Report on Global Conference on Entomology, Thailand: Aspects of insect conservation

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A Global Conference on Entomology was organized by Century Foundation, Bangalore, India in collaboration with Chiang Mai University at Chiang Mai, Thailand from 5-9 March 2011. The objective was exchange information on recent advances in entomological research and development, and to bring together the international scientific community involved in the study of insects. During the conference which was attended by researchers and scientists from 34 countries, 17 topics were covered. The topics were: systematics, Insect ecology, nature protection, landscape management, insect conservation - in a changing environment, agricultural entomology, genetically modified organisms, forest entomology, taxonomy and zoo-geography, medical and veterinary entomology, insect genetics, neurobiology and toxicology, physiology, behaviour, Integrated Pest Management (IPM), parasitic mites, regional and international issues, advances in apiculture, cultural entomology and soil entomology. The author represented the IUCN SSC South Asian Invertebrate Specialist Group and Zoo Outreach Organsation, India and presented the activities of Invertebrate Conservation Sub-Committee ICSC and activities of South Asian Invertebrate SG.

Prof. Michael Samways, Chair, Invertebrate Conservation Sub-Committee IUCN SSC, gave the key-note address entitled "Designing future landscapes for conservation". He highlighted that insects invariably feature strongly in many aspects of functional biodiversity as evidenced by its high connectivity in many food webs and its biomass. Insects and other invertebrates should be considered if we are serious about conserving biodiversity. These animals would span the spectrum from rare and threatened ecological specialists through to widespread and common generalists. Inclusion of all these ecotypes, from specialist pollinators to soil generating detritivores, means that insects must be mainstreamed into all aspects of conservation of functional biodiversity and ecosystem.

During the conference ten plenary lectures were delivered as follows: Dr. M. Eric Benbow, University of Dayton, USA on forensic entomology, Prof. Siriwat Wongsiri, Maejo University, Thailand about beekeeping and climate change and Prof. Boris R. Krasnov, Ben-Gurion University of Negev, Israel on ecology of haematophagous arthropods, Dr. V.S. Chauhan, Director ICGB, New Delhi on vaccines against malarial parasites, Prof Michael Samways, Stellenbosch University, South Africa on model organisms for insect conservation research, Dr. Rajinider Kumar Saini, ICIPE, Kenya on integrated control of arthropod vectors, Dr. E.I. Jonathan, Director, Tamil Nadu Agricultural University, India on Classical biocontrol for pest management, Prof. You-Chan Bae, Korea on classification of culicoides biting midges, and Dr. H.B. Singh, Bharath Hindu University on biological control of plant hoppers.

Common Picture Wing *(Rhyothemis variegata).* Photo credit Francy Kakkassery

GCE 2011 received 603 abstracts including invited talks of which 334 were oral papers and the remaining 269 as posters. There were concurrent session in which the author chaired a technical session on the first day on systematics, taxonomy and zoo geography. This report focuses mainly on nature protection, landscape management and insect conservation for which the GCE 2011 received 27 oral papers and 3 posters. As part of this a plenary lecture was given by Prof. Michael Samways entitled 'Dragonflies: model organisms for insect conservation research'. Dragonflies have a high profile as they are large and charismatic, familiar to most people, and indeed are significant organisms culturally in East Asia. The threats facing them are as great as any other insect group. Being freshwater dependent, they have been used for assessing freshwater catchment quality. Detailed studies have emphasized the importance of identifying key threats to dragonflies and directly addressing them. Where this has been done, for example, by removal of invasive alien trees along river banks, the recovery of the dragonfly assemblage can be quite remarkable, even of narrow range endemic species. Furthermore, as with other insect groups, threats can be multiple, with adverse synergism between the impacts of habitat loss with that of climate change, for example. Dragonflies are highly sensitive to climate change, with major geographical range shifts having taken place in Europe. Such range shifts are more difficult to detect in geographical areas subject to the effects of shorter-term climatic cycles, where adaptation by movement to optimal conditions takes place. Dragonflies are now being mainstreamed into freshwater quality assessments across the world, as they are relatively easy to identify, and these assessments can be done by relative amateurs at the sensitive species level rather than at higher taxonomic levels.

GCE 2011 received abstracts on a range of topics viz., spiders as bio-control agents and their diversity, bioacoustic monitoring of orthoptera, conservation of entomophage biodiversity, ecotourism and giant crickets, monitoring the dynamics of carabid beetles, design and management of ecological networks, agroforestry and pest management, insect interactions, predictive modeling and habitat suitability analysis, survey of insects, conservation of butterflies, radio-tracking of dragonflies, biodiversity of cicadidae, impact of land

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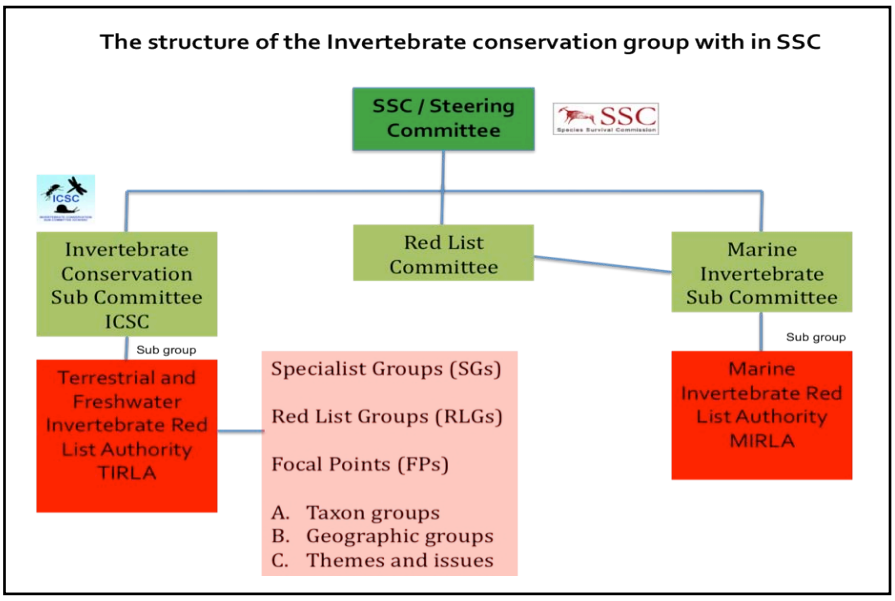
use changes on dung beetle diversity, use of weaver ants in tropical agriculture, integrating nature conservation, landscape management and biological control, insect fossils, insects as pollinators, butterflies as ecological indicators, effects of forest conversion on species richness, management of invasive ants, effects of forest fragmentation on pollination, and tree hole-a bonsai ecosystem.

The author gave a presentation on the activities of ICSC and its network. Invertebrates are the most important component of compositional biodiversity essential to the functioning of the planet. It has been projected that, due to various ongoing threats and particularly climate change, a quarter of all invertebrate species may become extinct in the next few decades. To address the enormous shortcomings in invertebrate conservation, Invertebrate Conservation Sub-committee ICSC was tasked with charting a way forward to bring cohesiveness to the invertebrate conservation community.

The Invertebrate Conservation Sub-Committee (ICSC), one of the sub committees of Species Survival Commission, was established by IUCN/ SSC in 2005 under the leadership of Prof. Michael Samways being the Chair of ICSC (also member of the Steering committee) to tackle the enormous challenges of how to manage conservation action for numerically dominating taxonomic grouping on Earth. The function of the ICSC is to provide a structure and guidance for a pool of expert knowledge and practical expertise on invertebrate biology, threat assessments and conservation management, with special reference to the SSC Strategic Plan.

At present the ICSC has the following composition:
Terrestrial Invertebrate RLA (Co-ordinator) Justin Gerlach
Red List Committee (Representative) Viola Clausnitzer
Red List Technical Working Group (Representative) Mary Seddon

Butterfly Specialist Group (Chair) Scott Black
Dragonfly Specialist Group (Chair) Viola Clausnitzer
Freshwater Crab and Crayfish (Co-Chairs) Neil Cumberlidge, Keith Crandall
Grasshopper Specialist Group (Chair) Axel Hochkirch
Mollusc Specialist Group (Chair) Mary Seddon



South Asian Invertebrate Specialist Group (Co-Chairs) B.A. Daniel, Ather Rafi
Coral Specialist Group *(Chair) David Obura (of MIRLA/MCSC)*

Bumble Bee Red List Group (SA – Specialist Advisor): Ed Spevak (shortly to replaced by a full SG)
European Saproxylic Beetle Red List Group (SA): Keith Alexander
Ants (SA): CarstenBrühl
Tiger beetles (SA): Dave Pearson
Scarab beetles (SA): SachaSpector

Invertebrate Pollinators (SA) Peter Kevan
Invertebrate ecological Function
Soil and Litter Invertebrate (SA) Justin Gerlach
Terrestrial Invertebrate Exploitation (SA) Tim New
Captive Breeding of Invertebrates (SA) Paul Pearce-Kelly
Cave Invertebrate (SA)
Island Invertebrate (SA)

Australasian Invertebrates (SA) Tim New
European Invertebrates (SA): JürgenOtt
North American Invertebrates (SA) Jay Cordero
Southern African Invertebrates (SA) Michael Samways
Western Indian Ocean Invertebrates (SA) Justin Gerlach

The structure of the ICSC addresses the following arenas:

- Networking
- Rapid invertebrate species assessment approaches
- Assessments and indicators
- Addressing key threats
- Raising awareness on the role of invertebrates in providing ecosystem services

South Asian Invertebrate Specialist Group (SAISG): This SG is hosted by Zoo Outreach Organisation, Coimbatore, India and the SG covers eight South Asian countries namely Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. The Objectives of SAISG are to assist individuals, institutions and agencies in South Asia to promote scientific study and conservation of invertebrates; to extend support for other SGs and SAs and to accomplish ICSC's objectives. The SAISG has sub-networks to cover a wide range of invertebrates of pollinators, aquatic invertebrates, agro-biodiversity, terrestrial, and under-soil invertebrates.

The SAISG Assisted Species programme biodiversity unit to carry out the Eastern Himalayas Freshwater Biodiversity Assessment project and assessed 126 molluscs and 150 odonates. At present it is involved in assessing odonates and mollusc species of Western Ghats. For more information about SSC and Invertebrate conservation please log on to http://www.iucn.org/about/work/programmes/species/about_ssc/governance/.

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