870), hitherto considered a subspecies of the more widespread *H. typus*, is shown to be a distinct species, diagnosable in showing a lower number of scansors and presacral vertebrae and bolder dorsal and subcaudal coloration. The two species are allopatric. New ecological data are provided of the south Indian endemic from the type locality, where the species was found commonly on walls of buildings at night.

J. South Asian nat. Hist., November, 1998. Vol.3, No. 1, pp. 121-172.

History and catalogue of reptile types in the collection of the Zoological Survey of India

Indraneil Das, Basudeb Dattagupta and Nimai Charan Gayen

The contents of the reptile type collection of the Zoological Survey of India, headquartered in Calcutta, with several regional stations in the country, which incorporates the holdings of the Asiatic Society of Bengal and the Indian Museum, are listed. The annotated list includes original citations, registration numbers, nature of type and present status of every taxa, with additional remarks where necessary. In all, 554 primary and secondary types are present, including 287 name-bearing taxa (comprising 27 Testudines, 151 Sauria and 109 Serpentes). A list of types that were not located, including those erroneously mentioned as being in the collection, is also included.

J. South Asian nat. Hist., January, 1998. Vol. 3, No. 1

A revision of the endemic Sri Lankan agamid lizard genus *Ceratophora* Gray, 1835, with description of two new species

Rohan Pethiyagoda & Kelum Manamendra-Arachchi

The horned lizards of the endemic Sri Lankan genus *Ceratophora* Gray, 1835, hitherto considered to be comprised of only three species (*Ceratophora stoddartii* Gray, 1835; *C. tennentii* Günther & Gray, 1861; and *C. aspera* Günther, 1864), are redescribed. Two new species are described: *Ceratophora erdeleni* sp. nov. is distinguished from all other Ceratophora by having the rostral appendage absent or rudimentary (8.7-17.3% of eye-to-nostril distance, if present). *Ceratophora karu* sp. nov. is distinguished from its congeners (except *C. tennentii* and *C. aspera*) by the rostral appendage being complex, comprising more scales than the rostral scale alone; it is distinguished from C. tennentii by the presence of prominent superciliary scales (absent in *C. tennentii*) and from *C. aspera* by the absence of a squamosal process and the presence of a prominent nuchal crest (vs. squamosal process present, nuchal crest feebly defined in *C. aspera*). All the species, except for C. erdeleni and *C. karu* (which share part of their ranges of distribution), are allopatric. While *C. aspera* is widely distributed in the lowland moist forests of Sri Lanka's south-western wet zone, all the other species of *Ceratophora* are restricted to areas of undisturbed cloud forest between 760 and 2200 m above sea level.

J. South Asian nat. Hist., April 1994. Vol. 1, No. 1.

Conservation and distribution of the agamid lizards of Sri Lanka with illustrations of the extant species

Kelum Manamendra-Arachchi and Saman Liyanage

Of the 13 species of agamid lizards in Sri Lanka, only *Calotes versicolor, C. calotes, C. nigrilabris, Sitana ponticeriana* and *Otocryptis wiegmanni* are considered not to be under threat. The populations of the other eight species are considered to be endangered, largely due to habitat loss by way of deforestation. The southwestern wet zone of Sri Lanka, the Knuckles range of hills and the highest (ca. 2,000 m. elevation) hills of the central hill country are identified as the habitats associated most closely with the endangered species. These are also the habitats most at risk. Distribution maps based on recent observations and colour photographs of all the taxa have been provided in order to illustrate the zoogeography of this group in Sri Lanka and the taxa themselves.

Continued on page 7.

Population and Habitat Viability Assessment for Gharial

Gwalior, January 1995

Report -- Executive Summary

From 16-18 January 1995 a Population and Habitat Viability Assessment (P.H.V.A.) Workshop for Gharial was held at Jiwaji University, Gwalior. It was attended by an assembly of wildlife field managers, captive management specialists, gharial researchers, university professors and NGO's / NGI'S.

Twenty years ago - in 1975 a Crocodile Project was initiated in India. This programme included conservation of three threatened species of crocodilians, including gharial, a species of immense scientific interest. After two decades of conservation and significant progress, some researchers and wildlife officers felt that the work lacked a well-difined direction. There were accompanying concerns about the actual success of the conservation measures so far implemented, and the fate of the species in the near and distant future. Recent decisions to terminate supplementation of wild populations withdrew active assistance towards recuperation of the species. Concerned researchers and managers felt that a systematic assessment of the current status of the species following the years of harvest, supplementation and other management strategies was necessary at this time.

After consultation with leading crocodile experts and institutions of the country in states like Orissa, U. P., Tamil Nadu and M. P., the PHVA for Gharial was initiated by the School of Studies in Zoology at Jiwaji University which has been involved actively in research activities and conservation of this species since ten years. The Madhya Pradesh Forest Department came in as a co-organiser. The Ministry of Environment and Forests, Government of India agreed to sponsor the Workshop. The Zoo Outreach organisation/ CBSG, India agreed to facilitate the Workshop.

Population and Habitat Viability Assessment, developed by the Conservation Breeding Specialist Group, SSC, IUCN, is a process for assessing extinction risk for a species and for developing management recommendations to enhance long-term survival. PHVA workshops are conducted in the range area of the species in collaboration with wildlife agencies of the area. Also included in the PHVA process was an evaluation of the status of the species in captivity, projected plans for reintroduces on, and issues requiring collaboration research.

In this Workshop issues and concerns of gharial were discussed in a combination of small working group sessions alternating with plenary discussions. The Working Groups were Census and Distribution Group, Habitat Group, Modelling Group, Threats Group, Captive Management and Disease Group, Education/Awareness/Human Interaction Group, Trade Group, and Reintroduction Group.

The census and Distribution Group reviewed the information collated by the researchers and field manages. In the past two decades about 4000 gharial have been released into 12 rivers in four states under the "Grow and Release" programme in which eggs were collected -and hatched and hatchlings reared to sizes which increased the probability of their survival. While there is every intidication that this Programme has made the species secure in certain areas, there was a conspicuous lack of information in other areas.

This Working Group recommended that the Annual Census be done in every area, using a more standardised methodology, and taking the help of local people and other volunteers for whom briefing sessions and literature would be organised. It was also recommended that a Central Coordinating Unit be established which would provide a mechanism for better interaction between the different states and agencies involved in conservation activities for gharial.

The Habitat Group defined the various components (with particular emphasis on prey availability) that make up an "ideal" habits which constitute the criteria by which suitable reintroduction sites could be identified in the future. Sites which fall outside protected areas but are felt to be highly suitable and stable or those which migrant gharials are typing to recolonise, should be protected under the Wildlife (Protection) Act. International cooperation for better management of metapopulation is recommended for habitats extending across international borders.

The Modelling Group simulated gharial populations over a wide range of sites and under various conditions. The three populations—Chambal, Mahanadi and Katheriniaghat - are in different degrees of stability. The Chambal population is stable and can even withstand a yearly harvest for genetic supplementation of other population., if there is need. A review of the Chambal population is recommended before five years and after collection of some more information. Tne Mahanadi population, while appearing relatively stable, suffers from a larger number of more potentially catastrophic threats. Extensive studies need to be done on these threats and the population needs to be thoroughly assessed again before five years with additional data. The Katheriniaghat population is very small and unstable, and. requires continuous supplementation in order to be sustained at all, Genenics studies for diversity and for variability are crucial for all populations.

The Threats Group identified 10 direct and 8 indirect threats and identified that gharial populations of Mahanadi River was the most seriously threatened. It was felt that the Ramganga population least affected by such threats. It was noted that threats to gharial in unprotected arose such as fishing, sand mining, river side cultivation and industrial pollution can be controlled best by education/awareness activities. It emerged from the Modelling exercise that inbreeding could be a more serious threat than previously considered.

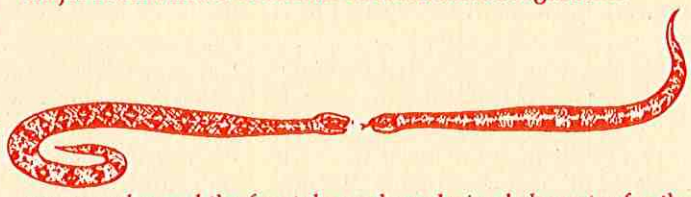
The Captive Management and Disease Group assessed the ability of existing captive facilities to breed and rear gharial for future,

either for supplementation of wild or for provision to zoos for exhibition and education. They concluded that all these facilities taken together could generate a spatial capacity to propagate as many as 4000-5000 animals per year if required. In this scenario, a coordinated, scientific breeding programme is necessary. The Group recommended that the zoos holding gharial should create or upgrade gharial enclosures so as to be more educationally relevant and more mindful of the welfare of the animals. Those zoos which are identified as breeding or holding units for conservation may be suitably improved.

2. The Trade Group assessed the request of some agencies for an opinion on the opening of trade based on utilisation of Gharial. The Group felt that conservation of Gharial would not be improved by opening of trade and in fact could be seriously damaging. The Group affirmed other effects of opening trade also, e.g. that it would convey a wrong signal for conservation of wildlife in general, offend the cultural and religious sentiments of a large portion of the population, and even contradict Article 5/A of the Constitution of India.

The Reintroduction Group endorsed the contention of the Census and Distribution Group as well as that of the Modelling Group that regular supplementation should be maintained without significant reduction. However, it was felt that the age of the animals when released and the sex ratio may need to be redefined according to scientific research input. Frequent and consistent monitoring to determine habitats in which populations had responded favourably to supplementation with captive reared animals is recommended.

The Education Group identified several target groups, including the people who are most affected by gharial conservation, e.g. fishermen. They suggested methodology suitable for each target group and recommended a drastic upgrading of public education with respect to gharial conservation. The PHVA participants agreed that lack of public education had been a major lacuna in the Crocodile Conservation Programme.



J. Bombay nat. Hist. Soc., April 2000. Vol.97, No. 1, pp 33-41.

An Ecological Study of Crocodiles in Ruhuna National Park, Sri Lanka

Charles Santiapillai, Mangala De Silva, Sarath Dissanayake, B.V.R. Jayaratne and S. Wijeyamohan

A study was carried out in Block I (140 sq. km) of the Ruhuna National Park (RNP) opportunistically from October 1991 to October 1994, in order to study the two species of crocodiles occurring in Sri Lanka, viz. *Crocodylus palustris* and *C. porosus*. A total of 341 sightings of the two species were made on 77 occasions, 307 sightings on *C. palustris* and 34 sightings on *C. porosus*. Among *C. palustris*, solitary animals made up most of the observations (55.8%) while pairs accounted for 13.0% of the 22 water-holes that were surveyed, 13 (59%) had only one crocodile. Although both species could be seen at any time of the day, the number basking increased with the increase in the ambient temperature, and peaked around noon. *C. porosus* basked alone, and *C palustris* communally. The population structure consisted of 44% hatchlings, 6% juveniles, 24% subadults and 26% adults. Only adults of *C. porosus* were observed. Hatchling losses can be very high through predation by birds and mammals. Both species feed on a variety of food, ranging in size from aquatic insects and crustacea (in hatchlings) to fish, frogs, birds and large mammals (in adults). The minimum crude density values for *C. palustris* and *C. porosus* are estimated to be 0.72 and 0.07 animals per sq. km respectively. The populations of both species in Block I appear to be secure and viable.

Hamadryad, March 2000. Vol. 25, No. 1, pp 1-12.

Six characters of systematic importance in the Scincid Lizard Genus *Mabuya*

Allen E. Greer and Donald G. Broadley

Six heretofore unrecognised characters in *Mabuya* are described and their distribution among the species in the genus is given where known. The reduction in the contact between the first supraocular and the frontal may be a derived character for the otherwise poorly diagnosed genus. The most posterior supraocular contacted by the frontal; the number of pretemporal; the number of temporal scales and their configuration; the number of small rows of scales dorsal to the window of the lower eyelid, and the fragility of the skin all vary interspecifically and hence are useful characters not only for the identification and alpha taxonomy of the species, but also for the eventual analysis of their phylogenetic relationships.

Hamadryad, December 1998. Vol.23, No.2, pp. 127-132.

A New Species of Tenuidactylus (Sauria: Gekkonidae) from Balochistan, Pakistan

Khalid J. Baig

Abstract:- A new species of Tenuidactylus is described from the Toba Kakar Range of north-eastern Balochistan, Pakistan. Tenuidactylus rhodocaudus sp. nov. is montane in distribution, and found between 1,800-2,400 m above msl. It can be differentiated from congeners in showing a low midventral count (16-18); 23 preano-femoral pores in males; five to nine preanal pores in females; and a black and pink banded tail, with two rows of spinose tubercles.

Hamadryad, December 1998. Vol. 23, No.2, pp. 150-156

South Asian Herpetological Specimens of Historical Note in the Zoological Museum, Berlin

Aaron M. Bauer

The history and growth of the south Asian herpetological collection of the Zoological Museum, Berlin (ZMB) up to 1857 are reviewed, and the status of historically important specimens, including types, is evaluated. The most important ZMB specimens derive from the Bloch collection (amassed in the late 1700s), which served as the source for many of the new species described by Schneider in 1799 and 1801. Most of these specimens probably originated from Tranquebar

Continued on page 8.

(Tarangambadi), Tamil Nadu. Additional Specimens from India and Sri Lanka, including type material collected by Nietner, Schmarda, Hoffmeister (all from Sri Lanka), and Peters (from Goa) were described by Lichtenstein and von Martens and by Peters. The majority of the 18th and early 19th century types are still extant in the ZMB collection.

Hamadryad, December 1998. Vol. 23, No. 2 pp. 169-178.

Catalogue of Herpetological Types in the Collection of the Bombay Natural History Society

Indraneil Das and Naresh Chaturvedi

The herpetological types of the Bombay Natural History Society, Bombay (now Mumbai), India, are listed, current to 11 October, 1998. The collection includes historical specimens collected by Major Frank Wall, from India, Myanmar (formerly Burma) and Iran, as well as those described more recently. The annotated list includes original citations, registration numbers, nature of type and present status of every taxa, with additional remarks where necessary. In all, 24 primary and secondary types are present, including 21 name-bearing taxa (including three Anura, three Sauria and 13 Serpentes). The provenance of the types include localities in China, India, Iran and Myanmar (Burma). A list of types that were not located, in addition to those erroneously mentioned as being in the collection, is included.

Hamadryad, December 1998. Vol. 23 No. 2, pp. 179-193.

Conservation Assessment of the Herpetofauna of India - An Overview

Sanjay Molur and Sally Walker

In 1997, a series of Conservation Assessment and Management Plan (CAMP) workshops were conducted to assess the status of selected groups of flora and fauna in India. The CAMP process methodology, developed by the Conservation Breeding Specialist Group of the IUCN/SSC, is participatory, objective, technical and systematic in approach to assess the status of every species. The basis for the assessment is the IUCN Red List categories. A total of 652 taxa were assessed at the workshops for amphibians and reptiles, 202 amphibians and 450 reptiles, and information on distribution and threats to the taxa compiled, the current knowledge regarding species and extent of information, or lack of it, available with respect to species identified, recommendations for future research and future management to improve species prospects made, and an understanding of a species scenario for compiling an action plan for survival of the species gained.

Hamadryad, August 1999. Vol. 24, No. 1, pp. 1-22.

A checklist of chromosome numbers of South Asian Reptiles

Indraneil Das and Hidetoshi Ota

The chromosome numbers of 119 species of reptiles that occur in the south Asian region are listed. The inventory includes three crocodiles, 13 turtles, 54 lizards and 49 snakes. This represents about a fourth of the known species of the subcontinent. Cytogenetic information in many cases offers clues to the detection of cryptic species overlooked by morphological taxonomists.

A synopsis of the reptiles of Gujarat, western India

N.C. Gayen

This paper deals with the reptile fauna of Gujarat State, and is primarily based on a collection made by the author during the Gujarat survey between 1989-1993. Information from earlier collections from Gujarat in the Zoological Survey of India, have also been included, as are data from the literature. To increase the usefulness of the paper, species that have ranges approaching the State have also been included. Altogether, 66 species in 50 genera and 18 families that are known from Gujarat have been dealt with in this report. Keys, diagnostic characters, measurements and distributional notes have been incorporated in the paper. Two squamate species, Hemidactylus triedrus and Lygosoma lineata are being reported for the first time from Gujarat.

Sri Lanka: August, 2001
World Congress of Herpetology

The 4th World Congress of Herpetology will be held in Sri Lanka, in August, 2001. Apart from being widely considered a tourist paradise thanks to its ancient history, natural beauty, splendid beaches and hospitable people, Sri Lanka is also one of the world's great 'herp' hotspots. Located not far from the southern tip of India, the 65,000 km² continental island boasts 200+ species of frogs and 150+ species of reptiles.

Details may be viewed on the special Congress web page, www.4wch.com. We urge you to 'pre-register' with us as early as possible by sending us your name and address by mail or e-mail (possible also through our web page). Pre-registration is free and only expresses an interest on your part to receive further information-it carries no obligation whatsoever. When you pre-register, we will send you free of charge the 4wch promotional brochure with details of how to register, the call for papers, how to get to Sri Lanka, costs and a variety of special offers available only to Congress participants. We will also send you regular updates regarding the Congress.

Pre-Register Today!

Pre-registration & information:
4WCH Promotions Office,
95 Cotta Road,
Colombo 8,
Sri Lanka.
E-mail: admin@4wch.com

Congress organizer/director:
Anslem de Silva,
Faculty of Medicine,
University of Peradeniya,
Peradeniya, Sri Lanka.
Fax: (+94 8) 389106
E-mail: director@4wch.com

Internet: http://www.4wch.com

REPTILE RAP

Vol. 2, No. 1, September 2000
Editor: Sanjay Molur
Editorial Advisor: Sally Walker

REPTILE RAP is a half-yearly Newsletter of the South Asian Reptile Network. REPTILE RAP is published by Zoo Outreach Organisation and Conservation Breeding Specialist Group India as a section of ZOOS' PRINT as a service to the South Asian reptile conservation community as well as conservation actioners and enthusiasts at large.

For communication:
South Asian Reptile Network
Zoo Outreach Organisation
79, Bharathi Colony, P.O. 1683,
Peelamedu, Coimbatore
Tamil Nadu 641004, India
Ph: +91 422 561087, 567567
Fax: +91 422 563269
E-mail: herpinvert@vsnl.com
Web: www.zooreach.org