1. A PRELIMINARY CHECKLIST OF THE FISHES OF YERCAUD, SHEVROY HILLS, EASTERN GHATS, TAMIL NADU, SOUTHERN INDIA.

(Cite as: M. Eric Ramanujam; JoTT, Vol 7, No 9 (2015).03247.7595-601)

Abstract
Twenty-one species of fishes were recorded in Yercaud Lake and the surrounding hill streams during five surveys conducted from May 2011 to August 2012. Of the 21 species, 19 were recorded in Yercaud Lake, 10 in the stream leading to Kiliyur Falls and six and eight respectively in the Manjakuttai and Puthur hill streams. One translocated species (Gibelion catla) and two exotics (Poecilia reticulata and Oreochromis mossambicus) were recorded. Only one species Cirrhinus cirrhosus is listed as threatened in the IUCN Red List of Threatened Species.

Keywords: Checklist; Eastern Ghats; freshwater fishes; Shevroy Hills; Yercaud Lake.

2. TREE SPECIES DIVERSITY IN THE EASTERN GHATS OF NORTHERN ANDHRA PRADESH, INDIA


Abstract
The present study was conducted to analyze tree species diversity in the tropical forests of the Eastern Ghats of northern Andhra Pradesh, India. A total of 270 species of trees (≥15cm girth at breast height) pertaining to 177 genera belonging to 55 families were recorded. Among the 270 species, 141 species were observed to be common, 78 were occasional and 51 species were rare in the study area. Fabaceae was the dominant family with 33 species followed by Rubiaceae with 15 species and Malvaceae, Moraceae and Phyllanthaceae with 13 species each. The genera with the highest number of species include Ficus (12 species), Diospyros (8 species),
Albizia and Grewia (6 species each), Acacia and Bauhinia (5 species each). Forty-five percent of the species were indigenous. This illustrates the diversity of the tree species in the studied area of the Eastern Ghats and also emphasizes the need for their conservation.

**Keywords:** Andhra Pradesh; Eastern Ghats; India; tree diversity; tropical forests; vegetation.

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### 3. OCCURRENCE OF THREE WESTERN GHATS ELEMENTS IN DRY EVERGREEN FOREST OF GINGEE HILLS, EASTERN GHATS OF TAMIL NADU, INDIA.


**Abstract**

The botanical exploration of Gingee hills, Tamil Nadu, India resulted in collection of three species viz., Diospyros affinis Thwaites, Drypetes porteri (Gamble) Pax & K. Hoffm. and Premna wightiana Schauer have showing their extended geographical distribution in Eastern Ghats. This study revealed about the disjunct distribution, ecology and the present status of these three species from the Eastern Ghats.

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### 4. TREE DIVERSITY IN THE TROPICAL DRY FOREST OF BANNERGHATTA NATIONAL PARK IN EASTERN GHATS, SOUTHERN INDIA


**Abstract**

Tree species inventories, particularly of poorly known dry deciduous forests, are needed to protect and restore forests in degraded landscapes. A study of forest stand structure, and species diversity and density of trees with girth at breast height (GBH) ≥10 cm was conducted
in four management zones of Bannerghatta National Park (BNP) in the Eastern Ghats of Southern India. We identified 128 tree species belonging to 45 families in 7.9 hectares. However, 44 species were represented by ≤ 2 individuals. Mean diversity values per site for the dry forest of BNP were: tree composition (23.8 ±7.6), plant density (100.69 ± 40.02), species diversity (2.56 ± 0.44) and species richness (10.48 ± 4.05). Tree diversity was not significantly different (P>0.05) across the four management zones in the park. However, the number of tree species identified significantly (P<0.05) increased with increasing number of sampling sites, but majority of the species were captured. Similarly, there were significant variations (p<0.05) between tree diameter class distributions. Juveniles accounted for 87% of the tree population. The structure of the forest was not homogeneous, with sections ranging from poorly structured to highly stratified configurations. The study suggests that there was moderate tree diversity in the tropical dry thorn forest of Bannerghatta National Park, but the forest was relatively young.

**Keywords:** Diameter at breast height - diameter class distribution - species composition - species richness - tree allometry - tree density

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5. **ANTIMICROBIAL ACTIVITIES OF 2-PROPANOL CRUDE EXTRACT FROM LICHEN *PARMOTREMA TINCTORUM* (DESPR. EX. NYL.) HALE, COLLECTED FROM EASTERN GHATS, INDIA**
(Cite as: Anjali Devi Bodicherla, Satish Mohabe, Madhu Reddy Araveeti and Sanjeeva Nayaka. Research gate, January 2015.DOI: 10.5943/cream/5/3/1)

**Abstract**
The present study was conducted to evaluate the in vitro antimicrobial activity of 2-Propanol extract of *Parmotrema tinctorum* (Despr. ex Nyl.) Hale, against each ten bacterial and fungal pathogens. Secondary compound of the species was extracted using Soxhlet apparatus and antimicrobial activity was carried out by using Bauer-Kirby disc diffusion method. The extract was found more effective against ten bacterial and eight fungal pathogens. The highest zones of inhibition in bacterial pathogens were noted against *Escherichia coli* (14.66 ± 0.57), Bacillus subtilis (13.0 ± 2.99), *Salmonella abony* (12.33 ± 2.51) and *Corynebacterium rubrum* (11.33 ± 0.57) followed by lowest inhibition zones were recorded in *Streptococcus pyogenes* (9.66 ± 0.57), *Bacillus*
cereus (8.66 ± 1.15) and Streptomycin was taken as standard control found more effective against all the bacterial pathogens. In case of fungal pathogens the highest zones of inhibition were noted against Aspergillus flavus (10.0 ± 1.0) followed by Colletotrichum falcatus, Fusarium oxysporum and Penicillium chrysogenum (7.33 ± 0.57 each), Trichoderma lignorum (7.0 ± 1.53) and Fusarium moniliforme (6.0 ± 5.2) while commercially available synthetic antifungal drug Ketoconazole was taken as standard control found more effective against eight fungal pathogens. The study revealed that extracts obtained from P. tinctorum are having potential compounds which in turn useful to control human pathogenic microorganisms.

6. REACTION TEXTURES AND METAMORPHIC EVOLUTION OF SAPPHIRINE-SPINEL-BEARING AND ASSOCIATED GRANULITES FROM DIGUVA SONABA, EASTERN GHATS MOBILE BELT, INDIA.


Abstract

The Diguva Sonaba area (Vishakhapatnam district, Andhra Pradesh, South India) represents part of the granulite-facies terrain of the Eastern Ghats Mobile Belt. The Precambrian metamorphic rocks of the area predominantly consist of mafic granulite (±garnet), khondalite, leptynite (±garnet, biotite), charnockite, enderbite, calc–granulite, migmatic gneisses and sapphirine–spinel-bearing granulite. The latter rock type occurs as lenticular bodies in khondalite, leptynite and calc–granulite. Textural relations, such as corroded inclusions of biotite within garnet and orthopyroxene, resorbed hornblende within pyroxenes, and coarse-grained laths of sillimanite, presumably pseudomorphs after kyanite, provide evidence of either an earlier episode of upper-amphibolite-facies metamorphism or they represent relics of the prograde path that led to granulite-facies metamorphism. In the sapphirine–spinel-bearing granulite, osumilite was stable in addition to sapphirine, spinel and quartz during the thermal peak of granulite-facies metamorphism but the assemblage was later replaced by Crd–Opx–Qtz–Kfs-symplectite and a variety of reaction coronas during retrograde overprint. Variable amounts of biotite or biotite+quartz symplectite replaced orthopyroxene, cordierite
and Opx–Crd–Kfs–Qtz-symplectite at an even later retrograde stage. Peak metamorphic conditions of c. 1000°C and c. 12 kbar were computed by isopleths of $X_{Mg}$ in garnet and $X_{Al}$ in orthopyroxene. The sequence of reactions as deduced from the corona and symplectite assemblages, together with petrogenetic grid and pseudosection modelling, records a clockwise $P$–$T$ evolution. The $P$–$T$ path is characteristically $T$-convex suggesting an isothermal decompression path and reflects rapid uplift followed by cooling of a tectonically thickened crust.

**Keywords:** sapphirine–spinel-bearing granulite, corona and symplectite textures, phase equilibria modelling, high-pressure – ultrahigh-temperature metamorphism, Eastern Ghats Mobile Belt, India

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7. FLOWER-INSECT INTERACTIONS AND BIODIVERSITY IN THE EASTERN GHATS FOREST, INDIA

(Cite as: Jacob Solomon Raju Aluri. 2015. DOI: 10.4172/2157-7625.S1.020)

**Abstract**

Insects visit flowers for their sustenance. They use pollen as protein source and nectar as energy source. The pollen they inevitably lose in going from flower to flower is important to plants for pollination. Different insects have different pollinating abilities depending on the floral density and floral morphological and functional characteristics. The flowers appear to have led to the evolution of certain traits in them for mutualistic benefits. These flowers appear to have led to the evolution of certain traits in them for mutualistic benefits. Perennial, annual and ephemeral plants play a vital role in sustaining insects. These plants provide food to insects throughout the year. Among different plants, perennials, especially trees are very important to sustain insect diversity. In return, plants receive the benefit of self or cross-pollination. Among the insects observed on different plant species that flower at different times of the year. The field work coupled with lab work indicated that both generalist and specialist pollination syndromes exist. Certain plants use all available insects for pollination while certain other plants have specialized floral traits that are adapted to particular classes of insects. In the Eastern Ghats forest, dry season is very crucial for the local insects due to the dearth of forage, this is because a few tree species flow plant species for the structural and functional integrity of the ecosystem. Further, in the obligately outcrossing endemic and endangered plant species have been encountered and the
categories of insects for their fruit/seed set. The studies indicated that insect-flower interactions mostly relationships are the basis for the continued existence of biodiversity in this forest ecosystem.

8. CONSERVATION AND MANAGEMENT OF BIODIVERSITY OF DARINGABADI HILL FOREST OF EASTERN GHAT, ODISHA

Abstract
Biodiversity plays an important role in the sustenance of mankind. Loss of Bio-resources will lead to extinction of living beings. The health of natural environment depends upon continuing diversity, if one species is lost from the ecosystem, then all the other species of ecosystem are affected. Our earth has already witnessed three mass extinctions in the past and another is on the way. This bio-resources which are not only key to our future food security but also our healthy living and sustenance. It has been estimated that there exists about 5-30 million species on our earth of these only 1.5 million species have been identified. These include 3 lakh species of green plants and fungi, 8 lakh species of insects, 40,000 species of vertebrates and 36,000 species of micro-organisms. Distribution of bio-diversity is not uniform over the earth surface, some regions are rich in biodiversity, while other regions are poor in biodiversity. India has a rich and varied heritage of biodiversity encompassing a wide spectrum of habitats from tropical rain forest to alpine vegetables and from temperate forest to coastal wetlands. Loss of biodiversity in Daringbadi Hill Forest is a burning problem. The causes are deforestation, climatic change, shifting cultivation, soil erosion, infiltration, encroachment, forest fire and grazing etc. The current rate of extinction demands conservation, strategies of bio-diversity by using in situ and ex-situ method.

9. ECOLOGICAL INTEGRITY AND ENVIRONMENTAL PROTECTION FOR VIJAYAWADA REGION – SCATTERED EASTERN GHATS
(Cite as: Srikonda Ramesh and K. Kaplana. International Journal of Sustainable Built
**Abstract**

The ecological integrity is widely discussed as a new concept by several ecologists and environmentalists. A consensus in this regard is yet to be derived for its definition. Human intervention for its developmental activities results in several environmental changes that enhance some species, ecosystem and ecological processes while at the same time brings irrecoverable damage to the Planet Earth. It is essential and crucial to focus research and scientific analysis and establish awareness and education to provide a means of distinguishing responses between improvements in quality of ecosystem and those of damages. The focus of this paper is to emphasize the organized urban planning at a macro level and the architectural design interventions at the micro level in Vijayawada where eco – sensitivity exists with due consideration to ecological integrity and environmental protection. The ecological dynamics of continuity indicated that hillocks of Vijayawada region are a part of Eastern Ghats. The study is to elaborate that the landscape, eco-patches and its connectivity establishes a unique corridor to strengthen ecological system and as a green corridor to Vijayawada city to fulfill the demands of the city and also to create the ecological patch connectivity to scattered Eastern Ghats especially in the Krishna-Guntur region which connects the Nallamala hills through Kondapalli hill toward Southern side and to the Papikondalu at the northern side of Eastern Ghats. These corridors may even support environmental conservation and provides rural edge in urban context and functions as lung spaces to ease the heat island effect of urban settlement. So the explicit development controls have been derived to guide and organize at micro level so as to achieve the macro level considerations of ecological integrity.

**Keywords:** Development; Landscape; Patches; Modules; Connectivity

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10. STATUS AND CONSERVATION OF MONTANE HERPETOFAUNA OF SOUTHERN EASTERN GHATS, INDIA

(Cite as: S.R. Ganesh¹ and M. Arumugam. ZOO’s PRINT, Volume XXX, Number 9 September 2015)
Abstract
We examined the conservation status levels of amphibians and reptiles inhabiting the Southern Eastern Ghats hill range, peninsular India. We surveyed the herpetofauna in the montane zones (> 900 m asl) of four hill ranges namely Jawadi, Shevaroys, Kolli and Sirumalai. For each species recorded by us in the field, we allocate an appropriate form of rarity among the eight forms defined in literature based on distribution, habitat use and population size. Based on our results, we highlight the potential of Southern Eastern Ghats to harbor a characteristic herpetofauna which warrants better research and conservation.

11. DISTRIBUTION OF ADIANTUM CAPILLUS-VENERIS L. (ADIANTACEAE) IN INDIA
(Cite as: Parthipan, M. and A. Rajendran. ZOO’s PRINT, Volume XXX, Number 9 September 2015)

Abstract
The Adiantum capillus – veneris L., so far reported in Gorakhpur - Eastern Uttar Pradesh and Palni hills, Sambavavadakarai, Tenkasi taluk, Tirunelveli District of Western Ghats. First time reported in Yercaud hills of Eastern Ghats.

12. LANTANA CAMARA AND BUTTERFLY ABUNDANCE IN AN URBAN LANDSCAPE: BENEFITS FOR CONSERVATION OR SPECIES INVASION?
(Cite as: Swarnali Mukherjee† / Soumyajit Banerjee‡ / Parthiba Basu‡ / GoutamK. Saha‡ / Gautam Aditya†, Volume 34, Issue 4, Pages 309–328, ISSN (Online) 1337-947X, DOI: 10.1515/eko-2015-0029, December 2015)

Abstract
Urban landscapes host a range of diverse plants that, in turn, facilitate maintenance of different species of pollinators, including butterflies. In this context, the importance of
Lantana camara, an invasive plant species, was assessed highlighting its role in maintenance of butterfly diversity, using Kolkata, India as a study area. Initial study revealed consistent presence of L. camara in both urban and rural sites with at least 25 different butterfly species association. The proportional relative load and the preferences of butterfly species for the each plant species were inclined towards L. camara. Irrespective of the sites, the diurnal and seasonal variations in the butterfly species abundance varied with the flowering pattern of L. camara. A positive correlation of different butterfly species with the flowering time and number of L. camara was for all the sites. The segregation of the L. camara associated butterfly species was made following discriminant function analysis using the extent of flower density of L. camara as explanatory variable. Despite being an invasive species, it is apparent that L. camara can be a prospective host plant that facilitates sustenance of butterflies in both urban and rural sites. Thus, existence of L. camara in urban gardens and forests may prove beneficial in sustenance of the butterflies.

**Keywords:** Lantana camara; butterfly; flower density; urban greening; conservation

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13. FORMATION AND EVOLUTION OF A PROTEROZOIC MAGMATIC ARC: GEOCHEMICAL AND GEOCHRONOLOGICAL CONSTRAINTS FROM META-IGNEOUS ROCKS OF THE ONGOLE DOMAIN, EASTERN GHATS BELT, INDIA


**Abstract**

Geochemical data and U–Pb zircon results are presented for the intrusive meta-igneous rocks of the Ongole domain, a granulite-facies terrain of the Eastern Ghats Belt in India, with the aim of inferring the tectonic setting and the timing of their formation. Geochemical data suggest that the intrusive meta-igneous rocks (mafic granulites and charnoenderbites) possess trace and rare earth element composition that are typical of magmatic arcs. They are subalkaline, enriched in light rare earth elements and large ion lithophile elements and depleted in heavy rare earth elements and high field strength elements like Nb, Ta and Ti. These characteristics indicate that the primary magmas of these rocks were derived by partial
melting of a depleted mantle wedge that had been metasomatized by a slab component. Zircon grains collected from five charnoenderbites are large and euhedral to subhedral and display fine-scale oscillatory growth zoning in CL images, implying a magmatic origin. The grains frequently show narrow-to-broad unzoned overgrowths, implying a metamorphic origin. The oscillatory-zoned cores yield Paleoproterozoic concordia ages of ca. 1,750–1,710 Ma, interpreted as the time of magma emplacement. The unzoned overgrowths yield very late Paleoproterozoic ages of ca. 1,630–1,600 Ma, interpreted as the timing of metamorphism. An enderbite showing both magmatic and metamorphic concordia ages of ca. 1,605 Ma points to the existence of syn-metamorphic intrusions. Together, the presented geochemical and geochronological evidence suggests that the Ongole domain was a magmatic arc near the Indian continent during the Paleoproterozoic. Subsequently, the rocks were metamorphosed during the late Paleoproterozoic, and the terrain was accreted to the Indian craton during the early Mesoproterozoic. The formation and growth of the Ongole domain magmatic arc through subduction-related accretion can be correlated with the growth of Columbia (1.8–1.2 Ga), but its accretion to the Indian craton is apparently unrelated to the formation of any supercontinent on a global scale.

**Keywords:** Eastern Ghats Belt Ongole domain Geochemistry LA-ICP-MS zircon geochronology Columbia supercontinent

14. FOOD HABITS OF INDIAN GREY HORNBILL OCYCEROS BIROSTRIS IN SATHYAMANGALAM FOREST DIVISION, EASTERN GHATS, INDIA.

(Cite as: Santhoshkumar, E.;Balasubramanian, P. 2015. Journal of the Bombay Natural History Society. 111: (2) 90–97 (2014). (Journal Article)

**Abstract**

The foraging ecology of Indian Grey Hornbill *Ocyceros birostris* was studied in Sathyamangalam Forest Division, Eastern Ghats, from 2006 to 2008. Its diet in the breeding season was assessed by 720 hours of direct observations of food deliveries to 10 different nest inmates and by nest midden analysis. Observations at nest holes revealed that males visited nests an average of 16 times per day, and the food items delivered to the nest inmates (female
and chicks) included both plant (63.7%) and animal matter (36.3%). Fleshy fruits of 14 species were delivered, and the animal matter was mainly insects (99%). Seeds collected from the nest middens on analysis showed the presence of 26 fruit species of 16 plant families. Food habits of this hornbill during the non-breeding season were assessed by walking along transects and observing foraging activities. Of the 3,086 feeding observations obtained, 83% were on fruits and the rest were on leaves (8.8%), insects (7.7%), and flowers (0.5%). Of the 38 fruit species eaten, *Ficus* spp. constituted 25.3% of the non-breeding season fruit diet. In all, fruits of 41 species of 21 families were recorded in the diet. The study revealed that both fig and non-fig species are important for the survival of the Indian Grey Hornbill in the Eastern Ghats.

15. SPECIES RICHNESS OF MONTANE HERPETOFAUNA OF SOUTHERN EASTERN GHATS, INDIA: A HISTORICAL RESUME AND A DESCRIPTIVE CHECKLIST.

(Cite as: Ganesh, S. R. and M. Arumugam. 2016. Russian Journal of Herpetology. 23 (1): 7-24. [snakeranglerr@gmail.com](mailto:snakeranglerr@gmail.com)

Abstract

We examined the amphibian and squamate reptilian species richness of Southern Eastern Ghats based on a long term-field survey with nearly two years of field days. We surveyed high elevation slopes (>900 m a.s.l.) of four select hill ranges namely Jawadi, Shevaroys, Kolli, and Sirumalai hills which comprehensively represented full geographical and spatial coverage. We present a descriptive species-account with basic morphological data supported by voucher photographs. We summarize the history of herpetological explorations in this landscape and also comment on some of the major previous works in the region. Our study revealed the presence of 62 species in the montane zones, including 32 (51%) new records involving all the three target taxa (frogs, lizards and snakes) and all the four hill ranges that testify the poor knowledge on the region’s herpetofauna till date. Lastly, we remark on the unresolved taxonomic status of some species recorded in the present study. We recommend specimen-based revisionary works in the nearby Western Ghats, where such taxa are much more diverse, to enable taxonomic studies in this region.
**Abstract**

Metapelitic rocks from the northern Prince Charles Mountains–East Amery Ice Shelf region of the Rayner Complex, East Antarctica, record high-temperature reworking during Cambrian times. Calculated metamorphic phase diagrams for rocks with varying chemical compositions and mineral assemblages suggest that peak temperatures were 800–870°C at pressures of 5·5–6·5 kbar. However, Cambrian-age high-$T$ reworking is patchy and is recorded only in some locations, with other areas recording pristine early Mesoproterozoic–Neoproterozoic assemblages formed during the c. 1000–900 Ma Rayner Orogeny. The spatial distribution of reworking may indicate that the comparatively anhydrous residual rock compositions inherited from the Rayner Orogeny were relatively inert to reworking during the Cambrian. Domains that record Cambrian reworking conceivably underwent hydrous retrogression at the end of the Rayner Orogeny and were therefore comparatively reactive during reheating in the Cambrian. High-$T$ reworking during the Cambrian has previously been recognized in the Prydz Bay region at the margin of the Rayner Complex, but not in the northern Prince Charles Mountains. The Eastern Ghats Province in India, which was formerly contiguous with the Rayner Complex, preserves a similarly enigmatic record of Cambrian geochronology, suggesting that the Rayner–Eastern Ghats terrane as a whole may have experienced selective reworking during the Cambrian. The geodynamic setting for the formation of this thermal regime is not well understood, but the attainment of high crustal temperatures may have been facilitated by a reduced capacity for thermal buffering, arising from limited partial melting within a previously dehydrated crustal column.
Keywords: Gondwana, HTLP metamorphism, monazite geochronology, Rayner Complex, Thermocalc

17. CRITICAL ANALYSIS OF FOREST DEGRADATION IN THE SOUTHERN EASTERN GHATS OF INDIA: COMPARISON OF SATELLITE IMAGERY AND SOIL QUALITY INDEX


Abstract
India has one of the largest assemblages of tropical biodiversity, with its unique floristic composition of endemic species. However, current forest cover assessment is performed via satellite-based forest surveys, which have many limitations. The present study, which was performed in the Eastern Ghats, analysed the satellite-based inventory provided by forest surveys and inferred from the results that this process no longer provides adequate information for quantifying forest degradation in an empirical manner. The study analysed 21 soil properties and generated a forest soil quality index of the Eastern Ghats, using principal component analysis. Using matrix modules and geospatial technology, we compared the forest degradation status calculated from satellite-based forest surveys with the degradation status calculated from the forest soil quality index. The Forest Survey of India classified about 1.8% of the Eastern Ghats' total area as degraded forests and the remainder (98.2%) as open, dense, and very dense forests, whereas the soil quality index results found that about 42.4% of the total area is degraded, with the remainder (57.6%) being non-degraded. Our ground truth verification analyses indicate that the forest soil quality index along with the forest cover density data from the Forest Survey of India are ideal tools for evaluating forest degradation.
18. NOTES ON TAXONOMY AND DISTRIBUTION OF *DESMODIUM ZONATUM* (LEGUMINOSAE: PAPILIONOIDEAE) IN PENINSULAR INDIA

(Cite as: K. Chandramohan¹, J. Swamy¹,*and M.T. Naidu². Rheedia Vol.26(1) 26–28, 2016 ISSN: 0971-2313).

Abstract

*Desmodium zonatum* Miq. (Leguminosae: Papilionoideae), a species native to Asia and Australasia, hitherto recorded only from the Western Ghats in Peninsular India, is reported here for the first time from the Eastern Ghats of Andhra Pradesh with detailed description, colour photographs and relevant notes.

**Keywords**: Andhra Pradesh, Desmodium zonatum, Eastern Ghats, New Record.

19. NOCTURNAL BIRDS IN THE EASTERN GHATS OF TAMIL NADU

(Cite as: David, J. Patrick; Vinoth, B. 2016. Indian Birds. 11: (2) 39–41. (Journal Article)

Abstract

We recorded nocturnal bird species, as part of a larger project to document avian diversity, in the Eastern Ghats of Tamil Nadu, from March 2012 to February 2015. This region has not been surveyed intensively before, except for the Vernay Survey in the late 1920’s. We recorded nocturnal bird species at their roosting sites during the day, and in the night we identified them by their calls. In total, we recorded 12 species of nocturnal birds. This included nine species of owls, and three of nightjars. Most number of records were of the Spotted Owlet, Jungle Owlet, Indian Nightjar, and Jerdon’s Nightjar. The Savanna Nightjar is reported for the first time from this area. These species were recorded from five types of habitat. Habitat loss due to expanding cultivation, wood cutting, cattle grazing, construction of resorts, and direct impacts, such as road kills, are threats to these species. Creation of awareness, and protecting existing habitats is essential for securing the long term survival of these enigmatic species.
Abstract

Species diversity and density of trees were assessed in four 1-ha plots (at 457–925 m in elevation) in the Eastern Ghats of the Andhra Pradesh region comprising mostly of tropical deciduous forests based on a census of all trees with girth at breast height = 15 cm. We compared tree community characteristics like stem density, basal area, diversity, and species composition of four plots using a tree dataset of eight belt transects (5 m × 1000 m) in the study area. A total of 2,227 individuals of 44 families, 98 genera, and 129 species were recorded. Combretaceae, Euphorbiaceae, and Anacardiaceae, showed the greatest importance value index. It was noticed that the most species were contributed by Euphorbiaceae and the tree density varied from 435 ha−1 to 767 ha−1 with an average basal area of 25.82 m²/ha. Shannon–Weiner index (H′) ranged from 3.76 to 3.96, the Simpson index ranged from 0.96 to 0.97, evenness index ranged from 0.60 to 0.78, and species richness index ranged from 10.04 to 11.24. At present the biodiversity of these forests are under threat due to the anthropogenic and upcoming mining activities. The present study will help us to understand the patterns of tree species composition and diversity in the Eastern Ghats of India.

Keywords: Biodiversity index; forest conservation; species composition; stand structure; tropical forests

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21. SMALL WILD CATS IN THE EASTERN GHATS OF ANDHRA PRADESH, INDIA

(Cite as: Murthy K Antimahanti and Aparna Surampudi. Small Wild Cat Conservation News, Issue 2, August 2016)

The northern Eastern Ghats are hill ranges with elevations up to 1,500 m, which harbor a rich flora and fauna. The vegetation is mostly tropical deciduous forest with small semi-evergreen patches in certain locations. Seasonal and perennial watercourses traverse the hill ranges and
drain into the Bay of Bengal. They provide ideal refuge for wetland associated species. Four species of small wild cats inhabit different habitats in this region: Jungle Cat *Felis chaus*, Leopard Cat *Prionailurus bengalensis*, Fishing Cat *P. viverrinus* and Rusty spotted Cat *P. rubiginosus*. Between January 2014 and January 2016, we documented sightings, rescues and dead individuals as well as indirect evidence like tracks, scats and information obtained from local people (Fig. 1). We report these incidents to highlight the conservation challenges in the region. Jungle Cat is the most commonly sighted cat and has been reported from multiple locations. It was observed in farm land, natural forest and in multiple use buffer areas surrounding protected areas. Two dead Leopard Cats were found near roads in the hills. In June 2014, livestock owners spotted a Fishing Cat that was hit by a train while chasing a herd of sheep at night. A Fishing Cat and two Rusty spotted Cats were accidentally trapped inside Indira Gandhi Zoological Park in January 2014 and in June 2015. They were all rescued (Fig. 2) and released by zoo staff. No rescue was possible for a Rusty spotted Cat that was hit by a car in the Simhachalam hills in December 2015.

All four species are threatened by rapid urbanisation, ensuing habitat encroachment and retaliatory killings. Fishing Cat and Jungle Cat often run into conflict with humans. There have been several incidents of Jungle Cats lifting poultry and Fishing Cats attacking young goats and sheep. Some tribal groups also hunt Fishing Cat for meat. In addition, bauxite mining and expansion of roads and hydroelectric projects contribute to destruction and loss of natural habitat. Therefore, we emphasize on the need to carry out further studies on small wild cats and to identify conservation interventions in this region.

22. FERTILITY AND MORTALITY LEVELS AMONG FOUR TRIBES OF EASTERN GHATS OF ANDHRA PRADESH, INDIA.
(Cite as: K.Bharathi*, J.M. Naidu**and M.Nanibabu***.Human Biology Review (ISSN 2277-4424) 5(2) 2016; http://www.humanbiologyjournal.com)
Abstract
Fertility and mortality levels were reported in Bagatha (150), Konda Dora (150), Konda Reddi (150) and Koya Dora (170) tribes inhabiting Eastern Ghats of Andhra Pradesh. Relatively higher fertility is reported among Konda Dora women (3.4, 3.2 and 2.8) when compared to Bagatha (2.9 2.6 and 2.2) conceptions, live births and living children per woman while the remaining tribes have reported moderate fertility. A high frequency of abortions (2.3%) and still births (7%) were reported among Bagatha and Konda Reddi whereas it is found to be less among Koya Dora (0.4%) and (2.3%). However, high postnatal mortality is recorded among Koya Dora (32.4%) while the other three tribes reported moderate postnatal deaths. The factors like women's weak social status in the society, low level of literacy, early age at marriage, early childbearing age influence the demographic processes of a population such as fertility and mortality.

Keywords: Fertility. Mortality. Prenatal deaths. Postnatal deaths. Tribe.

23. DIVERSITY OF MILLIPEDES (MYRIAPODA: DIPLOPODA) IN YELAGIRI HILLS, EASTERN GHATS, VELLORE DISTRICT, TAMIL NADU
(Cite as: Y Chezhian, S Prabakaran. International Journal of Fauna and Biological Studies 2016; 3(2): 91-97)

Abstract
Species diversity of the millipedes (Diplopoda) of Yelagiri hills of Southern Eastern Ghats of Tamil Nadu, India. Ten species of millipedes were identified; <i>Gyrodrepanum lamprum</i> (Chamberlin, 1920), <i>Anoplodesmus saussurii</i> (Humbert, 1865), <i>Arthrosphaera brandtii</i> (Humbert, 1865), <i>Arthrosphaera disticta</i> Pocock, 1895, <i>Arthrosphaera fumosa</i> Pocock, 1895, <i>Arthrosphaera magna</i> Attems, 1936, <i>Arthrosphaera lutescens</i> (Butler, 1872), <i>Arthrosphaera thurstoni</i> Pocock, 1895, <i>Trigoniulus corallines</i> (Gervais, 1847) and <i>Xenobolus carnifex</i> (Fabricius, 1775), belonging to our families and three orders were recorded from the different habitat of Yelagiri hills of Southern Eastern Ghats of Tamil Nadu. The genus Arthrosphaera is more dominant than other genera.
**Keywords:** Diplopoda, millipede diversity, Yelagiri Hills, Vellore district, Southern Eastern Ghats, Tamil Nadu

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**24. CARBON STOCKS OF **_**CROTON SCABIOSUS**_ **BEDD. (EUPHORBIACEAE) A VULNERABLE ENDEMIC SPECIES OF SOUTHERN EASTERN GHATS OF ANDHRA PRADESH**


**Abstract**

_Croton scabiosus_, a member of Euphorbiaceae and an endemic and vulnerable tree species of Southern Eastern Ghats of Andhra Pradesh was studied for its carbon storage capacity and carbon sequestration potential. The species population was sampled through 75 transects of 0.5 ha each and a total of 8743 individuals were enumerated. We estimated its carbon stocks at 1738.8 tons and CO₂ sequestration potential as 6294.46 tons.

**Keywords:** _Croton scabiosus_, Threatened Species, Carbon Stocks, Southern Eastern Ghats, Andhra Pradesh

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**25. CONSERVATION PRIORITY AREAS FOR VASCULAR PLANTS IN SESHACHALAM HILL RANGES, SOUTHERN EASTERN GHATS, INDIA**

(Cite as: M.V. Suresh Babu and B. Ravi Prasad Rao, 2016. DOI: 10.13140/RG.2.1.4054.)

**Abstract**

In the present paper we could prioritize the areas for plant conservation in Seshachalam hill ranges of Eastern Ghats, in India have been highlighted.

**Keywords:** Priority Areas, Conservation, Vascular Plants, Seshachalam Hill Ranges, Southern Eastern Ghats.
Abstract
Species diversity, density, population structure and dispersion patterns of tree species and their relation to grids disturbance (=30 cm dbh), were inventoried in a tropical dry deciduous forest in the Seshachalam hill ranges of Southern Eastern Ghats, India. Such data are necessary for ecosystem conservation of the understudied Eastern Ghats. The plant resources were quantitatively assessed through 46 grids of size 6.25x 6.25 km, covering the whole terrain. The grids were stratified based on NDVI value of 130 using remote sensed (IRS-1C) datasets. A belt transect of 1000×5m was randomly laid in each grid. A total of 16,338 stems (mean density 355.17 per 0.5ha) covering 222 species belongs to 144 genera and 56 plant families were recorded. The mean species richness in Seshachalam hill ranges is 34.36 ± 11.71 per 0.5 ha with a range of 8–62 species. Ten trees, Pterocarpus santalinus, Anogeissus latifolia, Syzygium alternifolium, Chloroxylon swietenia, Hardwickia binata, Terminalia pallida, Dolichandrone atrovirens, Ziziphus xylopyrus and Shorea tumbuggaia dominated the study area, collectively contributing to >50% of the total density. Species richness and stand density decreased with increasing tree girth classes. The forest stand contained a growing population, but there was considerable variation in basal area distribution between the grids. All species exhibited clumped dispersion of individuals. The non-metric multidimensional scaling (NMS) ordination, based on the species richness, diversity indices, stand density, basal area and disturbance score, organized the grids in to different clusters influenced by species richness, density and disturbance score. The study reveals the importance of conservation of trees in the biodiversity-rich Seshachalam hills.

Keywords: Conservation, Dispersion pattern, Eastern Ghats, Population structure, Seshachalam hill ranges.
27. DISCOVERY OF A NEW SUB-POPULATION, MAPPING AND UPDATED RED LIST ASSESSMENT OF THE ENDANGERED CYCAS BEDDOMEI DYER (CYCADALES: CYCADACEAE)

(Cite as: Journal of Threatened Taxa| www.threatenedtaxa.org | 26 October 2015 | 7(12): 7902–7909)

Abstract

A new sub-population of Cycas beddomei Dyer (CYCADACEAE), hitherto believed to be endemic to the Seshachalam hills (Tirupati-Kadapa Hills) of Andhra Pradesh is discovered from Velikonda Hills (Nellore-Kadapa districts) of Andhra Pradesh. Hence its global distribution status is hereby revised endemic to Seshachalam and Velikonda hills of Eastern Ghats of Andhra Pradesh. Combined datasets of our earlier studies with the latest indicated no change in its 'Endangered' status.

Keywords: Beddome’s Cycad, endangered, endemism, restricted distribution, updated IUCN Redlist assessment.'

28. OCCURRENCE OF THREE WESTERN GHATS ELEMENTS IN DRY EVERGREEN FOREST OF GINGEE HILLS, EASTERN GHATS OF TAMIL NADU, INDIA

(Cite as:N. Balachandran¹, K. Rajendiran², & W.F. Gastmans³ . Journal of Threatened Taxa| www.threatenedtaxa.org | 26 November 2015 | 7(14): 8177–8181)

Abstract

The main objective of the present work was to study the plant diversity from the existing forests, sacred groves, remnant vegetation and hillocks as a belt extending through Kancheepuram, Villupuram and Cuddalore districts of Tamil nadu and union territory of Pondicherry, Coromandel Coast of Southern India. Besides the aim of this work was also to record the diversity inclination of the core TDEF elements from the coast to the hills as well as
from north to south across different geographical dimensions such as altitude, latitude and longitude with respect to climatic conditions.

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29. EVOLUTION OF THE CHILKA LAKE GRANULITE COMPLEX, NORTHERN EASTERN GHATS BELT, INDIA: FIRST EVIDENCE OF ~ 780 MA DECOMPRESSION OF THE DEEP CRUST AND ITS IMPLICATION ON THE INDIA–ANTARCTICA CORRELATION

(Cite as: S. Bose, K. Das, J. Torimoto, M. Arima, D.J. Dunkley. Sciencedirect Lithos Volume 263, 15 October 2016, Pages 161–189)

Abstract

High-grade para and orthogneissic rocks near the Chilka Lake granulite complex, northern part of the Eastern Ghats Belt show complex structural and petrological history. Based on field and petrographic characters, five (M$_1$–M$_5$) metamorphic events could be identified. The earliest metamorphic event (M$_1$) produced amphibolite grade mineral assemblage which produced the peak granulite (M$_2$) assemblages at 900–950 °C, 8.5–9.0 kbar. The third metamorphic event caused decompression of the deeper crust up to 700–800 °C, 6.0–6.5 kbar. This was followed by cooling (M$_4$) and subsequent thermal overprinting (M$_5$). Fluid-composition during M$_3$ was dominated by high-density CO$_2$ and changed to low-density mixed CO$_2$–H$_2$O during the M$_4$. Zircon U–Pb SHRIMP data suggest 781 ± 9 Ma age for M$_3$ event. Texturally constrained monazite U–Th–Pb EPMA data, on the other hand, yield a group age of 988 ± 23 Ma from grain interior, which can signifies the age of M$_2$ event. Few spots with younger dates in the range of 550–500 Ma are also noted. This interpretation changes the existing tectonothermal history of northern Eastern Ghats Belt. Our data show that the two adjacent crustal domains of the Eastern Ghats Belt show distinctly contrasting Neoproterozoic histories. While the central Domain 2 evolved through early anticlockwise $P$–$T$ path culminating in ultrahigh temperature, the northern Domain 3 evolved through a clockwise $P$–$T$ path. It appears that the Domain 3 was contiguous to East Antarctica and became part of the Eastern Ghats Belt during the assembly of Gondwana. The ca. 780 Ma decompression event in the northern Eastern Ghats Belt opens up new possibilities for interpreting the breakup of Rodinia.
**Keywords:** Chilka Lake granulite complex; Eastern Ghats Belt; Decompression; Rayner Complex; Rodinia

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**30. THE 'EMPTY FORESTS' OF THE NORTHERN EASTERN GHATS**


**Abstract**

The bow stretched and in a moment the blunt arrow whizzed vertically up into the trees, a moment later the man reluctantly picked the arrow, looked up and walked away. The bird flock in the canopy was momentarily silent and then flew way. The hunt was not successful and the birds escaped. The hunter then turned a trapper as he went about setting several small and big traps along the fields and forests. He came back the next day to check. It was the same story either the animals outwitted the traps or there were none to get trapped. The Eastern Ghats north of the Godavari river in Andhra Pradesh (AP) has some of the finest forests tracts in the region. The forests in AP, especially in the Papikonda hills which also include the Papikonda National Park (1012 sq. km) are contiguous and relatively dense covering an area in excess of 10,000 sq. km. If one observes these forests from air or using Google Earth, they look like a large chunk of uniform green that is dense and pristine. There are also few patches of existing and abandoned Podu (shifting agriculture) practiced by several indigenous groups who sustain their existence based on cultivation, gathering and selling forest produce. As one moves north
of Papikonda hills into Araku valley and Odisha's Koraput, Malkanagiri and Rayagada districts,
forests give way to open hilltops covered with grass, phoenix bushes and fragmented patches of
forests along the slopes. These hills were used as a lair by Maoists until recently, when they
were largely flushed out of AP.

31. THE OCCURRENCE OF FLUOR-WAGNERITE IN UHT GRANULITES AND ITS
IMPLICATIONS TOWARDS UNDERSTANDING FLUID REGIMES IN THE
EVOLUTION OF DEEP CRUST: A CASE STUDY FROM THE EASTERN GHATS
BELT, INDIA

(Cite as: Kaushik Das, Naotaka Tomioka, Sankar Bose, Jun-ichi Ando and Ichiro Ohnishi. DOI:
10.1007/s00710-016-0474-y)

Abstract
We report the occurrence of a rare phosphate mineral, fluor-wagnerite (Mg$_{1.91-1.94}$Fe$_{0.06-}
0.07}$Ca$_{<0.01}$) (P$_{0.99-1.00}$O$_4$)(OH$_{0.02-0.17}$F$_{0.98-0.83}$) from the Eastern Ghats Belt of India, an orogenic
belt evolved during Mesozoic to Neoproterozoic time. The host rock, i.e. high- to ultrahigh
temperature (UHT) granulites (~1000 °C, 8–9 kbar) of the studied area was retrogressed after
emplacement to mid-crustal level (800–850 °C, 6–6.5 kbar) as deduced from their pressure-
temperature histories. Based on mineral chemical data and micro-Raman analyses, we
document an unusual high Mg-F-rich chemistry of the F-wagnerite, which occur both in peak
metamorphic porphyroblastic assemblages as well as in the retrograde matrix assemblage.
Therefore, in absence of other common phosphates like apatite, fluor-wagnerite can act as an
indicator for the presence of F-bearing fluids for rocks with high $X_{Mg}$ and/or $fO_2$. The
occurrence of F-rich minerals as monitors for fluid compositions has important implications for
the onset of biotite dehydration melting and hence melt production in the deep crust. We
propose that fluor-wagnerite can occur as an accessory mineral associated with F-rich fluids in
lower-mid crustal rocks, and F in coexisting minerals should be taken into consideration when
reconciling the petrogenetic grid of biotite-dehydration melting.
Keywords: Fluor-wagnerite in Al-rich granulites, Biotite dehydration melting, UHT granulites, Eastern Ghats Granulite Belt, India.

32. RESTORATION OF DEGRADED SOIL IN THE NANMANGALAM RESERVE FOREST WITH NATIVE TREE SPECIES: EFFECT OF INDIGENOUS PLANT GROWTH-PROMOTING BACTERIA


Abstract
Restoration of a highly degraded forest, which had lost its natural capacity for regeneration, was attempted in the Nanmangalam Reserve Forest in Eastern Ghats of India. In field experiment, 12 native tree species were planted. The restoration included inoculation with a consortium of 5 native plant growth-promoting bacteria (PGPB), with the addition of small amounts of compost and a chemical fertilizer (NPK). The experimental fields were maintained for 1080 days. The growth and biomass varied depending on the plant species. All native plants responded well to the supplementation with the native PGPB. The plants such as Pongamia pinnata, Tamarindus indica, Gmelina arborea, Wrightia tinctoria, Syzygium cumini, Albizia lebbeck, Terminalia bellirica, and Azadirachta indica performed well in the native soil. This study demonstrated, by using native trees and PGPB, a possibility to restore the degraded forest.

33. ETHNOMEDICINAL STUDIES OF MEDICINAL PLANTS IN EASTERN GHATS OF VIZIANAGARAM DISTRICT, ANDHRAPRADESH, INDIA.

(Cite as: Parijatham R. T.*, Sujatha B., Seetha Lakshmi B. International Journal for Bioassays 5.2 (2016) 4825-4842)
Abstract
An ethnomedicinal survey was carried out in tribal communities of Eastern Ghats of Vizianagaram district with an aim to document the information regarding indigenous medicinal plant species used in the treatment of various diseases. The study area is inhabited by several tribal groups: Jatapus, Kondadoras, Mukadoras, Mannedoras, Yerukulas, Goudus, Gadabas and Savara, and their population is 2.14 lakhs as per 2011 census. The present paper deals with about 336 medicinal plant species of 269 genera belonging to 99 families. These have been recorded and are used by the 8 tribal groups to cure over 250 ailments. Plant species like Chrysanthemum indicum, Jasminum angustifolium, Nerium odorum and Tagetes erecta were used not only for ornamental purposes but also as ethnomedicinal plants to cure Sexually transmitted diseases like Gonorrhoea, Syphilis, Skin diseases like Ringworm (Fungal disease), Leprosy (Bacterial disease) and Rheumatism. Catharanthus roseus flowers paste has good control over insect and scorpion bites. This survey provides some information to biochemists and pharmacologists in screening of ethnomedicinal plants and in rapidly assessing of phytoconstituents for the treatment of various diseases.

Keywords: Ethnomedicine; Vizianagaram flora; Jatapus; Mukadoras; Mannedoras; Yerukulas; Goudus; Gadabas and Savara.

34. ETHNIC TOURISM OF EASTERN GHATS OF TAMIL NADU: A HISTORICAL PERSPECTIVE
(Cite as: C.Prem Naseer V.Palanichamy. Historical Research Letter ,ISSN 2224-3178 (Paper) ISSN 2225-0964 (Online) Vol.38, 2016)

Abstract
Tamil Nadu is the gateway of the south India. It is a land of beauty. A plethora of panoramic sites makes tourism in, Tamilnadu it has abundant tourist attractions. There are kinds of tourism in this wildlife tourism, eco-tourism, that is, hill tourism and adventure tourism. The latest type of tourism which has evolved in this region i.e. medical tourism. Tamilnadu hills station have been favoured destinations for travelers for centuries, they have attracted human
beings since the period of modernization because of their natural beauty, exclusive flora and fauna, fresh and unpolluted air, the expanse of greenery and virgin landscape.

In the ancient period mountains and the valley were associated with religion rather than as a place for recreation of tourism. The natural ranges were known as abodes of Gods. The original beauty was maintained by the tribal people. It was by forest migrated people. The department was started breaking in the medieval period with the onset of a new thinking viz., “the usability of the hills.” The development which followed started to change the ecology of the area. The initiation of human interference which began in the medieval period took its concrete shape in the British period. It was the British who were responsible for introducing technology and scientific marvel in the Eastern ghats with the purpose of modernizing the region.

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35. WATERSHED MANAGEMENT FOR NAMAKKAL DISTRICT USING GIS

(Cite as: Aazam, S.H.; Geetha, P.; Soman, K.P. International Journal of Control Theory and Applications, Volume 9, Number 10, p.4401-4407 (2016))

Abstract

The Eastern Ghats of southern Tamil Nadu is composed of prominent delta valley of the river Cauvery. Being a perennial river, Cauvery extends its sub-watershed across the paths of Salem and Namakkal. It is evident to measure and put forward the pavement of this river across the study area. This paper uses the images of LISS 3, SRTEM; constructive and destructive analyses are further carried out with the above images. This basin area of sub-peninsular extends over different morphological area of the delta valley. The study is coupled with the information delivered by the survey of India toposheets. The morphometric and anatomical analysis is carried out by employing ArcGIS 9.1 software platform. Various theoretical and visual aspects of the basin are analyzed and interpreted, especially the remarkable hindrance due to astounding influence of geology, geo-morphology and tectonics of the basin. The results are discussed in this paper. Digital Elevation Model for the study area is prepared using ERDAS IMAGINE 9.1. © International Science Press
Abstract

In an attempt to reveal the biodiversity status of one of the least studied plant groups of Eastern Ghats, the authors have catalogued the diversity and distribution of bryoflora of Odisha situated in the Northern Eastern Ghats biogeographic regions of India. One hundred forty nine species of bryophytes including 102 mosses under 23 families, 41 liverworts under 16 families and 6 hornworts under 2 families were reported from Odihsa as a result of 7 years of primary survey (2008-2015) conducted in some selected bryodiversity rich habitats covering 12 districts of Odisha and also from scrutiny of different research publications including research papers, books and research reports. In terms of species richness, the Deomali hills was found to be the most diverse in terms of bryophytes followed by Similipal biosphere reserve, Mahendragiri hills, Niyamgiri hills, Baphlimali hills and Khandadhar hills. Deomali hills also showed highest diversity in endemic mosses. Five mosses such as Fissidens orishae Gangulee, Erpodium mangiferae Müll. Hal., Hyophila comosa Dixon, Stereophyllum confusum Ther., Neckeropsis exserta (Hook. ex Schwagr.) Broth. are found to be endemic to India that occur in Odisha. Aneura pinguis (L.) Dumort., Aneoctangium stracheyanum Mit., Cyathophorella hookeriana (Griff.) M. Fleisch., Cyathophorum adiantum (Griff.) Mitt., Distichophyllum schmidtii Broth., Eurhynchium striatum (Spruce) Schimp., Hypnum cupressiforme Hedw., Leucobryum juniperoides (Brid.) Müll. Hal., Lophocolea bidentata (L.) Dumort., Macromitrium sulcatum (Hook.) Brid., Notothylas levieri Schiffner, Pallavicinia lyellii (Hook.) Gray Pellia epiphylla (L.) Corda., Philonotis fontana (Hedw.) Brid., Pogonatum neesii (Müll. Hal.) Dozy., Polytrichum commune Hedw., Polytrichum juniperinum Hedw., Racopilum cuspidigerum (Schwagr.) Angstrom, Racopilum orthocarpum Wilson ex Mitt., Riccia beyrichiana Hampe ex Lehman, Riccia billardieri Mont. & Nees., Spruceanthus semirepandus (Nees) Verd., Thuidium cymbifolium (Müll. Hal.) Paris, Thuidium koelzii H. Rob., Trematodon longicollis Michx., are some of the new distributional record of occurrence for the Eastern Ghats. The present study reveals that Fissidentaceae, Pottiaceae, Bryaceae, Dicranaceae, Aytoniaceae, Marchantiaceae, Funariaceae and Anthocerotaceae are dominant families in the study area. The authors have also identified few
forest pockets and critical habitat in the state where bryophyte diversity shall be very rich that needs a detailed survey in near future. The authors discuss the list of bryophytes of the state in a regional context of rarity, as well as address some general subject matters regarding cryptogam conservation and further work needed in the state of Odisha. The study would provide a prelude data for future bryological studies and bryomonitoring in the Eastern Ghats in general and the state of Odisha in particular.

**Keywords:** Bryophytes; Diversity; Eastern Ghats; Odisha; Similipal

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**37. HEAVY METAL RESISTANT BACTERIA BACILLUS THURINGIENSIS ISOLATED FROM BAUXITE MINE SOIL, KOLLI HILLS, EASTERN GHATS, TAMILNADU, INDIA**

(Cite as: Ponniah Anusha. 10th Asia-Pacific. Biotech Congress July 25-27, 2016 Bangkok, Thailand)

**Abstract**

Heavy metal pollution spreading to the environment due to human activities such as mining, smelting, e-waste dumping etc. Kolli hills are part of the Eastern Ghats of Tamilnadu harbour rich in biodiversity. Mining activities in study area being created heavy metal contamination in surrounding areas which can affect the microbial, flora and fauna biodiversity and soil fertility. Remediation of heavy metal contaminated sites necessary to turn the beneficial. The indigenous bacteria are evolving as resistant to the heavy metal to some extent such microbes can be used for the metal removal and metal recovery from the polluted sites. This study was aimed to screen the metal resistant bacteria from the heavy metal contaminated soil samples. The efficient two bacterial isolates (A1-2 and A1-3) were isolated and identified as Bacillus spp., through conventional staining and biochemical tests. The bacterial strains were further confirmed by 16S rRNA sequencing and phylogenetic tree which reveals that, the isolates 100 % similarity with the Bacillus thuringiensis and the sequences were submitted to the GenBank. The multi metal resistant of isolates was assessed through the minimum inhibitory concentration (MIC) method. The bacterial strains were studied for tolerance to heavy metals such as Copper, Chromium, Lead and Zinc in different concentrations ranging from 10, 20, 40 to 640µg/ml. At the concentration of 10µg/ml, *B. thuringiensis* A1-2 showed resistant of about
98.94 %, 77.91 %, 76.23 % and 60.41 %, whereas, *B. thuringiensis* A1-3 found 99.66 %, 87.68 % and 98.87 % resistant to Cu, Cr, Pb and Zn respectively. At the concentration of lead (640µg/ml), the isolates A1-2 and A1-3 showed resistant effect of about 44.5 % and 33.39 % and the outcome of this study found that the strains are having the viability to withstand in high lead stress condition. These results confirmed that the both strains were highly tolerant to lead when compared with Cu, Cr and Zn. Further, the antibiotic profiles of these two bacterial strains were investigated by disc diffusion method and show sensitive to tested antibiotics. Thus, the present study suggested that the bacterial isolates explore potential adaptation to the selected heavy metals which can be applicable for the alternative remediation agent to reduce the heavy metals contamination in the hilly environment. This work was funded by Science and Engineering Research Board (SERB), New Delhi, India (SB/YS/LS-25/2013) under Start up grant for young scientists.

38. STUDIES ON GEOLOGY AND MINERAL RESOURCES OF GANJAM DISTRICT, ORISSA, INDIA


Abstract:

Ganjam district is located in the southern part of the Odisha state. The main geomorphic units valleys, buried pediplain, flood plain, coastal plain and sand dunes. The important structural features are various types of folds, joints, foliation, lineations etc. The important litho types are Khondalite, Charnockite, Gneiss and Granulite. Chhatrapur deposit along Ganjam coast is the largest and richest deposit alond East Coast of India. The important heavy minerals are Ilmenite, Garnet, Sillimanite, Rutile, Zircon and Monazite. The commercial type Dimension and Decorative Stones of in Ganjam district include Berhampur Blue, Grey Granite and Pink Granite. The various rocks which are quarried in Ganjam dist. as dimension stones include Granite, Khondalite, Charnockite, granulite, leptynite, granitic gneiss laterite and Augen gneiss. The prospect a beach sand deposit in Ganjam Coast can lead to increasing mining and industrial activities in future the future growth of this industry is lucrative and prospective.
39. IN-VITRO ANTIMICROBIAL ACTIVITY OF LICHEN RAMALINA CONDUPICANS VAIN. COLLECTED FROM EASTERN GHATS, INDIA

(Cite as: Anjali Devi B.1, Satish Mohabe1, Sanjeeva Nayaka2 and A. Madhusudhana Reddy. Science Research Reporter,6(2):99-108, (Oct-2016))

Abstract
The research work investigates the in-vitro antimicrobial efficacy of lichen Ramalina conduplicans Vain. (Ramalinaceae). The 2-Propanol, methanol, acetone and petroleum ether extract of the species were tested each against eleven bacterial and fungal pathogens by using Kirby-Bauer disc diffusion method with 15 μL extract per disc. It is observed that the extracts are effective against bacteria in than to the fungi. Among various extracts methanol was much effective against most of the bacteria and diameter of inhibition zone ranged from 12.66±0.66 to 16.66±1.6 mm. In case of antifungal activity the extract formed zone of inhibition against only six pathogens. The R. conduplicans can be a potential source of bioactive agents against disease causing microbes of humans and plants.

Keywords: Antifungal, antibacterial, Kirby-Bauer disc diffusion assay, bioprospecting, lichenized fungi.

40. ETHNIC MEDICINAL PLANT WEALTH OF EASTERN GHATS: STATUS, KNOWLEDGE SYSTEMS AND CONSERVATION STRATEGIES

http://dx.doi.org/10.20546/ijcrbp.2017.401.010)

Abstract:
The Eastern Ghats stretching from Odisha, Chhattisgarh, through Andhra Pradesh to Tamil Nadu and parts of Karnataka are endowed with a large variety of biological species, geological
formations and indigenous tribal groups. The traditional knowledge systems on medicinal plants prevailing in Eastern Ghats of India and suitable management strategies proposed for the conservation of folklore medicinal plant species are reviewed in this article.

**Keywords:** Conservation, Eastern Ghats, Medicinal plants, Traditional knowledge

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41. *PYRROSIA POROSA* (C. PRESL) HOVENKAMP – A NEW DIPLOID CYTOTYPE OF SOUTH INDIA FROM KOLLI HILLS OF EASTERN GHATS, TAMIL NADU, INDIA


**Abstract**

The present investigation is on the chromosome count of *Pyrrosia porosa* (C. Presl) Hovenkamp, a fern of Kolli Hills, Eastern Ghats, South India. The young sori were collected from Kuzhivalavu of Kolli Hills. The sori showed 37 bivalents at first meiosis of spore mother cells. Diploid cytotype of *P. porosa* has been reported from Eastern India and Eastern Himalaya so far. This is the first report of the diploid cytotype from South India.