

Invertebrate Pollinator Network of South Asia



The IUCN/SSC South Asian Invertebrate Specialist Group (S Asian ISG) announces the formation of its first network – *The Invertebrate Pollinator Network of South Asia* (IPNSA). The objectives of this network is:

- To identify all field biologists in South Asia working on invertebrate pollinators and network them to promote conservation particularly through field studies
- To plan and execute activities on invertebrate pollinators such as training programmes, workshops and meetings
- To bring out publications related to invertebrate pollinators for better exchange of ideas and,
- To educate policy makers and general public about pollinators and their conservation.

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The IUCN SSC South Asian Invertebrate Specialist Group (S Asian ISG) formed in 2002 and hosted by Zoo Outreach Organisation, works in conjunction with Invertebrate Conservation and Information Network of South Asia (ICINSA). The main objective of the Specialist Group is to encourage, and assist individuals, institutions and agencies in South Asia to conserve invertebrates. Since inception, South Asian Invertebrate Specialist Group has located the suggested complement of members, conducted a training workshop in Bangladesh, represented IUCN at several local and regional events, and collected information which would aid the working of the specialist group, its members and invertebrate scientists in South Asia.

Invertebrates dominate all life forms numerically. From conservation perspective, all invertebrate groups need equal attention due to the important role they play in the ecosystem. The numerical dominance and vast diversity of invertebrates alone is obstacle enough to invertebrate conservation!

In this regard, the South Asian Invertebrate Specialist Group realized the need to prioritise activities and has decided that one means of prioritization would be by utility. In terms of utility, pollinating invertebrates may be one of the most significant groups since 1) the survival of a multitude of other organisms depends on a working food chain which a decline in pollinating invertebrates surely will affect and 2) reports from many countries in the world indicate that pollinating invertebrates are in serious decline. In South Asia, there are limited studies, therefore few information has been forthcoming.

The Invertebrate Pollinator Network of South Asia will work in collaboration with Dr. Renee M. Borges, Member, IUCN SSC Declining Pollinator Task Force based at the Centre for Ecological Sciences, Indian Institute of Sciences, Bangalore.

We welcome invertebrate pollinator researchers, field biologists and interested individuals from South Asian countries to become a member of IPNSA and to contribute to the conservation of pollinators. For membership details write to the coordinator (icinsa@vsnl.net).

Invertebrate Pollinator Network of South Asia

A project of S Asian ISG and ICINSA
Collaborators: CES/IISc, ZOO and WILD



**First report of *Scutigera* sp. in Great Indian Desert
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The Great Indian Desert covers portions of the four Western States of India, Rajasthan, Punjab, Haryana and Gujarat. It occupies 9% of Indian geographical area and also extends into Pakistan, but nearly 62% is in Rajasthan (Rahmani, 1997). The Thar Desert is almost tree less with dry open grassland (Gupta, 1975) and 58% of the area is under sand dunes (Shankaranarayan, 1988).

During a faunal survey conducted in the Great Indian Desert a *Scutigera* sp. was recorded from different locations namely Rajkot in Gujarat, Jodhpur and Jaisalmer in Rajasthan. This species is also reported from other areas, which do not fall under the Thar Desert viz. Janagarh and Khambhalia (Jamnagar) in Gujarat, Kota and Dungarpur in Rajasthan.

The order Scutigermorpha is represented by one family Scutigeridae. Legs and antennae of *Scutigera* are very long. Adults have 15 pairs of legs. Eyes are large and compound. It is an active, fast moving ground hunter. The literature review reveals the absence of reports on Scutigermorpha. This is the first record of the *Scutigera* sp. from Gujarat and Rajasthan states.

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A note on the behaviour of Pioneer, *Anaphaeis aurota* (Fabricius) (Lepidoptera: Pieridae)

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On 14th December 2002 at about 22 30hrs, while collecting some moths attracted to the CFL light at the Tagore hostel, St. Joseph's College, I saw a Pioneer, *Anaphaeis aurota* (Fabricius) (Lepidoptera: Pieridae) fluttering and then resting near the CFL light. There was no dashing towards the light in this case.

Butterflies, are diurnal, except the crepuscular fliers from the family Hesperidae and some members from the sub-family Satyrinae of Nymphalidae.

Usman (1955 a, b, 1956) had recorded a number of different insects attracted to light at Bangalore. He had recorded only a single butterfly, a Lycaenid, Red Pierrot attracted to light. Shull & Nadkerny (1964,1967) had discussed in detail the various insects attracted to light at Surat Dangs, Gujarat. They recorded two Hesperids, one

Lycaenid, four Nymphalids, five Satyrids and five Pierids attracted to light. Later Sharma & Chaturvedi (1999) recorded Black Rajah, *Charaxes fabius* attracted to light at Tadoba National Park. Subsequently Nair (2001) recorded two Lycaenids and a Satyrid attracted to light at Aralam Wildlife Sanctuary, Kerala. Further Nair (in press) recorded Great Eggfly, *Hypolimnas bolina* and Common Palmfly, *Elymnias hypermnestra* attracted to light near Govt. College Campus, Madappally, Kozhikode, Kerala.

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Banding Polymorphism in *Trachia vittata*

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Land snail species show variations in their shell banding pattern (Rex. 1972; Roth, 1981; Roth and Bogan 1984; Hazel and Johnson. 1990, Davison, 2001) and the genetic basis for such pattern has been worked out extensively in *Cepaea memoralis* (Cain ad Curry, 1963). Polymorphism as a means for survival during natural selection through isolating mechanisms over long period of time has also been attributed (Goldberg & Sevens 1998). Super gene influence and habitat preference may also have evolved in different species of land snails (Hazel & Johnson, 1990) but such studies are unavailable for banding pattern of any land snail species in India.

About 20 aestivating *Trachia vittata* were collected during September and December 2002 from the campus of M S University, Tirunelveli, Tamil Nadu, India. The snails were hand picked carefully, after recording the microhabitat for each specimen collected. The banding pattern on the shells were observed with the help of a hands lens, for grouping as *u* (umbilical), *m* (middle), and *s* (sutural) depending on location. The thickness and length of each band on every shell were also recorded and analyzed in relation to microhabitat (Table 1).

The shells of *Trachia vittata* whitish in brown show variation both in number (0 to 9) and thickness. The bandwidth varies from very thin (ca. 0. 1mm) to broad (>2mm). The bands are broadest at the base, near the margin of the mouth of the shell and gradually taper at the tip. A few shells found exposed to bright sunlight were

Table 1: showing the banding pattern in *Trachia vittata* in relation to different parameters.

No.	Type of banding	Substratum	Height on snail found (m)	Height of plant (m)	Canopy cover %	Orientation
1.	u-3 close thick, m-3 thin 1 broad, s-2 moderate	Bark	1.07	3.04	15	W
2.	u-close bands	Creeper stem modification	0.91	1.83	15	W
3.	u-2 thin, 2 broad, s-2 moderate	Bark	1.37	1.83	10	E
4.	u-1thin, m-3moderate, 1broad, s-1thin	Bark	1.23	1.83	10	W
5.	u-1thin, m-3 moderate, 1broad, s-2 thin	Bark	1.52	1.83	10	W
6.	u-1thin, 2moderate,s-1 moderate	Bark	1.52	3.04	15	W
7.	u-2thin, m-1broad	Bark	1.83	6.1	25	E
8.	u-1thin, m-3moderate,	Bark	1.52	2.44	20	S
9.	u-2 thin, m-1 moderate, s-thin, 1 broad	Bark	0.91	2.44	20	E
10.	u-1 thin, m-1 moderate, 1 narrow, s-1moderate, 1 narrow, 1 broad	Bark	0.31	2.44	20	S
11.	u-4 thin, m-1 broad, 1 moderate, s-1 thin, 1 broad	Bark	1.23	2.74	15	W
12.	u-3 thin, 2 moderate, 1 broad, m-2 broad, s-2 narrow	Bark	1.07	2.74	15	W
13.	u-1 thin,2 moderate m-1 broad, s-2 broad	Bark	1.23	2.74	15	W
14.	u-1 thin, m-2 broad, s-1 broad	Bark	1.52	2.74	15	W
15.	u-1moderate, 1 thin, m-1 broad, s-1 broad	Bark	1.83	2.74	15	E
16.	m-2 thin,s-1 thin, 1 broad	Bark	0.62	1.23	5	N
17.	u-1 thin, m-2 thin, 1 broad, s-1 thin	Bark	0.62	5.18	25	W
18.	u-2 moderate, m-1 broad, 1 thin, s-2 thin	Bark	1.52	3.04	15	S
19.	u-3 thin, m-1 moderate, 2 thin, s-2 thin, 1 broad	Bark	1.23	3.04	15	S
20.	u-2 broad, m-1 broad, s-1 broad, 1 thin	Bark	1.83	3.04	15	W
21.	u-nil, m-4 broad, s-1 broad	Bark	1.83	2.44	15	S
22.	u-3 thin m-4 thin, s-1 broad	Bark	1.52	2.13	10	W
23.	u-4 moderate, m-2 moderate, s-2 broad	Bark	0.31	2.13	10	W
24.	u-2 thin, m-4 broad, s-2 thin	Bark	3cms	2.13	10	W
25.	Plain, bands faded	Bark	1.83	2.13	10	S

u- Umbilicus, m- middle, s- sutural; E-East, W-West, N-North, S-South.

pale probably as an adaptive variation as in the case of *Theba pisana* (Hazel and Johnson, 1990). However the number and the thickness of each band seem to have no relation to microhabitat (Table 1) which is in contrast to the studies on *Theba pisana* where unbanded and fully banded shells have a significant relationship with the microhabitat. The genetically controlled banding patterns of the shell, play a relative role of chance in the evolution of land snail (Cain, 1968). The intra population variability in land snail shells is said to be influenced by natural selection (Goldberg and Steven, 1998). Any adaptive role of shell band pattern in *T. vittata*, to avoid predation by birds, seems less likely, as they were all found in equal proportion and were found at the same microhabitat with a canopy cover of 15-20%. Furthermore, variation in banding pattern in *T. vittata* is irrespective of orientation, the plant height and canopy cover. Adaptive significance of this unique pattern, in *Trachia vittata* is yet to be studied.

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The conference on 'sustainability of pollen and pollinator resources for food and nutritional security for human welfare' was held at Andhra University from 25-27th November 2003. It was jointly organised by the Department of Environmental Sciences, Andhra University, Visakhapatnam, Andhra Pradesh and Palynological Society of India, Thiruvananthapuram, Kerala.

Prof. K.V. Ramanamurthy, Principal, College of Science and Technology, Andhra University inaugurated the conference. He stated that conservation and sustainable utilisation of agro-biodiversity makes a key contribution to food security and poverty alleviation through its application in improving agricultural productivity. Despite Green Revolution, food insecurity continues to prevail in the form of open and hidden hunger. He referred to open hunger as the transient hunger that could be eliminated through food intake and said that hidden hunger related to nutritional deficiencies in the food. Stating that India alone accounted for 300 million malnutrition people, he said it was of utmost importance to produce nutritionally rich food for the total elimination of hunger as health was directly linked to quality of life, economic productivity and educational achievement at individual and national level.

Prof. D. Rajagopal, University of Agricultural Sciences, Bangalore in his keynote address stressed the importance of bee pollination in crop productivity in terms of quantity and quality, the requirement of bee colonies to boost agricultural production and the concern for bee populations in the degrading environment prevailing in agro ecosystems. He further highlighted the need to frame future research trends for improvement in the quality of the environment in order to make India a hunger free country in the real sense. The chief guest Mr. I. Jawahar, State Director, Khadi and Village Industries Commission, Chennai provided details on the structure and functioning of KVIC and its commitment for developing skills in the rural sector for improvement of bee-keeping and allied industries. Dr. E.U.B. Reddi, Head of the Department of Environmental Sciences, Andhra University and Dr. A.J. Solomon Raju, Organising Secretary of the Conference also addressed the audience.

In the Inaugural Session, the Abstracts and Souvenir of the conference was released by Prof. P.V. Bhairavamurthy, Journal of Palynology by Prof. D. Rajagopal and Proceedings of the Conference "Pollination Ecology, Biodiversity and Food and Nutritional Security" by Shri. I. Jawahar.

There were four scientific sessions namely, Pollen Structure and Function (chaired by Dr. Kalyani Datta and co-chaired by Dr. Ashoke Bhattacharya), Plant-Pollinator Interactions and Sustainability (chaired by Prof. S.S. Narwal and co-chaired by Dr. P.K. Mohanty), Bee-keeping and Pollination (chaired by Dr. D. Sundararaju and co-chaired by Mr. P.V. Subba Rao), and Environmental Degradation and Pollinator Crisis (chaired by Dr. Atanu Bhattacharya and co-chaired by Dr. Ashoke Bhattacharya). Several papers were presented in each session. Further, there were special lectures, which were delivered by Prof. D. Rajagopal (Bangalore), Dr. M.M. Rai (Nagpur), Prof. S.S. Narwal (Haryana), Prof. A. Narayanaswamy (Visakhapatnam), Dr. B.A. Daniel (Zoo Outreach Organisation, Coimbatore), Dr. A. Bhattacharya (Kolkata) and Dr. P.K. Mohanty (Bhubaneswar).

THE GENERAL BODY OF THE CONFERENCE MADE THE FOLLOWING RECOMMENDATIONS:

1. Human interventions need to be considered for arresting the decline of pollinators and pollen resources particularly in the Eastern Ghats region.
2. In view of the accelerated environmental degradation and depletion of natural resources in the form of pollinators and pollen, Pollen Banks are required to be established, similar to gene banks. Pollen Banks, besides conserving pollen resources, can also support research programs involving pollinations with viable pollen for regeneration of declining plant species, promote apiculture activity and studies related to monitoring pollen allergy on spatial and temporal scales (Biomedical Research).
3. As a sequel to establishment of Pollen Banks, investigations on pollen molecular biology and biotechnology can be initiated.
4. The Department of Environmental Sciences should be made a nodal center for monitoring Environmental Degradation and Pollution levels in the Visakhapatnam region, monitoring air quality, proportion of pollen grains and spores present in the atmosphere, at least, on an average, monthly basis, considering the currently low levels of pollution in the Visakhapatnam ecosystem, for the health and well being of human populations.
5. An Eco-solution for providing pollinator support for Cashew plantations in the East coast through the use of fly pollinators (which has enhanced yield in cashew plantations in and around Visakhapatnam) needs to be explored.
6. The plant species in the urban ecosystem (herbs, shrubs, trees) are required to be carefully planned and decided prior to planting, taking into consideration the enhancement of pollinator activity.
7. Remote sensing techniques would need to become a part of every Environmental monitoring program be it pollen or pollinator decline, monitoring of Environmental Pollution, etc.
8. Funding agencies need to be advised on the application of remote sensing techniques in the study of pollen and pollinator resources.
9. A working group may be formed to initiate an Action Plan for formulation of research programs.
10. Research work carried out should reach the common man and participatory approaches are required to be explored for dissemination of knowledge generated; for instance educating the urban populations regarding promoting pollinators and their importance through establishment of Home/Kitchen Gardens, parks, etc., in the urban ecosystems.
11. A Journal of Indian Forest and Agro ecosystems should be started to publish research results in the subject of the Conference.
12. A monthly newsletter is required to publish news and views of academic and non-academic persons on environmental issues to create awareness in the general public.

The Department of Science and Technology, Ministry of Environment and Forests, New Delhi, and Andhra Pradesh Council of Science and Technology, Hyderabad funded the conference.

- Dr. A.J. Solomon Raju, Organising Secretary
Department of Environmental Sciences, Andhra University,
Visakhapatnam, Andhra Pradesh

SACNET Formulation Workshop



The SACNET Formulation Workshop was held in Dhaka, Bangladesh, in conjunction with the 3rd Regional Session of the Global Biodiversity Forum (GBF) for South Asia. The Workshop was organised by the Biodiversity Research Group of Bangladesh (BRGB), IUCN Regional Biodiversity Programme Asia, and the Technical Secretariat of BioNET-INTERNATIONAL: the Global Network for Taxonomy. The Workshop was attended by a total of 30 participants: 1-3 national representatives from potential SACNET Member countries i.e. Bangladesh, Bhutan, India, Maldives, Pakistan and Sri Lanka (Afghanistan and Nepal were unable to send representatives); 2 resource persons from the BioNET-INTERNATIONAL Technical Secretariat, UK; 1 person as Acting Programme Officer - Global Taxonomy Initiative (GTI) of the Convention on Biological Diversity (CBD) Secretariat, Montreal, Canada; and representatives from the following potential partner initiatives: IUCN Regional Biodiversity Programme Asia; Centre for Advanced Research in Natural resources & Management (Bangladesh); French Institute, Pondicherry (India); Global Ballast Water Project (National Institute of Oceanography, India); Global Invasive Species Programme; National Botanical Research Institute (India); Swaminathan Research Foundation (India); UNEP-GEF; University of Chittagong (Bangladesh) and Zoo Outreach Organization (India). The costs of the workshop were covered by grants from Commonwealth Science Council, Global Environment Facility (in conjunction with the 3rd GBF) and Swiss Agency for Development and Cooperation.

The goals of the Workshop were to:

- (i) Formulate this detailed proposal for the establishment of a Technical Cooperation Network (TCN) for taxonomic capacity building in South Asia;
- (ii) Develop a shared vision for pooling, sharing and optimising regional expertise, information, records, collections, infrastructure and technologies for the further enhancement of taxonomic capacity in the region;
- (iii) Debate and agree on TCN structures to best strengthen capacity building, collaboration and networking among and between member countries and their relevant institutions;
- (iv) Develop a strategic plan for subregional taxonomic capacity building that meets the needs of national sustainable development programmes and National and Regional Biodiversity Strategy and Action Plans including:
 - (v) Drafting programmes of work to meet the identified taxonomic capacity needs of regional and national development and biodiversity management plans, including (but not restricted to) the required support for implementation of international environmental conventions, for example, the Convention on Biological Diversity (CBD), the International Plant Protection Convention (IPPC) and other initiatives such as the Global Invasive Species Programme (GISP)

Dr. Nicholas King and Dr. Richard Smith (Director and Assistant Director respectively of BioNET-INTERNATIONAL) briefed the delegates on the latest developments in BioNET-INTERNATIONAL including the progress made by existing subregional networks and the wide international support for the role of networks in enabling subre-

gions to become self-reliant in taxonomic needs by building local taxonomic capacity.

Dr. Chris Lyal, Acting Global Taxonomy Initiative (GTI) Programme Officer, Convention on Biological Diversity (CBD) Secretariat, briefed delegates how Parties to the CBD have identified the current inadequacy of taxonomic capacity as an impediment to implementing the CBD in most countries and how the GTI Programme of Work (endorsed in COP decision VI/8, April 2002) identifies the BioNET-INTERNATIONAL networks as appropriate subregional structures and mechanisms for developing taxonomic capacity and services to support implementation of the CBD.

Presentations were made by the potential partner initiatives represented at the workshop. In addition, Dr. Chris Lyal gave a presentation on behalf of the Global Biodiversity Information Facility.

Regional priorities for taxonomic capacity building were identified following presentation by the national representatives of six prospective SACNET countries of national reports on the current status of taxonomic resources in each country.

Recognising the need to optimise the use of taxonomic resources and expertise through pooling and sharing national taxonomic capacity and making their infrastructures, material and manpower resources available to all member countries through a reciprocal arrangement, the Workshop participants unanimously recommended the establishment of a Technical Cooperation Network for the South Asian region, to be known as SACNET, the South Asian network of BioNET-INTERNATIONAL.

The Workshop participants unanimously recommended IUCN Regional Biodiversity Programme Asia, to be the Network Coordinating Institute (NECI). Each Member country also agreed to put forward their country's nomination for a National Coordinating Institute (NACI) and a list of the National Institutions (NIs) which agree to participate in the network during national consultations.

The objectives, work programmes, membership, structure, management and coordination of SACNET, and the mandates of the Coordinating Committee, NECI, National Coordinating Institutions and National Institutions were debated, identified and described. The network will function as a 'Locally Owned and Operated Partnership' (LOOP) of BioNET-INTERNATIONAL: the Global Network for Taxonomy, whereby all decisions on priorities, activities and operations are made by the member country representatives who make up the LOOP Coordinating Committee, the decision-making body of the network.

Five Work Programmes were drawn up to meet the priority needs within each country and South Asia as a whole:

- a) Information and Communication Services;
- b) Human Resource Development (Training);
- c) Curation, Maintenance and Strengthening of Collections;

- d) Development and Application of Appropriate Technologies and Tools; and,
 e) Establishment and Sustainability of the NECI and LOOP.

This Proposal is now presented to member country governments for their approval and endorsement. Once a minimum of three government endorsements have been received by BioNET-INTERNATIONAL's Secretariat, SACNET will become formally operational according to the UNDP guidelines for Technical Cooperation Networks.

RECOMMENDATIONS

The South Asian LOOP Formulation Workshop proposed the following recommendations:

1. TO THE GOVERNMENTS OF COUNTRIES WITHIN THE NETWORK

That they accord proper recognition to the fundamental importance of sound taxonomic capacity and services in their implementation of the Convention on Biological Diversity, within National Development Strategies by:

- 1) Allocating adequate financial and manpower resources and infrastructure to their existing taxonomic centres in accordance with COP Decisions IV/1D, V/9 and VI/8.
- 2) Approving, via the letter of endorsement attached to this document, the establishment and sustaining of a TCN or LOOP of BioNET-INTERNATIONAL in the form of SACNET, a structure designed to enable achievement of South Asian self-sufficiency in the taxonomic services that are needed to support national development programmes and the meeting of national obligations under the CBD and Agenda 21.
- 3) Actively seeking funding support, both public and private, to supplement local inputs to ensure the successful execution of the LOOP's work programmes and enable achievement of South Asian self reliance in taxonomy.
- 4) Creating and maintaining sufficient taxonomic positions to meet national and regional needs, as previously agreed in COP III/10 appendix 2 paragraph 4; COP IV/1.D paragraph 7 Annex paragraph 5; COP VI/8 Program of work Operational objective 2.
- 5) Facilitate obtaining permission for the collection of biological material for taxonomy studies in the region, in accordance with existing national regulations and international agreements (COP VI/24, paragraph 11(l) of the Bonn Guidelines).

2. TO GOVERNMENTS OF DEVELOPED COUNTRIES

In accordance with the *modus operandi* established by BioNET-INTERNATIONAL and facilitated by the LOOP structure, that they support the activities and programmes of the LOOP by establishing strategic alliances to share taxonomic expertise and resources, expedite the repatriation of information and otherwise assist the member countries to achieve South Asian taxonomic self-sufficiency and self-reliance, in accordance with COP Decision IV/1D and VI/8.

3. TO FUNDING AGENCIES AND PRIVATE ENTERPRISE

That they, recognising the critical nature of SACNET's objectives, provide financial, technical, material and other inputs to enable the establishment and subsequent sustainability of the LOOP, the execution of its work programmes, the provision of NECI and NACI services and otherwise assist the LOOP to achieve its technical and development objectives, in accordance with COP IV/1D, VI/8 and VI/17.

On going research projects:

Project on Tiger Moths (Arctiidae: Lepidoptera)

The Department of Science and Technology, Ministry of Science and Technology, Govt. of India, New Delhi, has entrusted Dr. Jagbir Singh, Reader, Department of Zoology, Punjabi University, Patiala to undertake an all India major Research Project on, "Taxonomic Revision of Indian Arctiidae (Lepidoptera)." The project has already begun on 3rd January 2003. The present tenure of the project shall be three years.

Arctiidae is an assemblage of usually beautiful moths, often with moderately broad wings which are conspicuously spotted, banded or otherwise marked with bright colours. Over 400 species are known from all over the Globe. As far as Indian sub-continent is concerned about 450 species are known from this region. This group of moths is of great economic importance as it includes a large number of major and minor pest species. The hairy caterpillars of 'Tiger and footman moths' attacked various agricultural crops, fruit trees, vegetables and shrubs of ornamental value, thus causing a considerable damage. A lot of taxonomic work has been done on this group by Hampson from 1892 to 1919. But no major taxonomic revision has been carried out by any Indian worker on this family, so far. Much knowledge has been accumulated during the last 80 years or so and the group needed thorough taxonomic revision. An effort shall be made to update the status of various taxa of this economically important family of Lepidoptera. Dr. Singh has already been working on this family for the last 10 years. He and his students collected more than 2000 specimens from far-flung-localities of this vast country. Besides this he has worked on family Pyralidae of order Lepidoptera and brought many new taxa to light.

- Dr. Jagbir Singh, Reader

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Studies on Ants of Coimbatore

A comparative study on Ant diversity at the Coimbatore Zoological Park lying next to the Nilgiri Biosphere Reserve and Tamilnadu Agricultural University campus was conducted.

Objectives of the project:

- To assess the invertebrate biodiversity in Coimbatore Zoological Park and Tamilnadu Agricultural University.
- To find out the association between ants and other invertebrates.
- To evaluate the change in diversity due to habitat alteration in different habitat types with reference to ants.

The sampling was carried out for a period of 6 months (December 2002 to May 2003) and the sampling techniques employed were Pitfall traps, Bait traps, Winkler extraction and All Out search method.

The study revealed a total of 43 species in both the areas belonging to five subfamilies viz Formicinae, Myrmicinae, Ponerinae, Dolichoderinae and Pseudomyrmicinae. The Coimbatore Zoological Park (CZP) recorded 30 species belonging to 5 subfamilies and Tamilnadu Agricultural University (TNAU) campus recorded 27 species belonging to 5 subfamilies and 7 species of ants were common to both the area. The common ant species in both the areas are *Camponotus compressus*, *Oecophylla smaragdina*, *Paratrechina longicornis*, *Meranoplus bicolor*, *Solenopsis geminata*, *Crematogaster* sp and *Tetraponera aitkeni*.

P. Jawahar, B.A. Daniel¹ and P. Thangavel,
 Department of Environmental Sciences, TNAU,
¹Zoo Outreach Organization, Coimbatore.

ICINSA: Regional Reports

INVERTEBRATE CONSERVATION AND INFORMATION NETWORK OF SOUTH ASIA: Report of the first meeting of ICINSA - Sri Lanka

Date: 5th December 2003

Venue: National Zoo, Dehiwala, Sri Lanka

A meeting was organized on 5th December at the Dehiwala Zoo, Sri Lanka inviting invertebrate specialists with an objective to meet invertebrate researchers of Sri Lanka and to form a chapter of Invertebrate Conservation and Information Network of South Asia for Sri Lanka. The meeting was attended by 8 people from 3 institutes (4 researchers from 2 Universities and 4 from National zoo) and a member from Bangladesh.

List of participants

Y.N.A. Jayatungo, University of Colombo

R.K. Sriyani Dias, University of Kelaniya

N. Pallewatta, University of Colombo

Preethi Randeniya, University of Colombo

L.P. Jayantha, National Zoo

Dammika Malasinghe, National Zoo

Renuka Bandaranayaka, National Zoo

Ganga Wijesinghe, National Zoo

Nadun Kushan, National Zoo

Md. Abdur Razzaque Mia, Bangladesh

B.A. Daniel, Coordinator, ICINSA, ZOO

Sanjay Molur, WILD Society, India

Sally Walker, Zoo Outreach Organisation, India

The following were the objectives of the meeting.

- To introduce ICINSA, its objectives and activities
- To know the status of invertebrate conservation in the country
- To form a chapter of ICINSA at Sri Lanka
- To identify a local coordinator
- To prioritize invertebrate conservation activities for the next one year

The meeting started at 5.15 pm at the Education Department Conference Hall, Dehiwala Zoo. All the participants introduced themselves and their field of research interest. B.A. Daniel, coordinator/convenor of ICINSA, gave 15 minutes power point presentation and introduced ICINSA, objectives and its activities since it was formed. He emphasized the need for national level networking owing to numerical domination of invertebrates and to promote invertebrate conservation in the region.

The gathering appreciated the effort and agreed to provide support to the new and much needed initiative for the country. Renuka Bandaranayaka, Assistant Director, Dehiwala Zoo asked for the possibilities of a training programme for captive breeding of aquatic invertebrates. Sally Walker, Co ordinator, CBSG, SA suggested inviting specialists on captive breeding of invertebrates to lead a training programme in Sri Lanka. After a brief discussion on other issues such as funding and coordination responsibilities of the network the proposal to form a national level network was put forward. The participants indicated the need for involvement of other invertebrate specialists in the forum to form the network. The coordinator explained the existing challenges

in coordinating a national level meeting in South Asia with special reference to Sri Lanka and explained the very objective of expanding the network by adding more members in it. Nirmalae, Lecturer, Colombo University suggested to spread the idea of forming a national network at Sri Lanka to the invertebrate specialists through email and to identify interested invertebrate specialists who can contribute to its conservation. Rest of the participants agreed to this suggestion.

Nirmalae accepted the invitation of B.A. Daniel to act as the intern coordinator till the responsibility is handed over to an identified person/institute. It was decided that a circular along with specialist membership form be sent to all the participants of the meeting by the end of December 2003 and a data base of invertebrate specialists of Sri Lanka be formed. The priority activities for the year 2004 will be made available during the course of functioning of the national network.

B.A. Daniel thanked all the participants who attended the meeting and Brig. H.A. N.T. Perara, Director, National Zoo, for providing the facility for the meeting.

Bangladesh: BNCI

Report on the ICINSA Meeting in Bangladesh

Date: 11th December 2001

Venue: IUCN Country office, Dhaka

A meeting was held in IUCN Country office Bangladesh on Tuesday, December 11, 2001 with the participation of following personnel

Anisuzzaman Khan, Abdul W. Akonda, Abdullah H. Baqui Anwarul Islam, B. A. Daniel (ICINSA Coordinator, ZOO, India), Belayet Hussain, Golam Rabbi, Harun Chowdhury, M. A. Bashar, Munjurul H. Khan, Monowar Hossain, Mahmudul Ameen, Mohsinuzzaman Chowdhury, Md. Hannan, Olena Reza, Rakibul Haque, Sk. Asaduzzaman Salehuddin Khan

Agenda of the meeting is as follows:

1. Presentation by Coordinator, ICINSA
2. Open discussion
3. Formulation of Bangladesh National Network for Conservation of Invertebrates.

Proceedings of the meeting

Session 1 ICINSA

1. Anisuzzaman Khan, Senior Programme Officer of IUCN-Bangladesh welcomed all participants to the meeting and explained the background of the meeting. Participants self-introduced. Prof. Mahmudul Ameen, Department of Zoology and University of Dhaka chaired the meeting.

2. B.A. Daniel gave an overview of Zoo Outreach Organization. He also presented the current status of invertebrate biodiversity conservation in the region. He described the history of the formation of ICINSA, its goal, objectives and activities with emphasis on Conservation Assessment and Management Plan (CAMP). Dr. Daniel mentioned about their Education and awareness programme and displayed

their publication and educational materials. He distributed their publications to the participants.

Comments/ Discussion by the participants

1. Mr. Abdul Wahab Akonda of the Forest Department briefly commented on the impact of monoculture of plants, rice and other species on the insect population. He shared his experiences on the depletion of butterfly and other pollinating insects in the rural agricultural field and in wetlands areas.

2. Dr. Hannan of Center for Natural Resources and Studies spoke on the current status of invertebrate biodiversity in Bangladesh. He pointed out that the studies and research on invertebrates focusing their conservation were inadequate. Information is not available on almost all the invertebrates excepting few commercially important one. He expressed his concern about the destruction of habitat of insects and butterflies with out knowing their ecological values. Dr. Hannan also expressed his observation that if properly planned some of the invertebrate conservation activities might generate income to the rural people. Dr. Hannan made specific suggestions in favor of captive propagation and re-introduction of butterfly and dragonfly. He suggested to strengthen the capacities for research and conservation activities for invertebrate conservation in Bangladesh.

3. Dr. M.A. Bashar of Department of Zoology, Dhaka University discussed on the taxonomic and ecological aspects of pollinating insects. He described his personal experiences on the needs of invertebrate conservation in Bangladesh. He also mentioned about the significance of various pollinating agents those that were contributing to agriculture and forestry.

4. Pro. Mahmudul Ameen requested Dr. Daniel to tell something about the origin, resource generation and sustainability aspects of Zoo Outreach Organisation and ICINSA initiative.

5. Mr. Anisuzzaman Khan of IUCN-BD described the issue of unsustainable harvest of invertebrates such as corals, mollusks, crabs and echinoderms. He said that information is available on some the economically important species of invertebrates (Lack culture, Apiculture, Sericulture, Crop pests etc.) but this information were not well disseminated. He mentioned that IUCN/ SSC extends scope for the invertebrate specialist to be members of their various Taxa specialist group. Those who are interested in SSC, they should send their cvs to IUCN-BD.

6. Prof. Mahmudul Ameen made some valuable comments on the need of possible orientation for policy makers in regards to ICINSA, and research initiative on food web, invertebrates in marine ecosystem, and impact of monoculture on invertebrate fauna etc.

Session II

Formation of Bangladesh National Network for Conservation of Invertebrates.

Dr. B.A. Daniel gave an introduction on the subject. He shared his experiences on how they initiate the network and what were the initial activities they carried out. Such as the preparation of resource persons directory and checklist of projects and research activities on invertebrate of India. Prof. Mahmudul Ameen, Professor M.A Bashar, Mr. Abdul Wahab Akonda, Dr. Monwar Hossain and Dr. Hannan took part in the discussion. After detailed discussion it was agreed to form the Bangladesh Unit of the network and finalize the goal, objectives and method of operation through a peer group workshop.

The following decisions were taken by the meeting

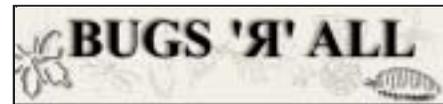
1. The Bangladesh National Network for Conservation of Invertebrates(BNCI) is unanimously formed. This Network will be a partner of ICINSA.
2. The participants present will be the members of BNCI.
3. IUCN Bangladesh will initially act as the focal point for this network and Mr. Anisuzzaman Khan will be the National Coordinator for BNCI
4. BNCI will work for identification & documentation of invertebrate specialist / researcher / interested person / on going projects.
5. BNCI will identify the gaps and needs for invertebrate research in Bangladesh

6. BNCI will work for preparation of proposals to make a national checklist of invertebrate
 7. BNCI will facilitate training on taxonomy and fixation of standardized suitable methodology for invertebrate research in Bangladesh.
 8. BNCI will collect literature and review and prepare abstract for dissemination
 9. BNCI will work for documentation of butterfly trade and identify the threats etc.
 10. BNCI will organize workshop of Peer Group
 11. BNCI will work for awareness raising programme for invertebrate conservation.
 12. BNCI will initiate small projects.
 13. BNCI will prepare and publish Invertebrate Specialist Directory.
- Prof. Mahmudul Ameen chaired both the session. Mr. Mohsinuzzaman was act as the Rapporteur. The meeting was adjourned with the vote of thank from the chair.

Prepared by **Anisuzzaman Khan and Mohsinuzzaman Chowdhury**, IUCN Bangladesh



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Advisors: Sally Walker & S. Molur.
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