KEY INDICATOR 3.3

Research Publications and Awards

3.3.1: Number of research papers published per teacher in the Journals notified on UGC care list during the last five years

Of

NAAC Criteria 3

RESEARCH, INNOVATIONS AND EXTENSION

Journal of Biomolecular Structure and Dynamics ›
Volume 36, 2018 - Issue 14

Research Article

Investigating the preventive effects of baicalin and gallocatechin against glyoxal-induced cystatin aggregation

Aamir Sohail, Waseem Feeroze Bhat, Sheraz Ahmad Bhat, Mohammad Furkan, Aaliya Shah & **Bilqees Bano**

Pages 3791-3802 | Received 21 Sep 2017, Accepted 30 Oct 2017, Published online: 30 Nov 2017

Cite this article https://doi.org/10.1080/07391102.2017.1400470 Check for updates

Abstract

Several mammalian proteins form pathological deposits under nonphysiological conditions that are associated with many degenerative diseases. Protein aggregation is associated with aging, as well as a variety of diseases, including cystic fibrosis, amyotrophic lateral sclerosis (ALS), and hypertrophic cardiomyopathy. There is a lack of any potential anti-amyloidogenic agents and therapeutics till date. Polyphenols have been accredited with myriad biological effects. An analysis of the effects of natural agents like baicalin (BC) and gallocatechin (GC) on aggregation process can open new avenues for the treatment of protein misfolding diseases. Thus,

ScienceDirect

Archives of Biochemistry and Biophysics

Volume 650, 15 July 2018, Pages 103-115

Modification of chickpea cystatin by reactive dicarbonyl species: Glycation, oxidation and aggregation

Sheraz Ahmad Bhat [a], Waseem Feeroze Bhat [a], Mohammad Afsar [a], Mohd Shahnawaz Khan [b], Moneera Saud Al-Bagmi [b], Bilqees Bano [a]

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Abstract

Reactive dicarbonyl species such as methylglyoxal (MGO) and glyoxal (GO) have recently received extensive attention due to their high reactivity and ability to modify biological substances such as proteins, phospholipids, and DNA. In case of proteins these reactive species mainly react with lysine and arginine residues to form AGEs, oxidative products, and aggregates. Chickpea cystatin (CPC) was incubated with varying concentrations of glyoxal and methylglyoxal which caused, along with altered secondary and tertiary structures, glycation, functional inactivation, altered redox state, cross-linking and high-molecular-mass aggregation. All these processes were examined and characterized by UV-Vis, fluorescence, and CD spectroscopies. Further characterization of CPC modified by reactive dicarbonyls was done by polyacrylamide gel electrophoresis which also showed alterations in the CPC molecules. Thus, in addition to describing the effects of GO and MGO on structure, conformation and function of CPC, this study also shows the relatively superior modifying effect of methylglyoxal for CPC in terms of glycation, oxidation and aggregation. This model system could shed some more light on the role of the reactive dicarbonyls in the specific alterations of proteins with different biological consequences having implications to ageing and disease such as diabetes.

ScienceDirect

Biochimica et Biophysica Acta (BBA) - Proteins and Proteomics

Volume 1866, Issue 9, September 2018, Pages 989-1000

Glycation induced conformational transitions in cystatin proceed to form biotoxic aggregates: A multidimensional analysis

Sheraz Ahmad Bhat [a], Waseem Feeroze Bhat [a], Hussain Arif [a], Mohammad Afsar [b], Aamir Sohail [a], Md. Shahnawaz Khan [c], Md. Tabish Rehman [c], Rais Ahmad Khan [c], Bilqees Bano [a]

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https://doi.org/10.1016/j.bbapap.2018.06.006

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Highlights

- Hyperglycaemic state can cause glycation and compromise with the structural and functional properties of proteins.
- The production of AGEs during glycation results in a variety of protein conformational diseases.
- The long term effect would be diabetic complications, besides implications in ageing.
- This study will give some insights into glycation based protein alterations and aggregations that may be toxic.

ScienceDirect

International Journal of Biological Macromolecules

Volume 109, 1 April 2018, Pages 1006-1011

Interaction of a novel twin-tailed oxy-diester functionalized surfactant with lysozyme: Spectroscopic and computational perspective

Imtiyaz Ahmad Bhat [a], Waseem Feeroze Bhat [b], Mohd Akram [a], Kabir-ud-Din [a 1]

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https://doi.org/10.1016/j.ijbiomac.2017.11.085

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Abstract

Herein, we have examined the interaction of oxy-diester novel twin tailed (gemini) surfactant, 2,2′-[(oxybis(ethane-1,2-diyl))bis(oxy)]bis(N-hexadecyl-N,Ndimethyl-2-oxoethanaminium) dichloride (C_{16}-E2O-C_{16}) with hen egg white lysozyme (HEWL), utilizing a spectroscopic and molecular docking techniques. Steady-state fluorescence infers ground state C_{16}-E2O-C_{16}-HEWL complex formation. Other spectroscopic results validated the conformational, structural and micro-environmental changes in HEWL upon interaction with C_{16}-E2O-C_{16}. Molecular modeling has shown that C_{16}-E2O-C_{16} binds in the proximity of hydrophobic moieties (Trp-62/108). We believe the results of the current study will assist in designing the surfactant-enzyme systems for their end use as ingredients in pharmaceutical, cosmetic, drug delivery and industrial compilations. In terms of scientific literature standpoint, it will also enrich and widen the scope of biomacromolecule-surfactant interactions.

Graphical abstract

ESTIMATION OF FINITE POPULATION MEAN IN STRATIFIED RANDOM SAMPLING USING NON-CONVENTIONAL MEASURES OF DISPERSION

Mir Subzar
Division of Agricultural Statistics, SKUAST-Kashmir, India

S. Maqbool
Division of Agricultural Statistics, SKUAST-Kashmir, India

T. A. Raja
Division of Agricultural Statistics, SKUAST-Kashmir, India

M. A. Bhat
Division of Agricultural Statistics, SKUAST-Kashmir, India

Keywords: Non-Conventional Measures of Dispersion, Ratio Estimators, Stratified Random Sampling, Mean Square Error, Efficiency

Abstract

The present study was taken into consideration to suggest a proficient class of estimators for predetermined population mean of variable of interest in stratified random sampling by utilizing the auxiliary information of robust measures such as Gini's Mean Difference, Downton's Method and Probability Weighted Moments. Asymptotic properties such as bias and mean square error of the proposed class of estimators have been derived using Taylor series method upto first degree of approximation. In the support of the theoretical proposed work we have given numerical illustration and from this we conclude that our proposed class of estimators performs better than existing estimators.

Downloads

Contribution of Educated Women in Different Fields in District Kulgam (J&K)

Dr. Ruhee Rashid
Yaripora Kulgam (J&K) India

Abstract. Without the existence of a woman, the thought of human race can't be imagined. Female in the sacred books have been conferred with a very high position and have been respected with a variety of adjectives. A woman is called a mother of the nation. The contributions of educated females in different fields are crucial in combining professional and responsibility measures for successful relationship of teachers in this regard. In this study we will discussed the contribution of educated females in district Kulgam of Jammu & Kashmir.

Key words: Educated women, Economic and Social efficiency.

1. Introduction

Education of girls is emerging as one of the top priorities of Indian society. Education of girls is not an option but it is a necessity. All wants to remove gender difference in education. A lot of progress has been made in modern decades. In India the number of girls that attends school is rising but in some parts a number of girls receive little or no education. Even at present there are various girls which don't even have access to Primary education. In various regions female literacy is still less than half that of males. Girls that are literate have many benefits to society [1]. An educated mother invests more in their children's schooling and this improves their homes as well as society. They powerfully consider and perform family planning. They provide equal significance to health, education and enhance the productivity of future generation. If they are uneducated then the production and ability of future generation will be low. We have to keep this thing in mind if we will not spend on female education then we pay in future in the form of less income and slow growth.

Female are an important part of our society. Without the existence of a woman, the thought of human race can't be imagined. Female in the sacred books have been conferred with a very high position and have been respected with a variety of adjectives. A woman is called a mother of the nation and it is believed that education of mother is the education of the whole family. Throughout the ages women have play a vital role in the political, economic and social sector. She has proved her capability and capacity not merely as the bread dispenser, but also as one of the main provider to the family earnings [2].

Women whatever their profession or occupation may be, contribute into the humankind in their own modest way and their participation under any conditions can't be undervalued. Female literacy is an essential contribution for the political, social and economic development of the cultured society and thus,

Polyploidy determines the stage of invasion: clues from Kashmir Himalayan aquatic flora

Original Article Published: 17 February 2018

Volume 40, article number 58, (2018) Cite this article

Acta Physiologiae Plantarum

Aims and scope

Submit manuscript

Gowher A. Wani, Manzoor A. Shah, Zafar A. Reshi & Mudasir A. Dar

Abstract

Invasive species pose a major threat to native biodiversity and ecosystem integrity in many ecologically sensitive parts of the globe. Many research efforts have so far been made mainly with a focus on morphology, physiology and reproductive biology of invasive species to explain what determines the patterns of invasion. Recently, polyploidy has been reported to significantly influence plant invasiveness. Notwithstanding the profound management and conservation implications, determining the genetic basis of plant invasiveness is a challenging task for ecologists. Variation in ploidy levels of species promises to yield some useful insights in this direction and we, therefore, aimed to test the relation between polyploidy and species invasiveness. We documented chromosome number and ploidy level of

Issue 12, 2018

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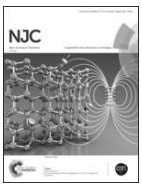


From the journal:
New Journal of Chemistry

Facile synthesis of functionalized urea, imidazolium salt, azide, and triazole from a 2-amino-5,7-dimethyl-1,8-naphthyridine scaffold and their utilization in fluoride ion sensing †

Mandeep K. Chahal ,[a] Tawseef Ahmad Dar [a] and Muniappan Sankar *[a]

Author affiliations

Abstract

Four new 2-amino-5,7-dimethyl-1,8-naphthyridine derivatives (**1–4**) possessing urea, amide-imidazolium salt, amide-azide, or amide-triazole moieties were synthesized in good to excellent yields by derivatization of 2-amino-5,7-dimethyl-1,8-naphthyridine. We examined their anion recognition abilities towards different anions such as fluoride, chloride, bromide, iodide, nitrate, dihydrogen phosphate, cyanide, hexafluorophosphate, perchlorate, hydrogen sulphate and acetate by ^{1}H NMR and UV-Vis spectroscopy. Among various 2-amino-5,7-dimethyl-1,8-naphthyridine derivatives, only **1a** and **2** showed spectroscopic and colorimetric change when treated with fluoride ions among other anions. The F^- ions first established a hydrogen-bonding interaction with **1a** to give the most stable 1 : 1 complex and then, after addition of a second equivalent, the F^- ions induced urea deprotonation due to the formation of HF_2^-. Moreover, **2** underwent deprotonation of amide –NH proton after the addition of 1 equiv. of fluoride ions. The action of the probes was thoroughly investigated by DFT calculations that also supported the H-bonding induced deprotonation sensing mechanism.

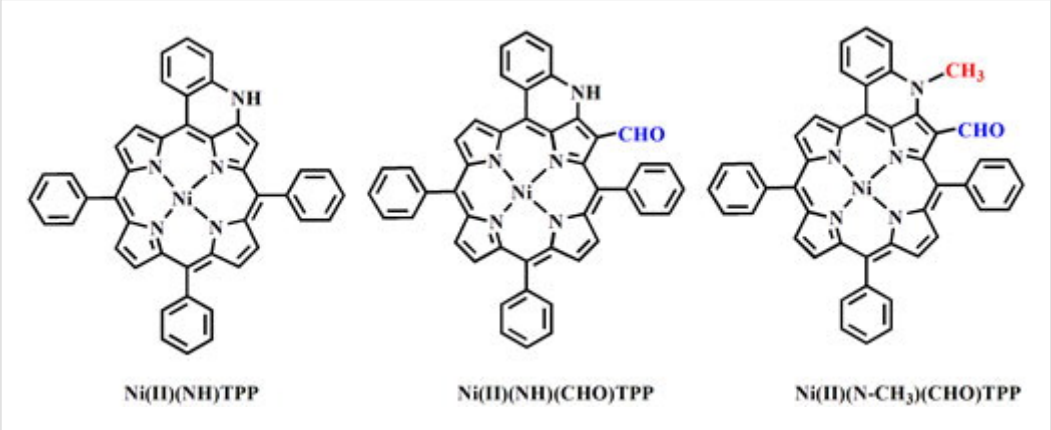
Tawseef Ahmad Bar, Mandeep, and Muniappan Sankar

https://doi.org/10.1142/S1088424618501109 | **Cited by:** 2 **(Source: Crossref)**

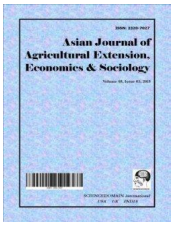
< Previous Next >

Abstract

N-methyl fused nickel(II) porphyrin was synthesized by a facile synthetic route in excellent yield. The effect of the electron-donating methyl group on spectral and electrochemical redox properties was analyzed by comparing the electrochemistry with that of its precursors. *N*-methylated fused nickel(II) porphyrin exhibited a red-shifted absorption spectrum ($\Delta\lambda_{max}$ = 6–13 nm) and a 180 mV anodic shift in the first ring oxidation as well as a 210 mV shift in reduction with respect to its Ni(II)-fused porphyrin precursor (Ni^{II}-(NH)TPP). However, the absorption spectral features and redox potentials of *N*-methyl fused nickel(II) porphyrin are marginally shifted as compared to its immediate precursor, β-formyl Ni(II)-fused porphyrin. Notably, Ni(II)(N-CH_3)(CHO)TPP exhibited a third oxidation at 1.51 mV, corresponding to oxidation of Ni(II) to Ni(III) due to the presence of "push–pull" β substituents.



Keywords: synthesis of fused porphyrins ▪ *N*-methylation ▪ spectral and electrochemical properties



Asian Journal of Agricultural Extension, Economics & Sociology

25(2): 1-5, 2018; Article no.AJAEES.41961
ISSN: 2320-7027

An Improvement of Robust Estimator Using Known Values of Probability Weighted Moment for Finite Population Variance

M. A. Bhat[1*], S. Maqbool[1], S. A. Mir[1], N. A. Sofi[1], Ab. Rauf[1], Immad. A. Shah[1] and Mir Subzar[1]

[1]Division of Agricultural Statistics, SKUAST-Kashmir (190025), India.

Authors' contributions

This work was carried out in collaboration between all authors. Author MAB designed the study, performed the statistical analysis, wrote the protocol and first draft of the manuscript. Authors SM, SAM, NAS and AR managed the analyses of the study. Authors IAS and MS managed the literature searches. All authors read and approved the final manuscript.

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Original Research Paper

Received 19th March 2018
Accepted 19th May 2018
Published 30th May 2018

ABSTRACT

In this study new improved robust estimator has been proposed for precise estimation of finite population variance in simple random sampling by incorporating as auxiliary information of probability weighted moment. Properties associated with proposed estimators are assessed by mean square error and bias through numerical demonstration. We have also provided theoretical efficiency comparison of the study.

Keywords: Ratio estimator; probability weighted moment; SRSWOR; MSE; bias and efficiency.

1. INTRODUCTION

Here we consider a finite population $U=\{U_1,U_2,...,U_N\}$ of N distinct and identifiable units. Let Y be a real variable with value Y_i measured on $U_i, i=1,2,3....N$ given a vector $[Y_1,Y_2,Y_3.....Y_N]$. Sometimes in sample

**Corresponding author: E-mail: mabhat.1500@gmail.com;*

Improved and Robust Estimators for Finite Population Variance Using Linear Combination of Probability Weighted Moment and Quartiles as Auxiliary Information

Article *in* Journal of Scientific Research and Reports · March 2018

DOI: 10.9734/JSRR/2018/40116

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Heavy metal contamination in two commercial fish species of a trans-Himalayan freshwater ecosystem

Published: 26 January 2019

Volume 191, article number 104, (2019) Cite this article

Environmental Monitoring and Assessment

Aims and scope

Submit manuscript

Mohammad Aneesul Mehmood, Humaira Qadri, Rouf Ahmad Bhat, Asmat Rashid, Sartaj Ahmad Ganie, Gowhar Hamid Dar & Shafiq-ur-Rehman

Abstract

Toxic metals have disturbed the quality of freshwater ecosystems worldwide. The concentration of heavy metals was investigated in liver, gills and muscle tissues of *Schizothorax niger* and *Cyprinus carpio* captured from river Jhelum of Kashmir Himalaya. The heavy metals displayed a wide range of disparity in studied tissues, seasons, sites and species. Cu^{2+} exhibited the highest concentration (279.6 μg/kg) in the liver tissues of *S. niger*

ScienceDirect

Journal of Asia-Pacific Biodiversity

Volume 12, Issue 3, 1 September 2019, Pages 473-476

Short Communication

First record of *Aspicera hartigi* (Hymenoptera, Figitidae) from India, with observations on its foraging behavior on *Ephedra* plants

Zubair Ahmad Rather [a], Aijaz Ahmad Wachkoo [b], Anzar Ahmad Khuroo [a], Abdul Rashid Dar [c], Tanvir ul Hassan Dar [d]

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https://doi.org/10.1016/j.japb.2019.03.007

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Abstract

Aspicera hartigi Dalla Torre, 1889 is reported for the first time from India. A brief diagnosis and photographic illustrations of the species are provided to validate this new faunal record for India from the Kashmir valley in Western Himalaya. In addition, the present study for the first time reports the feeding of *Aspicera hartigi* on the pollination drop of the female cones in *Ephedra* plants, which provides novel insights about its foraging behavior and hint toward its role as pollination drop robber.

Previous Next

Keywords

scientific reports

Article | Open access | Published: 29 July 2019

Taxonomy of Arabian *Temnothorax* Mayr (Formicidae: Myrmicinae) with description of a new species enhanced by x-ray microtomography

Mostafa R. Sharaf ✉, Abdulrahman S. Aldawood, Evan P. Economo, Aijaz Ahmad Wachkoo & Francisco Hita Garcia

Scientific Reports **9**, Article number: 11009 (2019)

Abstract

Temnothorax elmenshawyi sp. n., a new ant species from the Asir Mountains of the southwestern region of the Kingdom of Saudi Arabia, is described based on the worker caste. The new species is a member of the *T. exilis* species group and is distinguished from the other species included in this group by the impressed metanotal groove, the short, acute and broadly-based propodeal spines, the finely punctate posterior half of cephalic surface, and absence of a median clypeal carina. Despite extensive collecting by the authors at the type locality, only two specimens are available for description, suggesting that this species may be rare and likely endemic to the Asir Mountains. The species description is complemented by still images of volume renderings of a 3D model and a 3D rotation video of the holotype based on x-ray microtomography (micro-CT), allowing remote in-depth examination of the specimen. The virtual micro-CT data is provided as cybertype dataset and freely available online

ScienceDirect

Acta Ecologica Sinica

Volume 39, Issue 3, June 2019, Pages 219-228

Community structure and ant species diversity across select sites of Western Ghats, India

Javid M. Dad [a], Shahid Ali Akbar [a b], Himender Bharti [b], Aijaz Ahmad Wachkoo [c]

https://doi.org/10.1016/j.chnaes.2018.12.008

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Abstract

Information available on species composition, richness and diversity of ant communities of Western Ghats is limited. Recognizing this, the study (2010–2013) was undertaken to evaluate richness and diversity of ants in eight sites of Western Ghats, India, with added notes on how it varies on elevation gradient. Spanning across broad altitudinal and latitudinal gradient, selected sites differed greatly for various micro-habitat variables. Using standard collection protocols and employing five collection techniques, 173 species belonging to 65 genera in 10 subfamilies were collected including twenty species published as new to science and two genera and six species reported for the first time from India. Varying among sites, species richness was recorded lowest (S = 29) at Manalar and highest (S = 116) at Periyar Tiger Reserve. With little but significant variations among sites, the Shannon-Wiener's species diversity index (H′) was recorded highest (H′ = 2.60) at Periyar Tiger Reserve and lowest (H′ = 2.11) at Idukki Wildlife Sanctuary connoting that sites with lower richness were not necessarily less diverse. Beta diversity (β-diversity) was lowest (19%) between contiguous sites like Thattekkad Bird Sanctuary and Idukki Wildlife Sanctuary and highest between site Manalar and Periyar Tiger Reserve at 68% suggesting that ant species composition distinctly varied in these sites. Our results indicated that only few species were adapted to full spectrum of

First record of the genus Spilomyia (Diptera, Syrphidae) from the Oriental region (https://journals.tubitak.gov.tr/cgi/viewcontent.cgi?article=1181&context=zoology)

Authors

AIJAZ AHMAD WACHKOO (https://journals.tubitak.gov.tr/do/search/?q=author%3A%22AIJAZ%20AHMAD%20WACHKOO%22&start=0&context=26838904)
JEROEN VAN STEENIS (https://journals.tubitak.gov.tr/do/search/?q=author%3A%22JEROEN%20VAN%20STEENIS%22&start=0&context=26838904)
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DOI

10.3906/zoo-1811-27

Abstract

Spilomyia manicata (Rondani, 1865) is reported as a new genus and species record from India and the Oriental region. A brief diagnosis, images, and comparison with allied species are provided to scientifically validate this new faunal record from the Indian subcontinent and to facilitate its prompt identification. The species shows rare distribution across its range, and various factors pose a threat to the existence of this large pollinator species. Therefore, the documentation of this species assumes significance for devising conservation strategies and sustainable management.

Keywords

Spilomyia manicata, Syrphidae, new record, distribution, Indian subcontinent

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Anthrenus (Anthrenodes) himalayensis sp. nov. from Western Himalayas, India (Coleoptera: Dermestidae: Megatominae) (https://journals.tubitak.gov.tr/cgi/viewcontent.cgi?article=1193&context=zoology)

Authors

JİRİ HAVA (https://journals.tubitak.gov.tr/do/search/?q=author%3A%22J%C4%B0R%C4%B0%20HAVA%22&start=0&context=26838904)
AIJAZ AHMAD WACHKOO (https://journals.tubitak.gov.tr/do/search/?q=author%3A%22AIJAZ%20AHMAD%20WACHKOO%22&start=0&context=26838904)
AMIR MAQBOOL (https://journals.tubitak.gov.tr/do/search/?q=author%3A%22AMIR%20MAQBOOL%22&start=0&context=26838904)

DOI

10.3906/zoo-1808-32

Abstract

Anthrenus (Anthrenodes) himalayensis sp. nov., a new dermestid species from Kashmir Himalayas, India is described, illustrated, and compared with similar species. The new species is closest to A. occultus Háva, 2006 and A. katrinkrauseae Háva, 2018 but differs by the structure of antennae, male genitalia, and scale pattern.

Keywords

Taxonomy, new species, Coleoptera, Dermestidae, Megatominae, Anthrenus, India

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Journal of King Saud University - Science

Volume 31, Issue 2, April 2019, Pages 171-176

Subsampling rules for item non response of an estimator based on the combination of regression and ratio

Carlos N. Bouza-Herrera [a], Mir Subzar [b]

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https://doi.org/10.1016/j.jksus.2018.10.006

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1. Introduction

Survey sampling models assume the existence of a finite population $U=\{u_1,\ldots,u_N\}$, where the units are perfectly identifiable, and a sample s of size $n \leq N$ is selected from U. Another assumption is that the variable of interest Y is measured in each selected unit. Unfortunately, in real life, surveys should deal with the existence of some missing observations. The existence of non-response suggests that the population U is divided into two strata: U_1, where are grouped the units that give a response at the first visit, and U_2, which contains the rest of the individuals. This is the so called 'response strata' model and was the framework proposed by Hansen and Hurwitz (1946), see text books as Arnab, 2017, Singh, 2003, and Lohr (2010).

The behavior of estimators based on the use of subsampling depends heavily on the used sub-sampling rule. Alternative sampling rules to Hansen-Hurwitz's rule have been proposed; see for example Srinath, 1971, Bouza, 1981.

ScienceDirect

Flora

Volume 262, January 2020, 151525

Stage-specific ploidy level variations in invasive species in comparison to rare endemics in Kashmir Himalaya ☆

Mudasir A. Dar [a], Gowher A. Wani [a], Zafar A. Reshi [a], Abdul Aziz Al-Qarawi [b], E.F. Abd Allah [b], Manzoor A. Shah [a]

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https://doi.org/10.1016/j.flora.2019.151525

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Highlights

- Our results support a positive relationship between ploidy status and species invasiveness.
- Invaders are largely polyploids while endemics tend to be diploids.
- However, early stage (stage II) invaders and endemics show similar levels of diploidy.
- The ploidy status of invasive species can yield useful insights for biodiversity managers.

Abstract

Issue 7, 2019

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From the journal:
Green Chemistry

Robust and electron deficient oxidovanadium(IV) porphyrin catalysts for selective epoxidation and oxidative bromination reactions in aqueous media †

Tawseef Ahmad Dar,[a] Bhawna Uprety, ‡[a] Muniappan Sankar *[a] and Mannar R. Maurya *[a]

Author affiliations

Abstract

meso-Tetrakis(3,5-dimethoxyphenyl)porphyrinatooxidovanadium (**1**) and β-octabromo-*meso*-tetrakis(2,6-dibromo-3,5-dimethoxyphenyl)porphyrinatooxidovanadium (**2**) were synthesized in excellent yields. The synthesized oxidovanadium(IV) porphyrin complexes were characterized by various spectroscopic methods such as UV-Vis, FT-IR, EPR and MALDI-TOF mass spectrometry, as well as by single crystal X-ray crystallography. The acetonitrile coordinated porphyrin **1** is relatively planar whereas **2** is highly nonplanar as shown by their crystal structures and also by electrochemical studies. Selective epoxidation studies of alkenes were successfully carried out in CH_3CN/H_2O as the solvent mixture at ambient temperature resulting in very high TOF numbers (12 227–14 347 h^{-1} for **2**) even with low catalyst loadings. Remarkably, **2** biomimics the vanadium bromoperoxidase (VBrPO) enzyme with extremely high TOF values (83 333–87 719 h^{-1}) for the oxidative bromination of thymol and some other phenols. Both the catalysts were successfully recovered at the end of the reactions, indicating their viability and industrial applicability.

DOI: 10.1039/C8RA09825E (Paper) *RSC Adv.*, 2019, **9**, 10405-10413

Vanadyl β-tetrabromoporphyrin: synthesis, crystal structure and its use as an efficient and selective catalyst for olefin epoxidation in aqueous medium†

Tawseef Ahmad Dar[a], **Reshu Tomar**[a], **Rasel Mohammad Mian**[b], **Muniappan Sankar** *[a] and **Mannar Ram Maurya** *[a]

[a] *Department of Chemistry, Indian Institute of Technology Roorkee, Roorkee, 247667, India*

[b] *Department of Chemistry, Graduate School of Science, Tohoku University, 6-3 Aza-Aoba, Aramaki, Sendai 980-8578, Japan*

Received 29th November 2018 , Accepted 7th March 2019

First published on 2nd April 2019

Abstract

We hereby report the synthesis, characterization and catalytic applications in the epoxidation of alkenes by a vanadyl porphyrin having bulky bromo substituents at the β-positions *viz.* vanandyltetrabromotetraphenylporphyrin (**1**). The synthesized porphyrin was characterized by various spectroscopic techniques like UV-visible, FT-IR, EPR, MALDI-TOF mass spectrometry and single crystal X-ray analysis. Porphyrin **1** has a nonplanar structure as indicated by its X-ray structure, DFT and electrochemical studies. **1** was analyzed for its catalytic application in the epoxidation of various alkenes. The catalytic reactions were carried out in CH_3CN/H_2O mixture in 3 : 1 (v/v) ratio. **1** displayed good efficiency in terms of mild reaction conditions, lower reaction temperature and minimal catalyst amount consumption. **1** exhibited excellent selectivity, high

A NEW RATIO ESTIMATOR: AN ALTERNATIVE TO REGRESSION ESTIMATOR IN SURVEY SAMPLING USING AUXILIARY INFORMATION.

Authors: Mir Subzar, S. Maqbool, T.A. Raja and Prayas Sharma
Date: Dec. 2019
From: Statistics in Transition New Series(Vol. 20, Issue 4)
Publisher: Exeley Inc.
Document Type: Article
Length: 1,930 words
Lexile Measure: 1430L

Abstract :

The most dominant problem in the survey sampling is to obtain the better ratio estimators for the estimation of population mean or population variance. Estimation theory is enhanced by using the auxiliary information in order to improve on designs, precision and efficiency of estimators. A modified class of ratio estimator is suggested in this paper to estimate the population mean. Expressions for the bias and the mean square error of the proposed estimators are obtained. Both analytical and numerical comparison has shown the suggested estimator to be more efficient than some existing ones. The bias of the suggested estimator is also found to be negligible for the population under consideration, indicating that the estimator is as good the regression estimator and better than the other estimators under consideration. Key words: ratio type estimators, auxiliary information, bias, mean square error, simple random sampling, efficiency. AMS Subject Classification: 62D05

Source Citation

Gale Document Number: GALE|A657476940

Volume 64, Issue 2, 2020

Journal of Scientific Research

Institute of Science,

Banaras Hindu University, Varanasi, India.

Mathematical Study of Heat Transport in Human Dermal Regions Under Normal and Tumour Conditions

Aijaz A. Najar*[1], Rouf Gulzar[2], and Inderdeep Singh[2]

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***Abstract*—The heat transfer models have nowadays engulfed a large domain of scientific research and many researchers are actively involved in it. The understanding of effect of temperature variation and thermal properties of skin under different conditions has a great role in day to day life. The present paper studies the temperature distribution in human dermal regions with a temperature dependent perfusion and an oscillatory boundary condition. A finite difference technique with suitable boundary and interface conditions is used for predicting the temperature pattern inside the normal and tumour skin tissue layers. It has been observed that the presence of sinusoidal heat flux diminishes the temperature amplitude along the tissue depth. The increase in perfusion rate increases the rate of heat loss from the tissues to the blood.**

***Index Terms*—Tumour tissue, Mathematical model, Diffusion, FDM, Tissue Temperature.**

I. Introduction

The heat distribution of skin has been extensively studied for various diagnosis in medical sciences (Lang et al. (1999), Park et al. (2007), Shih et al. (2007)), or even for the study of the physiological functions of healthy individuals (Shusterman et al. (1997)). It has nowadays engulfed a large domain of scientific research and many researchers are actively involved in it. There is a long standing interest in thermal properties of the skin (Stoll, A. M.) in order to understand conditions leading to thermal damage to skin, usually involving contact with the hot objects (Stoll et al. (1979)). Investigations of such bioheat transfer problems requires the elevation of temporal and spatial distributions of temperature. Moreover during the hyperthermia the transfer of heat may be affected by the flow of blood and the vascular geometry. Investigation of thermal properties of skin (Kengne et al. (2012), Dai et al. (2006), El-dabe et al. (2003), Gowrishankar et al. (2004)) leading to thermal injuries are usually studied through the classical equation of Pennes' bioheat equation (Pennes (H. H.)). The circulating blood is about 10% of the total blood volume of a normal human being, therefore the convection diffusion and perfusion of blood plays an important role in the bioheat process (Hall & Guyton (2012)). Due to the seminal work of Pennes' in 1948 (Pennes, H. H.), the researchers like (Dai et al. (2006), El-dabe et al. (2003), Frahm et al. (2010)) began to study the heat transfer in many biological systems with the help of this fundamental equation called Pennes' bioheat equation(Pennes, H. H.)

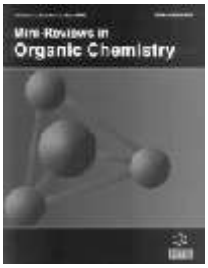
$$\rho c\frac{\partial T}{\partial t} = div(kgradT) - c_b w(T - T_b) + Q_m \qquad (1)$$

where ρ, c, k are the density, specific heat and thermal conductivity of tissue respectively, T_b is arterial blood temperature, t is time, c_b is the specific heat of blood, w is the perfusion rate per unit volume of the blood, Q_m is the metabolic heat generation per unit volume.

The most recent work using an explicit form of finite difference method for estimating the temperature variation in human dermal regions has been studied by Khanday and Fida (Khanday & Fida (2015)) and the temperature variation in the human body along with tumour conditions have been studied recently (Babita & Neeru (2018), Kamangar et al. (2019),Khalid et al. (2017)). However, due to the complex vascular structure in particular and whole body in general,always paves a way for the researchers to improve the existing theoretical models for better understanding and for accurate clinical results. The present paper deals with the temperature distribution in human dermal regions with a temperature dependent perfusion and an oscillatory boundary condition. A finite difference scheme with suitable boundary and interface conditions is used for predicting the temperature pattern inside the normal and tumor skin tissue layers.

*Corresponding Author

DOI: 10.37398/JSR.2020.640231



Synthetic Strategies of Benzothiazines: A Mini Review

Authors: Mir, Shafia; Dar, Ayaz M.; Dar, Bashir Ahmad
Source: Mini-Reviews in Organic Chemistry, Volume 17, Number 2, 2020, pp. 148-157(10)
Publisher: Bentham Science Publishers
DOI: https://doi.org/10.2174/1570193X16666181206101439

Abstract | References | Citations | Supplementary Data

Benzothiazine is a heterocyclic compound consisting of a benzene ring attached to the 6- membered thiazine ring. The benzothiazines constitute the group of heterocyclic compounds as they have found a variety of industrial uses and show promise as herbicides. Besides this, benzothiazines play an important role in the field of drug discovery as they have the potential to act as drug candidates for the treatment of a large number of diseases including, cancer, vasorelaxant, diabetic, hypertension, mycotic infection and microbial infection. The presence of nitrogen-sulphur axis and similarity in the structure with phenothiazine drugs help the benzothiazines to act as drugs for the treatment of a number of diseases. Herein, we represent different synthetic strategies for the simple and multi-component synthesis of benzothiazine heterocyclic derivatives. The strategies mostly involve the use of 2-aminothiophenol, 1, 3-dicarbonyl compounds or α-haloketones. In almost all the strategies, the potential yields have been obtained.

Keywords: 2-Aminothiophenol; benzothiazine; buchwald coupling; heterocyclic compounds; multi-component; phenothiazine

Document Type: Review Article

Publication date: March 1, 2020

More about this publication?

Research Article

ECB. 2020; 9(8): 193-195

THE EXPEDITIOUS OXIDATION OF ARYLBORONIC ACIDS TO PHENOLS BY TERTIARY BUTYL HYDROPEROXIDE IN GREEN AQUEOUS ETHANOL

Ayaz Mahmood Dar, Nisar A Dangroo, Shafia Mir, Bashir Ahmad Dar.

No Audio-Abstract available

Abstract

An efficient protocol for the synthesis of phenols from arylboronic acids has been developed by using t-butyl hydroperoxide (TBHP) as oxidant in water-ethanol as a binary reaction medium. The reaction is metal and additive free and does not require strong basic conditions. The developed protocol has a broad substrate scope and functional group compatibility. Notably the mild conditions, shorter reaction time, good to excellent yields and eco-friendly reaction medium are some important features of the developed method.

Key words: arylboronic acids; tert-butyl hydroperoxide (TBPH); phenols; green method.

Abstract

The study investigates the relationship between corporate governance performance, related party transactions and shareholder activism among listed firms in India. The study provides valuable insights into the impact of shareholder activism on corporate governance performance (CGP) and the occurrence of related party transactions (RPTs). Results infer a significant difference in overall CGP between the firms subjected to shareholder activism and firms not subjected to shareholder activism. The study proposes significant evidence on the close monitoring of the governance practices of the firm by activists' investor and they respond immediately to any evidence of poor governance practice of the firm. A significant difference was found in the amount of sales to RP prior to the incidence of SA than the post incidence of SA for the firms subjected to SA. However, no such difference was found with respect to other major components of RP.

References

Agrawal A., Chadha S. (2005). Corporate governance and accounting scandals. *Journal of Law and Economics*, 48(2), 371–406.

International Journal of Corporate Governance > 2020 Vol.11 No.2

Title: Predicting the threat of shareholder activism among Indian firms: development and application of shareholder activism prediction model

Authors: Ajaz Ul Islam; Sanjay Kumar Mishra; Vikas Srivastava

Addresses: School of Business, Shri Mata Vaishno Devi University, Katra, P.O. SMVDU, Katra, 182320, India ' School of Business, Shri Mata Vaishno Devi University, Katra, P.O. SMVDU, Katra, 182320, India ' Indian Institute of Management, IIM Road, Prabandh Nagar, Mubarakpur, Lucknow, Uttar Pradesh, 226013, India

Abstract: Investigating voting strategies of mutual fund companies, the study developed shareholder activism prediction model (SAPM). Binary panel probit model was used to test the hypothesised model on a sample of firms subjected to shareholder activism (SA) during the period of 2008-2009 to 2014-2015 in India. The SAPM model was found to be adequate. Specifically, governance, related party transactions, remuneration and corporate social responsibility related specific demands were found to significantly predict the probability of threat of SA faced by the sample firms. Subsequently, SAPM model was applied to predict the probability of threat of SA for a sample of S&P BSE 500 companies in India. The findings were utilised to predict the probability that at least one firm in the industry will be subjected to SA for the period FY 2013-2014 to 2015-2016. The predictive accuracy of the model was tested using the observed data for the same period. The findings of binary panel logit model validated the robustness of SAPM.

Keywords: shareholder activism; corporate governance; panel probit; mutual fund; voting; related party transactions; RPTs; emerging market; India; corporate social responsibility; audit quality.

DOI: 10.1504/IJCG.2020.110149

International Journal of Corporate Governance, 2020 Vol.11 No.2, pp.129 - 151

Received: 01 Jun 2019
Accepted: 25 Jan 2020
Published online: 07 Oct 2020 *

ScienceDirect

Biosafety and Health

Volume 2, Issue 4, December 2020, Pages 217-225

SARS-CoV-2: A critical review of its history, pathogenesis, transmission, diagnosis and treatment

Mohd Sharjeel Sofi, Aadil Hamid, Sami Ullah Bhat

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https://doi.org/10.1016/j.bsheal.2020.11.002

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Highlights

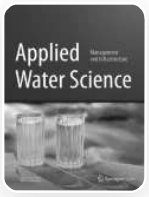
- RT-PCR has become viable choice for diagnosis of human CoV, as multiplex real-time RT-PCR assays have been developed.
- SARS-CoV-2 is quite similar to bat-SARS such as coronavirus $3CL^{pro}$ sharing 99.02% of sequence identity.
- The binding site for substrates is situated in a cleft between domain I and domain II in SARS-CoV-2 $3CL^{pro}$.
- Global cooperation of all government and public health authorities is critical for managing the COVID-19 pandemic.

Abstract

Local determinants influencing stream water quality

Review Article Open access Published: 03 December 2019

Volume 10, article number 24, (2020) Cite this article



Applied Water Science

Aims and scope

Submit manuscript

Aadil Hamid, Sami Ullah Bhat & Arshid Jehangir

Abstract

It is important to have reliable information on various natural and anthropogenic factors responsible for influencing and shaping stream water quality parameters as long as water resource conservation and management planning are concerned from the local to global scale. Daunting environmental pressures at multiple scales makes this necessity more pronounced owing to the special role of stream ecosystems in providing regional services. Understanding how coupled effect of natural and anthropogenic factors controls stream

ScienceDirect

Industrial Crops and Products

Volume 158, 15 December 2020, 113007

Enrichment of alliin in different *in vitro* grown tissues of *Allium sativum* through $CdCl_2$ elicitation as revealed by high performance thin layer chromatography (HPTLC)

Moien Qadir Malik, A. Mujib, Basit Gulzar, Nadia Zafar, Rukaya Syeed, Jyoti Mamgain, Bushra Ejaz, Kanchan

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https://doi.org/10.1016/j.indcrop.2020.113007

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Highlights

- Quantified allin yield in in vitro grown tissues following $CdCl_2$ elicitation.
- Four different concentrations of $CdCl_2$ were added for alkaloid enrichment.
- The accumulation was maximum in leaves; 0.15 mM (T3) is the best treatment.
- $CdCl_2$ caused cellular stress as shown by increased antioxidant enzymes activities.

ScienceDirect

Journal of Genetic Engineering and Biotechnology

Volume 18, Issue 1, December 2020, 31

Review

Genes, proteins and other networks regulating somatic embryogenesis in plants

Basit Gulzar [1], A. Mujib [1], Moien Qadir Malik [1], Rukaya Sayeed [1], Jyoti Mamgain [1], Bushra Ejaz [1]

Show more

https://doi.org/10.1186/s43141-020-00047-5

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Abstract

Background

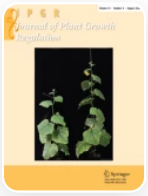
Somatic embryogenesis (SE) is an intricate molecular and biochemical process principally based on cellular totipotency and a model in studying plant development. In this unique embryo-forming process, the vegetative cells acquire embryogenic competence under cellular stress conditions. The stress caused by plant growth regulators (PGRs), nutrient, oxygenic, or other signaling elements makes cellular reprogramming and transforms vegetative cells into embryos through activation/deactivation of a myriad of genes and transcriptional networks. Hundreds of genes have been directly linked to zygotic and somatic embryogeneses; some of them like *SOMATIC EMBRYOGENESIS LIKE RECEPTOR KINASE* (*SERK*), *LEAFY COTYLEDON* (*LEC*), *BABYBOOM* (*BBM*), and *AGAMOUS-LIKE 15* (*AGL15*) are very important and are part of molecular network.

Main text (observation)

Inoculation of *Rhizobium* Alleviates Salinity Stress Through Modulation of Growth Characteristics, Physiological and Biochemical Attributes, Stomatal Activities and Antioxidant Defence in *Cicer arietinum* L.

Published: 15 November 2020

Volume 40, pages 2148–2163, (2021) Cite this article



Journal of Plant Growth Regulation

Aims and scope

Submit manuscript

Zeenat Mushtaq, Shahla Faizan, Basit Gulzar & Khalid Rehman Hakeem

Abstract

Rhizobium is a plant growth-promoting bacteria, generally involved in nitrogen fixation and promotes growth in plants under abiotic-stressed conditions such as salinity. The present study investigates the significance of *Rhizobium* application in alleviation of salt stress in chickpea by increasing cell viability, stomatal movement, photosynthetic pigment and protein content, nitrate reductase, carbonic anhydrase as well as enzymatic and non-enzymatic antioxidant activities. Healthy and viable seeds were inoculated with *Rhizobium* before sowing. Salt treatment was given in terms of NaCl (50 or 150 mM) to the plants through soil at 20 days after sowing. High NaCl level (150 mM) reduced the growth attributes, pigment as well as soluble protein content, altered stomatal behaviour, reduced cell viability and enhanced the formation of superoxide radicals and other

Cadmium chloride ($CdCl_2$) elicitation improves reserpine and ajmalicine yield in *Rauvolfia serpentina* as revealed by high-performance thin-layer chromatography (HPTLC)

Original Article Published: 20 July 2020

Volume 10, article number 344, (2020) Cite this article

Nadia Zafar, A. Mujib, Muzamil Ali, Dipti Tonk, Basit Gulzar, Moien Qadir Malik, Jyoti Mamgain & Rukaya Sayeed

Abstract

In vitro cultures play a promising role for production of pharmaceutically important plant secondary metabolites and the use of elicitation can mitigate the low productivity of active compounds. In the present study, the influence of cadmium chloride ($CdCl_2$) elicitation on alkaloid yield was investigated in *Rauvolfia serpentina*. This heavy metal was employed to enhance the yield of reserpine and ajmalicine in leaf derived callus, leaves, stems and roots

Review Article | Volume: 8, Issue: 3, May-June, 2020

Salt stress, its impacts on plants and the strategies plants are employing against it: A review

Zeenat Mushtaq, Shahla Faizan, Basit Gulzar Author Affiliations

Open Access
Published: May 26, 2020
DOI: 10.7324/JABB.2020.80315

Abstract

Salt stress is said as the most harmful environmental issue affecting the agricultural productivity of many crops, with deleterious effect on plant growth, physiological and biochemical characteristics, vigour, and crop yields. Salt stress induced oxidative stress in plants by generating reactive oxygen species (ROS) that results impairment of cellular membranes, proteins of cells and organelles, especially of mitochondria, chloroplast, and peroxisomes and affects overall integrity of the cell. The various types of ROS are 1O2, H2O2, O2•−, and OH•. Salinity creates osmotic stress in plants that diminishes the root water absorption capacity and causes loss of water from the leaves that increases the accumulation of salts in salt stressed plants. However, plants show tolerance toward salt stress by involving large number of adaptations, for example, osmotic adjustment, ion homeostasis, hormonal regulation, antioxidant defense system, etc. Biosynthesis of plant growth hormones, such as cytokinins, abscisic acid, auxin, jasmonic acid, gibberellin, and ethylene play important role in amelioration of salt stress in plants by altering biochemical and physiological process plant tissues. Plants develop ion homeostasis in order to eliminate additional salt ions from cytosol by primary and secondary transport, maintains the balance of cytosolic concentration of Na+ and K+ ions, thus keeps the low concentration of Na+ ions in cytosol as they are very harmful to cell when present in higher level. Plants develop antioxidant system constituting enzymatic components catalase, glutathione peroxidase, superoxide dismutase, ascorbate peroxidase, monodehydroascorbate reductase, and glutathione reductase and non-enzymatic components, such as glutathione, cysteine, tocopherols, and ascorbate that eliminate or neutralize ROS to cope with the oxidative stress by the antioxidant defense system and protect themselves against detrimental effects of ROS. In this review, we discuss on salt stress lead production of ROS, their formation, effects, and scavenging.

Genome size analysis of field grown and somatic embryo regenerated plants in *Allium sativum* L.

Plant Genetics · Original Paper Published: 09 January 2020

Volume 61, pages 25–35, (2020) Cite this article

Moien Qadir Malik, A. Mujib ✉, Basit Gulzar, Nadia Zafar, Rukaya Syeed, Jyoti Mamgain & Bushra Ejaz

Abstract

In the present study, an efficient in vitro propagation protocol has been developed from clove explants of *Allium sativum* L., one of the oldest vegetable and medicinal plant used worldwide. Garlic is propagated vegetatively as cross-fertilization is strictly precluded due to sterile flowers. Due to a low rate of multiplication, limited genetic improvement possibility and increased germplasm degradation, plant tissue culture becomes an efficient and preferred tool for quality and rapid propagation of garlic. Here, the clove explants were cultured on Murashige and Skoog basal medium amended with different concentrations of Plant Growth Regulators (PGRs) namely 2,4-dichlorophenoxy acetic acid (2,4-D), 6-benzyl amino purine (BAP), and 1-naphthalene acetic acid (NAA). Within 2 weeks of inoculation, white compact callus was formed, maximum callus induction

Taxonomy and geographic distribution of the ant genus *Odontoponera* Mayr, 1862 (Hymenoptera: Formicidae) in India

Authors: Wachkoo, Aijaz Ahmad; Bharti, Himender; Akbar, Shahid Ali
Source: Entomologist's Monthly Magazine, Volume 156, Number 4, 30 October 2020, pp. 245-252(8)
Publisher: Pemberley Books (Publishing)
DOI: https://doi.org/10.31184/M00138908.1564.4049

Taxonomy and distribution of the genus *Odontoponera* in India is herewith detailed. Only one species, *Odontoponera denticulata* is recognized. The male of this species is described for the first time, together with a diagnosis for the genus; queen and worker are redescribed, and images of all castes are provided. Information on the distribution and ecology of this species is also given. In spite of being relatively abundant and well represented in collections, this species has a history of taxonomic confusion which is summarized and resolved here. The discovery of a male caste with its significant apomorphic expressed characters marks an important discovery relevant to the genus.

Keywords: DISTRIBUTION; INDIA; ODONTOPONERA; PONERINAE; TAXONOMY
Document Type: Research Article
Publication date: October 30, 2020

Checklist

ZooKeys 967: 1-142
https://doi.org/10.3897/zookeys.967.54432 (14 Sep 2020)

The Ants (Hymenoptera, Formicidae) of Sri Lar summary and updated checklist

Ratnayake Kaluarachchige Sriyani Dias, Benoit Guénard, Shahid Ali Akbar, Evan P. Economo, W

Abstract

An updated checklist of the ants (Hymenoptera: Formicidae) of Sri Lanka is presented. These in with 341 valid ant species in 79 genera. *Lioponera longitarsus* Mayr, 1879 is reported as a ne depositories, and relevant references to each species record are given. Accounts of the dubious 82 species (24%) are endemic whereas 18 species that are non-native to Sri Lanka are record carried out to date and will serve as a baseline for future studies on the ant fauna of this biodiv

Keywords

Ants, checklist, endemism, Formicidae, Sri Lanka

Introduction

Preliminary contributions toward a revision of the ant genus Temnothorax Mayr(Hymenoptera: Formicidae) from Pakistan (https://journals.tubitak.gov.tr/cgi/viewcontent.cgi?article=1090&context=zoology)

Authors

MUHAMMAD TARIQ RASHEED (https://journals.tubitak.gov.tr/do/search/?q=author%3A%22MUHAMMAD%20TARIQ%20RASHEED%22&start=0&context=26838904)
IMRAN BODLAH (https://journals.tubitak.gov.tr/do/search/?q=author%3A%22IMRAN%20BODLAH%22&start=0&context=26838904)
YUSUPOV ZALIMKHAN MAGOMEDOVICH (https://journals.tubitak.gov.tr/do/search/?q=author%3A%22YUSUPOV%20ZALIMKHAN%20MAGOMEDOVICH%22&start=0&context=26838904)
AMMARA GULL E FAREEN (https://journals.tubitak.gov.tr/do/search/?q=author%3A%22AMMARA%20GULL%20E%20FAREEN%22&start=0&context=26838904)
MUHAMMAD ADNAN BODLAH (https://journals.tubitak.gov.tr/do/search/?q=author%3A%22MUHAMMAD%20ADNAN%20BODLAH%22&start=0&context=26838904)
MATTHEW PREBUS (https://journals.tubitak.gov.tr/do/search/?q=author%3A%22MATTHEW%20PREBUS%22&start=0&context=26838904)
AIJAZ AHMAD WACHKOO (https://journals.tubitak.gov.tr/do/search/?q=author%3A%22AIJAZ%20AHMAD%20WACHKOO%22&start=0&context=26838904)

DOI

10.3906/zoo-2003-54

Abstract

Temnothorax pakistanensis sp. n., a new ant species from Khyber Pakhtunkhwa from the Himalayan range of Pakistan is described based on the worker caste and queen. An identification key and distribution map of the known Pakistani Temnothorax is presented. Summaries of the taxonomic history and biology of the three Temnothorax species of Pakistan is included.

Keywords

Temnothorax, identification key, new species, Himalaya, distribution

First Page

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Last Page

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Protein & Peptide Letters

Editor-in-Chief

ISSN (Print): 0929-8665
ISSN (Online): 1875-5305

Research Article

Deciphering the Nature of Caffeic Acid to Inhibit the HSA Aggregation Induced by Glyoxal

Author(s): Waseem Feeroze Bhat*, Azaj Ahmed, Shabeena Abbass, Mohammad Afsar, Bilqees Bano and Akbar Masood

Volume 27, Issue 8, 2020

Page: [725 - 735] **Pages:** 11

DOI: 10.2174/0929866527666200129105141

Price: $65

Abstract

Background: Under certain circumstances, the path for protein folding deviates and attains an alternative path forming misfolded states, which are the key precursors for protein aggregation. Protein aggregation is associated with variety of diseases and leads to the cytotoxicity. These protein aggregate related diseases have been untreated so far. However, extensive attempts have been applied to develop anti-aggregating agents as possible approaches to overcome protein aggregation. Different types of substances have been reported to halt or decrease the formation of ordered protein aggregates both in vitro and in vivo, such as polyphenols and metal ions.

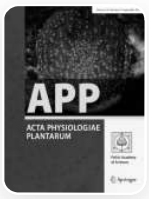
Objective: In the present study the in vitro aggregation of human serum albumin (HSA) by using a reactive dicarbonyl glyoxal has been investigated, simultaneously an attempt has been done to inhibit the glyoxal (GO) induced aggregation of (HSA) by caffeic acid (CA).

Methods: Different methods have been employed to investigate the process, fluorescence spectroscopy, circular dichroism, cango red binding assay, thioflavin T dye binding, turbidimetric analysis, docking study and transmission electron microscopy.

Phenotypic trait variation in invasive and non-invasive alien species of *Potamogeton* in Kashmir Himalayan lakes of varying trophic status

Original Article Published: 20 April 2020

Volume 42, article number 73, (2020) Cite this article



Acta Physiologiae Plantarum

Aims and scope

Submit manuscript

Gowher A. Wani, Zafar A. Reshi, Damase P. Khasa & Manzoor A. Shah

Abstract

Why some alien species become invasive and some of their phylogenetically related congeners do not, is still an intriguing question in invasion biology. Hence, we compared 15 quantitative traits between 4 species of genus *Potamogeton,* of which 3 (*P. crispus, P. nodosus* and *P. natans*) are invasive and one (*P. perfoliatus*) is non-invasive. Regression analyses of the selected quantitative traits, excluding the leaf number, petiole and peduncle length, showed a significant variation amongst the haplotypes of invasive and non-invasive *Potamogeton*. The invasive species consistently showed a higher degree of performance-related traits than

Differential Bioaccumulation of Select Heavy Metals from Wastewater by *Lemna minor*

Published: 12 October 2020

Volume 105, pages 777–783, (2020) Cite this article

Bulletin of Environmental Contamination and Toxicology

Aims and scope

Submit manuscript

Mohd Asgar Khan, Gowher A. Wani, Humeera Majid, Fajroo Ul Farooq, Zafar A. Reshi, Amjad M. Husaini & Manzoor A. Shah

Abstract

The capacity of *Lemna minor* to remediate toxic heavy metals from wastewater is reasonably well documented. In view of the pivotal role of this species in the environmental clean-up, here we evaluated the bioaccumulation potential of *L. minor* for cadmium (Cd), lead (Pb), and nickel (Ni) through a controlled experiment. *L. minor* tolerated the metals Cd, Ni, and Pb up to 0.5, 5, and 8 mg/L, respectively, and beyond these concentrations the toxicity symptoms appeared. Bio-concentration factor varied at different concentrations of heavy metals tested.

Table of Contents

Open Access Article

Phenotypic Variability and Genetic Diversity of *Phragmites australis* in Quebec and Kashmir Reveal Contrasting Population Structure

by
Gowher A. Wani [1,2,*] (mailto:gowher.wani@skuastkashmir.ac.in) (https://orcid.org/0000-0002-227...
9633),
Manzoor A. Shah [1] (mailto:mashah@uok.edu.in),
Honoré Tekeu [2,3] (mailto:honore.tekeu.1@ulaval.ca) (https://orcid.org/0000-0003-1192-7429),
Zafar A. Reshi [1] (mailto:zreshi@kashmiruniversity.ac.in),
Alain R. Atangana [2,4] (mailto:a.atangana@cgiar.org) and
Damase P. Khasa [2] (mailto:damase.khasa@ibis.ulaval.ca)

[1] Department of Botany, University of Kashmir, Srinagar 190006, Jammu & Kashmir, India
[2] Centre for Forest Research (CEF) and Institute for Integrative and Systems Biology (IBIS), Université Laval, Québec, QC G1V0A6, Canada
[3] Department of Plant Biology, Faculty of Science, University of Yaoundé, IPO Box 812 Yaoundé, Cameroon
[4] World Agroforestry, West and Central Africa Region, Cocody, Angré 7ème Tranche B.P. 2823, Abidjan 08 BP 2823, Cote D'Ivoire

Dynamics of Mycorrhizal Mutualism in Relation to Plant Invasion Along an Altitudinal Gradient in Kashmir Himalaya

Published: 11 June 2020

Volume 86, pages 1–38, (2020) Cite this article

The Botanical Review

Aims and scope

Submit manuscript

Mudasir A Dar, Afshana, Aashaq H Sheikh, Gowher A Wani, Zafar A Reshi & Manzoor A Shah

Abstract

In view of the mutualistic facilitation of invasive plants, we examined the mycorrhizal status of 469 species, including 335 alien and 134 native to the region of Kashmir Himalaya, India. Data on the mycorrhizal status and altitudinal range of the target species were obtained using some peer reviewed primary published and web based sources. One sample Z score test and regression analysis were performed to workout the relative proportion of mycorrhizal and non-mycorrhizal plants in different altitudinal belts and relationship of mycorrhizal

Nuclear Physics A

Volume 1005, January 2021, 122089

XXVIIIth International Conference on Ultra-relativistic Nucleus–Nucleus Collisions (Quark Matter 2019)

CBM Collaboration

CBM Collaboration

https://doi.org/10.1016/S0375-9474(20)30414-0

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Role of Major Forest Biomes in Climate Change Mitigation: An Eco-Biological Perspective

| Chapter | First Online: 28 January 2020

| pp 483–526 | Cite this chapter

Socio-economic and Eco-biological Dimensions in Resource use and Conservation

Javid Ahmad Dar, Kothandaraman Subashree, Najeeb Ahmad Bhat, Somaiah Sundarapandian, Ming Xu, Purabi Saikia, Amit Kumar, Ashwani Kumar, Pramod Kumar Khare & Mohammed Latif Khan

Part of the book series: Environmental Science and Engineering ((ENVSCIENCE))

Abstract

ORIGINAL RESEARCH article

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Volume 8 - 2020 |
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This article is part of the Research Topic
Supramolecular Chemistry at the Interface of Environmental and Food Science

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Fused Nickel(II) Porphyrins—Sensing of Toxic Anions and Selected Metal Ions Through Supramolecular Interactions

 Tawseef Ahmad Dar  Muniappan Sankar*

Department of Chemistry, Indian Institute of Technology, Roorkee, India

Ni(II) porphyrins having fused –NH group were synthesized and characterized by various spectroscopic techniques. The fused porphyrins **1** and **2** were used to detect species of opposite polarity. **1** was used to sense toxic anions *viz.* cyanide and fluoride ions whereas **2** was used for detecting some selective metal ions including

| Article

Meso-Tetrapyrenylporphyrins: Synthesis, structural, spectral, electrochemical properties and Förster energy transfer (FRET) studies

Tawseef Ahmad Dar, Amir Sohel Bulbul, Muniappan Sankar, and Karl M. Kadish

https://doi.org/10.1142/S108842462050008X | **Cited by:** 3 **(Source: Crossref)**

< Previous

Abstract

Meso-tetrapyrenylporphyrin and its metal (Co^{II}, Cu^{II}, Ni^{II} and Zn^{II}) complexes were synthesized, characterized and studied for their spectral, electrochemical and energy transfer properties. DFT optimization was carried out to gain an insight into the interactions between the porphyrin π-system and the pyrenyl substituents. The pyrenyl substituents and the porphyrin core remain essentially orthogonal to each other in both the free base and the metallated porphyrins. Redox potentials of the pyrenylporphyrins are marginally shifted as compared to their corresponding phenyl derivatives. Förster resonance energy transfer (FRET) studies were carried out in toluene for free-base pyrenylporphyrin and its Zn(II) complex. Since pyrene is a good donor, an efficient energy transfer from pyrene (D) to the porphyrin core (A) on the order of 80–85% was observed for these two compounds. It was observed that energy transfer occurs mainly *via* ”through-bond” (TB) interaction rather than ”through-space” (TS) interaction.

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Article

DNMT3B Oncogenic Activity in Human Intestinal Cancer Is Not Linked to CIMP or *BRAFV600E* Mutation

Douglas J. MacKenzie,[1] Neil A. Robertson,[1] Iqbal Rather,[1,5] Claire Reid,[1] Gintare Sendzikaite,[1] Hazel Cruickshanks,[1] Tony McBryan,[1] Andrew Hodges,[4] Catrin Pritchard,[2] Karen Blyth,[1,3] and Peter D. Adams[1,4,6,*]

SUMMARY

Approximately 10% of human colorectal cancer (CRC) are associated with activated *BRAFV600E* mutation, typically in absence of *APC* mutation and often associated with a CpG island methylator (CIMP) phenotype. To protect from cancer, normal intestinal epithelial cells respond to oncogenic BRAFV600E by activation of intrinsic p53 and p16-dependent tumor suppressor mechanisms, such as cellular senescence. Conversely, CIMP is thought to contribute to bypass of these tumor suppressor mechanisms, e.g. via epigenetic silencing of tumor suppressor genes, such as p16. It has been repeatedly proposed that DNMT3B is responsible for BRAFV600E-induced CIMP in human CRC. Here we set out to test this by *in silico*, *in vitro*, and *in vivo* approaches. We conclude that although both BRAFV600E and DNMT3B harbor oncogenic potential *in vitro* and *in vivo* and show some evidence of cooperation in tumor promotion, they do not frequently cooperate to promote CIMP and human intestinal cancer.

INTRODUCTION

In normal cells, the BRAF kinase, encoded by the *BRAF* gene, is a critical effector of cell signaling pathways, most notably the RAS-BRAF-MEK-ERK mitogenic pathway. This proto-oncogenic pathway is activated by genetic mutations at some point along the cascade in most human cancers (Yaeger and Corcoran, 2019). Approximately 10% of human CRC are associated with activated *BRAFV600E* mutation. Although inhibitors of activated BRAF, such as Vemurafenib, are of some benefit in other cancers harboring *BRAFV600E*, such as melanoma, in CRC these inhibitors are of limited therapeutic value (Dienstmann et al., 2017). Yet CRC harboring *BRAFV600E* has a poor prognosis (Samowitz et al., 2005b; Ogino et al., 2009). Thus, it is important to understand the oncogenic mechanisms underlying this disease.

Activated *BRAFV600E* mutation is typically found in absence of mutation in the *Adenomatous Polyposis Coli* (*APC*) gene, a gene that is mutated and inactivated in ~80% of CRC (Dienstmann et al., 2017). Activated BRAFV600E drives hyperproliferation and neoplasia via the MEK-ERK mitogenic pathway (Lavoie and Therrien, 2015). However, to protect from cancer, normal intestinal epithelial cells are thought to respond to oncogenic BRAFV600E by activation of intrinsic *TP53* (p53) and *CDKN2A* (p16)-dependent tumor suppressor mechanisms (Rad et al., 2013), including cellular senescence (Carragher et al., 2010; Kriegl et al., 2011). In response to acquisition of an activated oncogene, primary human cells can enter a proliferation-arrested senescent state (oncogene-induced senescence [OIS]) that suppresses tumor formation (Michaloglou et al., 2005; Chen et al., 2005; Braig et al., 2005; Collado et al., 2005; He and Sharpless, 2017). Senescent cells also exhibit an altered secretory program, the so-called Senescence Associated Secretory Phenotype (SASP) (Kuilman et al., 2008; Acosta et al., 2008; Krtolica et al., 2001) comprised of pro-inflammatory cytokines and chemokines, which also contributes to tumor suppression by promoting clearance of senescent cells by the immune system (Lujambio et al., 2013; Xue et al., 2007; Kang et al., 2011).

Conversely, CpG island methylator phenotype (CIMP) is thought to contribute to bypass of tumor suppressor mechanisms by epigenetic silencing of tumor suppressor genes, such as *MLH1* and *CDKN2A* (Lao and Grady, 2011). In CRC, *BRAFV600E* mutation and CIMP are quite tightly linked (Ogino et al., 2009; Weisenberger et al., 2006; Inoue et al., 2015; Nagasaka et al., 2004, 2008; Hinoue et al., 2012; Cancer Genome Atlas

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Colloids and Surfaces A: Physicochemical and Engineering Aspects

Volume 626, 5 October 2021, 127090

Core@shell quantum dots as a fluorescent probe for the detection of cholesterol and heavy metal ions in aqueous media

Irshad Ahmad Mir [a], Sachin Kumar [a], Masroor Ahmad Bhat [b], Xie Yuelin [a], Aijaz Ahmad Wani [c], Ling Zhu [a]

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https://doi.org/10.1016/j.colsurfa.2021.127090

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Highlights

- CIS@ZnS QDs were sensitive to cholesterol, citric acid, Cu^{+2}, and Hg^{+2}.
- Cholesterol generates a new peak at 487 nm in the PL emission of QDs, with cholesterol dependent enhancement.
- Citric acid contributed to the PL quenching in the QDs via electron transfer, without any spectral shift with LOD as 10 nM.
- Cu^{2+} ions showed quenching of QDs due to the formation of ground state complexes and electron transfer between Cu^{2+} and QDs.
- Very low detection limit of 0.2 and 5 nM was observed for Cu^{+2} and Hg^{2+} respectively.

Crystal Research and Technology / Volume 57, Issue 1 / 2100067

Research Article | Free to Read

Green Synthesis of Ag_2S Quantum Dots as Sensing Probe: An Optical Sensor for the Detection of Cholesterol

Irshad Ahmad Mir, Sachin Kumar, Masroor Ahmad Bhat, Quadrat Ullah Khan, Aijaz Ahmad Wani, Ling Zhu

First published: 24 October 2021
https://doi.org/10.1002/crat.202100067
Citations: 1

Abstract

In this study, an environmental-friendly method of preparation is adopted for the synthesis of NIR emitted Ag_2S quantum dots (QDs) with bovine serum albumin (BSA) as a functional capping agent. According to the experimental results, the QDs with an average size of 4.5 nm exhibit their emission peak at 820 nm when excited at 420 nm. Furthermore, these QDs are used for the easy and fast detection of cholesterol (Ch) using the fluorescence (FL) spectroscopic method. These Ag_2S QDs show signs of Ch concentration dependent FL enhancement after Ch-QD complexation and Ch concentration. These QDs are either unchanged or underwent FL quenching in the presence of other studied analytes. Under the optimal conditions, the selectivity and sensitivity of BSA capped QDs for Ch are found to be significantly higher compared with other bioanalytes. In this case, the limit of detection is determined as 50×10^{-9} M. Moreover, this assay demonstrated such advantages as cheap affordability, simplicity, and specificity in terms of Ch sensing.

Conflict of Interest

The authors declare no conflict of interest.

Study of luminescence from terbium doped strontium borate nanophosphors in PMMA

Published: 03 March 2021

Volume 127, article number 218, (2021) Cite this article

Applied Physics A

Aims and scope

Submit manuscript

Sumara Khursheed, Vinay Kumar, Vivek K. Singh, H. C. Swart & Jitendra Sharma

Abstract

$Sr_3B_2O_6:Tb^{3+}$/PMMA luminescent polymer nanocomposite (LPNC) films have been obtained by combustion synthesis of $Sr_3B_2O_6:Tb^{3+}$ nanophosphors (NPs) and their subsequent dispersion in a polymer (PMMA) matrix by the solution casting method. The work presented here reports the experimental investigations of such LPNC films in order to assess their viability for solid state lighting applications. X-ray diffraction data of the LPNC films confirmed the rhombohedral structure with a R-3c space group for the dispersed NPs. The average crystallite size of the NPs in the LPNC films was found to be in the range of (39 ± 2) nm. At an excitation wavelength of 247 nm, the photoluminescence emission spectrum consisted of several lines at 489 nm, 545 nm, 584 nm and 621 nm, respectively,

ISSN: 1522-4821

International Journal of Emergency Mental Health and Human Resilience

Access to all

Language

Abstract

Socio-Demographic Factors as Predictors of Psychological Health Problems in Betrayal Trauma

Bilal Ahmad Teli, Samina Bano, Mohd Altaf Paul

Betrayal trauma theory postulates abuse perpetrated by a caregiver or someone close to the victim results in worse mental health problems than abuse perpetrated by a non-caregiver. The studies have not examined the effect of socio-demographic factors in betrayal trauma on psychological health. Hence the present study was designed to study the effect of socio demographic factors as predictors of psychological health problems in the individuals who suffered from betrayal trauma among young adults. Trauma experienced young adults were taken on purposive basis from different areas of Delhi. A sample of 200 young adults, which comprised of 100 high betrayal traumas and 100 low betrayal traumas were included in the present research with age group ranging from 20-30 years. In order to assess the level of betrayal trauma, psychological health problems, the Brief Betrayal Trauma Survey (BBTS), Trauma Symptom Checklist-40 (TSC-40) and socio-demographic data sheet was included to gather relevant information. Independent T-test and Multiple Regression techniques were used to analyze the data. Conclusion: High betrayal trauma group and females

Rainfall-induced landslide movements using linear regression analysis along national highway 1D (Jammu and Kashmir, India)

Original Article Published: 07 August 2020

Volume 7, pages 1863–1875, (2021) Cite this article

Aadil Manzoor Nanda, Fayaz A. Lone, Pervez Ahmed & Tasawoor Ahmad Kanth

Abstract

Rainfall is recognized as one of the main factors that influence the triggering of landslides in mountainous regions. The National Highway 1D from Sonamarg to Kargil is located in the elevated Greater-Himalaya mountainous region of Jammu and Kashmir, constantly suffering from landslides associated with rainfall events. Under this framework, a statistical study was conducted to study a relationship between landslide and rainfall events along the tough terrain of NH 1D. Out of the 317 landslides, however, only 213 landslides showed

Landslide Susceptibility Zonation along National Highway 1D from Sonamarg to Kargil, North Western Himalaya

Original Article Published: 25 April 2023

Volume 99, pages 570–577, (2023) Cite this article

Journal of the Geological Society of India

Aadil M. Nanda, Zahoor ul Hassan, Pervez Ahmed & T. A. Kanth

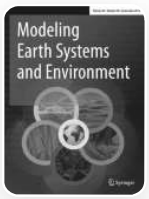
Abstract

The National Highway 1D from Sonamarg to Kargil is known as one of the most landslide susceptible areas in Kashmir and Ladakh divisions. The present study aims to delineate landslide susceptibility zones along National Highway 1D from Sonamarg to Kargil, northwestern (NH) Himalaya. Based on landslide influencing geo-environmental factors such as slope angle, land use/land cover, distance to faults, precipitation, soil, slope aspect, lithology, altitude, distance to streams, and distance to road, a detailed landslide susceptible map is prepared. A weighted pairwise comparison matrix is generated using the Analytical Hierarchy Process (AHP). The geo-environmental factors and their derived weights through AHP were then overlaid using the index overlay module in ArcGIS 10.2 supplemented by MS

Assessment of earthquake-triggered landslides along NH 1D in J&K, India: using multivariate approaches

Original Article Published: 30 October 2021

Volume 8, pages 3679–3686, (2022) Cite this article



Aadil Manzoor Nanda, Maqbool Yousuf, Parvaiz A. Tali, Zahoor Ul Hussan & Pervez Ahmed

Abstract

The aim of this study is to investigate the impact caused by earthquake-induced landslides along NH 1D from Sonamarg to Kargil, J&K, India. We present a newly compiled earthquake dataset of landslide-triggering earthquakes from 1992 to 2016 to understand the relationship between these two geological processes in this region. The comprehensive dataset includes observations of both earthquake-related and landslide-related damages. We

Landslide Susceptibility Zonation along National Highway 1D from Sonamarg to Kargil, North Western Himalaya

Original Article Published: 25 April 2023

Volume 99, pages 570–577, (2023) Cite this article

Journal of the Geological Society of India

Aadil M. Nanda, Zahoor ul Hassan, Pervez Ahmed & T. A. Kanth

Abstract

The National Highway 1D from Sonamarg to Kargil is known as one of the most landslide susceptible areas in Kashmir and Ladakh divisions. The present study aims to delineate landslide susceptibility zones along National Highway 1D from Sonamarg to Kargil, northwestern (NH) Himalaya. Based on landslide influencing geo-environmental factors such as slope angle, land use/land cover, distance to faults, precipitation, soil, slope aspect, lithology, altitude, distance to streams, and distance to road, a detailed landslide susceptible map is prepared. A weighted pairwise comparison matrix is generated using the Analytical Hierarchy Process (AHP). The geo-environmental factors and their derived weights through AHP were then overlaid using the index overlay module in ArcGIS 10.2 supplemented by MS

Title

RESOURCE USE EFFICIENCY OF RICE FARMING IN JAMMU AND KASHMIR, INDIA.

Authors

Lone, Fayaz A; Nanda, Aadil M; Rather, Javeed A; Bhat, M Shafi; Kanth, T A

Abstract

Farming is the most dominant land-use in the Kashmir valley, India. However, the region is characterised by low productivity of agricultural crops that includes rice. To this end, the present study aims to measure economic efficiency of farm land inputs using Cobb-Douglas production model and MVP/MFC ratio. The results reveal that rice production operates at diminishing returns to scale as summation of estimated coefficients of significant variables was found to be less than unity (0.76). Coming to the MVP/MFC ratio, the labour was found to be operating beyond price efficiency frontier, indicating allocative inefficiency of the said resource. The study calls for immediate reallocation of resources so that optimum use of inputs is ensured not only to sustain rice production but also enhance profit maximization of indigent rice farmers in the study area.

Publication

Agricultural Research Journal, 2021, Vol 58, Issue 3, p521

ISSN

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Academic Journal

DOI

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J. Himalayan Ecol. Sustain. Dev. Vol. 16 (2021) **ISSN 0973-7502**

Prioritization of Sub Watersheds Based on Morphometric and Land use Parameters for Integrated Watershed Management of Vishav Watershed, Kashmir Valley

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ABSTRACT

Drainage morphometry and land use planning have become more important in the context of natural resource management. Morphometric analysis is widely used in the prioritization of watersheds. The present work utilizes remote sensing and geographic information system (GIS) approaches to prioritize sub-watersheds in the Vishav basin, J&K, India, based on morphometric and landuse parameters. The Vishav watershed has been divided into eight sub-watersheds (IEIC9a1 to IEIC9a8). Topographic maps of 1971on a 1:50000 scale were utilized to delineate the drainage system and Landsat 8 Operational Land Imager (30m) in Geographical Information System. The drainage morphometric and landuse/landcover (LULC) characteristics determined for each sub-watershed and prioritization was done by assigning ranks and generating a compound value. The sub-watersheds have been characterized into three categories as high, medium and low in terms of priority where IEIC9a5 and IEIC9a8 fall in high priority zone. The sub watershed IEIC9a5 is characterized by high drainage density (2.72 km^2), bifurcation ratio, and drainage texture (4.7km^2), whereas IEIC9a8 has got an alarming built up of 8.99 Km^2. The study calls for an immediate policy intervention in terms of prioritization of watersheds for possible land use planning and management plan.

Keywords: *Vishav, Watershed Prioritization, Morphometric Analysis, Landuse/Landcover, Remote Sensing, GIS.*

INTRODUCTION

Watershed prioritization is the practical application for conservation and management of soil and water resources (Mir *et al.,* 2021). River morphometry is a convenient technique to explain fluvially originated landforms (Barman *et al.,* 2021). Morphometry is the measurement and mathematical exploration of the earth's configuration, its surface, structure, and the dimension of its landforms (Varma *et al., 2020*, Clarke, 1996, Girma *et al., 2020*). A watershed is a geo-hydrological unit and represent a high land area that directs runoff towards a specific point. Because all hydrologic and geomorphic processes take place inside the watershed, morphometric properties reveal important information about its beginnings and growth (Singh *et al.,* 1997). The quantitative evaluation of morphometric features is considered very important in understanding fluvial geomorphology. The impact of morphometric attributes is found to be immense utility in watershed prioritization and natural resource management (Hajam *et al.,* 2013a; 2013b). Morphometry is important in hydrological investigations concerning environmental valuation, pedology and groundwater management (Hajam *et al.,* 2013b). A watershed morphometric analysis gives a numerical description of the drainage system, which is an essential part of characterization (Strahler, 1964). The assessment of linear

Profitability Analysis of Maize Cultivation Across Physiographic Divisions in Kashmir Valley

Fayaz A. Lone[1], Aadil M. Nanda[2], Javeed A. Rather[1], M. Shafi Bhat[1] and G.M. Dar[3]
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J&K Institute of Management, Public Administration and Rural Development-Srinagar.
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ABSTRACT

Maize is one of the most prominent cereal crops grown in the hilly areas of Kashmir valley. Despite the enormous importance in the region, there is hardly any study conducted on profitability analysis of this vital crop which increasingly is at the risk of constrained-resource environment. In this end, the present study aims to analyse the profitability of maize cultivation through the prism of landform characteristics in the region. For empirical estimation, the study relies on cross-sectional field survey of 430 farmers. The study employed gross returns, net returns, and cost benefit ratio to analyse the ratio between the cost structure and revenue generated in the maize cultivation. The current estimates of budgetary analysis revealed that comparatively foothills possess better economic feasibility for the cultivation of maize crop although CBR exceeds 1:1.37 in each physiographic unit. A net income of Rs. 1272.72/kanal for pooled sample indicates that maize cultivation is not profitable enough to provide growth impulses in the region. The study calls for government intervention so that small holder maize farmers are given sufficient subsidies, extension services and farm advisories to enhance productivity of maize and at the same time reduce the cost significantly to ensure maximum profit.
Keywords: *Profitability, Physiography, Gross Returns, Net Returns, Cost Benefit Ratio*

INTRODUCTION

The etymology of the term maize (Zea Mays) can be traced from Spanish origins "Taino Mahiz" although it is a crop which was originally domesticated by the inhabitants of Meso-Americans in the pre-historic times. It was introduced in the Indian sub-continent during the 16th century by the Portuguese, but it remained a cultivated novelty until 19th century when the real push to grow maize was favoured as part of the commercial agriculture by the Agri-Horticultural societies of British. Mize naturally became embedded in the cultures of Himalayan people through trade and commercialisation of agriculture.

Maize is one of the most important cereal crops grown all over the world, although there are major differences in yields (Rahman and Lawal 2003; Fao, 2012). Owing to its versatile adaptability to varying edaphic and climatic conditions, it is grown in more than 166 countries. In fact, maize has highest production worldwide, accounting 1.11 billion metric tons in the year 2018/19. According to U.N. Food and agricultural organization, maize along with wheat provide essential nutrients and health benefits by contributing 55-70 percent of the total calories in the diets of people living in developing countries. Besides being a cornerstone food crop for human nutrition, maize has tremendous international demand in terms of animal feed and ethanol for fuel.

Maize is a prominent cereal crop, widely cultivated in the hilly areas of Kashmir valley under rain-fed system (Wani *et al*., 2012). However, maize production has witnessed a significant decline in the entire region of J&K and the current trend of maize production has been sustained by the area expansion, while both productivity effect

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Materials Today: Proceedings

Volume 56, Part 6, 2022, Pages 3254-3260

Plastic Material Degradation and Formation of Microplastic in the Environment: A Review

Shaista Manzoor, Nafiaah Naqash, Gowhar Rashid, Rahul Singh [1]

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https://doi.org/10.1016/j.matpr.2021.09.379

Abstract

The threats caused by degraded plastic elements are of major concern amongst the scientist community these days. The concern has been highlighted many times under many titles like micro plastic as multiple stressors, micro plastic an emerging pollutant and many more. The literature pertaining to this issue has never brought biological, chemical and physical aspects together. Without such interdisciplinary approach the complexity and severity of the problem cannot be revealed. Micro plastics affect physical property of aquatic body by altering light penetration, chemistry by oxygen depletion, biological ecosystem by adhering to different biota along with penetration and accumulation in body of aquatic organisms. The indirect entry of microplastic in human beings by consuming aquatic products and thereby effecting health is of immediate and utmost concern. Here we review, the research data generated so far concerning prevalence of Microplastics and their impact on different organisms through various routes.

The present review paper emphasizes types of plastic, role of additives in enhancing quality, degradation and transformation of plastics, impact on aquatic life and

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Science of The Total Environment

Volume 806, Part 2, 1 February 2022, 150548

Ceratophyllum demersum-An accretion biotool for heavy metal remediation

Humaira Qadri, Baba Uqab, Ovais Javeed, Gowhar Hamid Dar, Rouf Ahmad Bhat

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https://doi.org/10.1016/j.scitotenv.2021.150548

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Highlights

- *C. demersum* is the dominant colonizer in eutrophic Dal lake.
- The order of metal uptake efficiency of *C. demersum* is Co>Cd>Mn>other metals.
- The carbohydrate- protein plot reveals positive correlation with metals.
- Uptake of Cr and Mn is synergistic to lipid-proteins.
- *C. demersum* can be used as an efficient remediation tool for heavy metals.

Abstract

Freshwater habitats are under serious threat due to the diverse pressures of development and restoration of these ecosystems is an important challenge in the present era. With a number of scientifically advanced methods available for restoration of these systems, phytoremediation finds its unique space as an ecologically sustainable technique. In this

ScienceDirect

Chemosphere

Volume 287, Part 3, January 2022, 132223

Vulnerability of municipal solid waste: An emerging threat to aquatic ecosystems

Rouf Ahmad Bhat [a], Dig Vijay Singh [a], Humaira Qadri [b], Gowhar Hamid Dar [b], Moonisa Aslam Dervash [a], Shakeel Ahmad Bhat [c], Bengu Turkyilmaz Unal [d], Munir Ozturk [e], Khalid Rehman Hakeem [f], Balal Yousaf [g h]

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https://doi.org/10.1016/j.chemosphere.2021.132223

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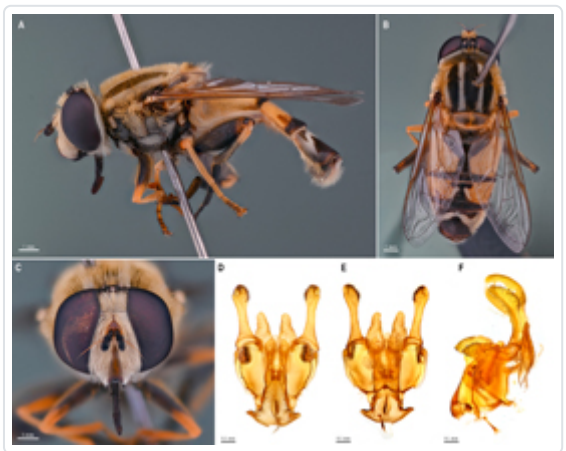
Highlights

- Dumping waste materials into aquatic ecosystems poses a danger to all life forms.
- Deadly impacts of solid wastes on different ecosystem components are presented.
- MSW release concentrated contaminants, which are lethal for all ecosystems.
- Availability and long-term risks of contaminants from MSW are explained.

Abstract

Dumping waste materials into aquatic ecosystems leads to pollution, which directly and indirectly poses a danger to all life forms. Currently, huge quantities of wastes are

Journal of Insect Biodiversity



ISSUE: VOL. 29 NO. 2: DECEMBER 2021 TYPE: ARTICLE
PUBLISHED: 2021-12-20 DOI: 10.12976/JIB/2021.29.2.3
PAGE RANGE: 44–52 ABSTRACT VIEWS: 721 PDF DOWNLOADED: 5

Two flower fly species (Diptera: Syrphidae) new to India

AIJAZ AHMAD WACHKOO[+], JEROEN VAN STEENIS[+],
AMIR MAQBOOL[+], SHAHID ALI AKBAR[+],
JEFFREY H. SKEVINGTON[+], XIMO MENGUAL[+]

SYRPHIDAE • DNA BARCODING • NEW RECORDS • DISTRIBUTION • INDIA

PDF (11MB)

Abstract

Based on adult morphology and DNA barcoding, two flower fly species are reported for the first time from India: *Helophilus trivittatus* (Fabricius, 1805) and *Lejogaster tarsata* (Megerle *in* Meigen, 1822). These species were collected from the Kashmir Valley, in the northern fringe of the Western Himalaya of the Indian subcontinent.

References

Bańkowska R. 1969. Beitrage zur Kenntnis der Fauna Afghanistans (Sammelergebnisse von O. Jakeš 1963–64, D. Povolný 1965, D. Povolny & Fr. Tenora 1966, J. Šimek 1965–66, D. Povolný, J. Gaisler, Z. Šebek & Fr. Tenora 1967). Syrphidae, Diptera. *Acta Musei Moraviae* 54 (Suppl.): 277–286.

A conspectus of the picture-winged flies (Diptera: Ulidiidae) of India

Authors: Yatoo, Suhaib Firdous; Maqbool, Amir; Wachkoo, Aijaz Ahmad
Source: Entomologist's Monthly Magazine, Number 4, 29 October 2021, pp. 285-291(7)
Publisher: Pemberley Books (Publishing)
DOI: https://doi.org/10.31184/M00138908.1574.4084

An overview of the Ulidiidae fauna of India is presented. Five species *Euxesta pechumani*, *Myennis octopunctata*, *Physiphora alceae*, *P. clausa* and *P. euphorbiana* are recognized. The report of *Euxesta pechumani* is the first record of the genus from India. Diagnosis, general distribution and notes on biology of all these species are provided.

Keywords: CONSPECTUS; DIPTERA; INDIA; NEW RECORD; ULIDIIDAE
Document Type: Research Article
Publication date: October 29, 2021

European Journal of Taxonomy 764: 18–36
https://doi.org/10.5852/ejt.2021.764.1467
ISSN 2118-9773
www.europeanjournaloftaxonomy.eu
2021 · Zubair R.M. *et al.*

Research article

urn:lsid:zoobank.org:pub:5A7D12E9-39DE-4A91-8811-FB1B8B11D190

A review of the Himalayan genus *Trypheridium* Brancucci (Coleoptera: Cantharidae: Chauliognathinae) with description of a new species

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[3] urn:lsid:zoobank.org:author:6F19EB1F-5DDC-4722-BBD3-F75C29F901D9
[4] urn:lsid:zoobank.org:author:1F5A526D-13F0-4A33-AA33-D9B7497E5689

Abstract. The genus *Trypheridium* Brancucci, 1985 is endemic to the Hindu Kush Himalayan Region, and is currently known from a single species, *T. nuristanicum* (Wittmer, 1956). Here, the genus is reviewed, *T. nuristanicum* nom. emend. is re-described and *T. kashmiricum* sp. nov. is described from Kashmir Himalayan Region of India. Descriptions, diagnoses, high quality images, distribution maps and identification keys are presented. The morphology and distribution of *Trypheridium* are discussed and compared with those of the closely related genus *Trypherus* LeConte, 1851.

Keywords. Ichthyurini, Himalaya, Kashmir, morphology, taxonomy.

Zubair R.M., Maqbool A., Wachkoo A.A. & Biffi G. 2021. A review of the Himalayan genus *Trypheridium* Brancucci (Coleoptera: Cantharidae: Chauliognathinae) with description of a new species. *European Journal of Taxonomy* 764: 18–36. https://doi.org/10.5852/ejt.2021.764.1467

Introduction

The genus *Trypheridium* Brancucci, 1985 was originally described from the Hindu Kush Himalayan Region, for a single species *Trypherus nuristanicus* Wittmer, 1956 based on distinct morphological characters and disjunct distribution. Superficially, *Trypheridium* resembles *Trypherus* LeConte, 1851 but can be distinguished from the latter by 'aberrant' sexual characters and unmodified mid legs (Brancucci 1985a).

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Research article
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Taxonomic review of the ant genus *Lepisiota* Santschi, 1926 (Hymenoptera: Formicidae: Formicinae) from India

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[3] urn:lsid:zoobank.org:author:5A0AC4C2-B427-43AD-840E-7BB4F2565A8B

Abstract. The species-rank taxonomy of the genus *Lepisiota* Santschi, 1926 in India is revised. Thirteen species are recognized, with two described as new: *L. layla* sp. n. and *L. mayri* sp. n. The three previously infraspecific taxa *L. integra* stat. nov., *L. pulchella* stat. rev. and *L. wroughtonii* stat. rev. are elevated to species rank. Four species or subspecies are excluded from the Indian *Lepisiota* fauna: *L. capensis* (Mayr, 1862), *L. frauenfeldi* (Mayr, 1855), *L. rothneyi watsonii* (Forel, 1894), and *L. simplex* (Forel, 1892) for issues related to previous doubtful distribution or species misidentifcation. An identification key to the worker caste of Indian *Lepisiota* species is provided.

Keywords. Ants, Formicinae, key, *Lepisiota,* new species, new status, revived status, India.

INTRODUCTION

The formicine ant genus *Lepisiota* Santschi, 1926 contains 138 species and subspecies, including two that are newly described here (Sharaf et al. 2020; Bolton 2021), and is widespread in the grasslands, savannahs or woodlands of the Afrotropical, Indomalayan, and Palearctic regions (Brown 2000; Hita Garcia et al. 2013). The taxonomy of the genus is in a dreadful condition with the lack of any revisionary studies for most of the zoogeographical regions of the World (Sharaf et al. 2020). However, a number of authors have published isolated species descriptions and updated, taxonomic revisions for several regional faunas (Sharaf et al. 2020; Bolton 2021).

The *Lepisiota* fauna of India is poorly known. Most of the species and infraspecific taxa are poorly defined and have been treated under different genera. Apart from the major contributions in the late nineteenth and the early twentieth century (Forel 1892, 1894, 1895, 1902a; Bingham 1903), and subsequent isolated treatments (Mukerjee 1930; Bharti 2002), the fauna has been neglected taxonomically.

In this study, we revise the species-rank taxonomy of the ant genus *Lepisiota* for India. We describe the two new species *L. layla* and *L. mayri* and recognize the three poorly defined sympatrically distributed infraspecific taxa *integra, pulchella* and *wroughtonii,* at species rank. The data reported herein represent the first deep insight of the Indian *Lepisiota* with the hope of correcting some of the taxonomic neglect that has plagued the Indian Formicinae (Bharti & Wachkoo 2012, 2014a, b; Wachkoo & Bharti 2015a, b).

MATERIAL AND METHODS

The taxonomic study was conducted on a Nikon SMZ 1500 stereoscope. For digital images, MP Evolution digital camera was used on the same microscope with Auto-Montage (Syncroscopy, Division of Synoptics, Ltd.) software. Later, images were cleaned with Adobe Photoshop CS5.

Institutional abbreviations

MHNG = Museum of Natural History, Geneva, Switzerland
MSNG = Natural History Museum, Genoa, Italy
NHMUK = Natural History Museum, London, UK
PUAC = Punjabi University Patiala Ant Collection, Punjab, India

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Article

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First record of the myrmicine ant genus *Syllophopsis* Santschi, 1915 (Hymenoptera: Formicidae) from India with description of a new species

SHAHID ALI AKBAR[1], HIMENDER BHARTI[2], MARIUSZ KANTURSKI[3] & AIJAZ AHMAD WACHKOO[4*]

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Abstract

Here we describe and illustrate *Syllophopsis peetersi* **sp. nov.** from Silent Valley National Park, a biodiversity hotspot region of the Western Ghats of India. The discovery also marks a first native report of the genus from the Indian subcontinent. Scanning Electron Microscopy (SEM) analysis was carried out to elucidate the general morphology and sensilla of the new species. The new species is similar to congeners from Madagascar, but with larger differences from species that occur elsewhere.

Key words: *Syllophopsis*, ants, new species, worker caste, Western Ghats, India

Introduction

The myrmicine ant genus *Syllophopsis* was established by Santschi (1915) for the species *Syllophopsis modesta* (Santschi, 1914). Bolton (1987) synonymized the genus *Syllophopsis* under *Monomorium* Mayr, 1855. Although monophyly of the genus was weakly supported, Ward *et al.* (2015) resurrected *Syllophopsis* as a valid genus. In the same paper the genus *Monomorium* was split into other valid genera including *Epelysidris*, *Erromyrma*, and *Trichomyrmex*. It remains highly suggestive that the genus *Monomorium* is still paraphyletic with embedded genus-level taxa and probably will see further changes with time (Heterick 2006; Ward *et al.* 2015; Sharaf *et al*. 2020, 2021). Most of the taxonomic research that involves *Syllophopsis* species was conducted on what were thought to be *Monomorium* species, e.g. Bolton's (1987) description of ten *Syllophopsis* species and Heterick's (2001, 2006) revision of the *Monomorium* of Australia and the Malagasy region. The *hildebrandti* group, as created by Heterick (2006), are all *Syllophopsis* species. Recent studies on the genus include those of Sharaf (2007), Sharaf & Aldawood (2013), Aldawood (2016) and Wetterer (2020). The genus currently includes 22 valid species globally (AntWeb 2021), out of which 17 species are reported from the greater Afrotropical region (Wetterer 2020). *Syllophopsis sechellensis* is the only known widespread species of the genus, reported across Afrotropics, Indomalaya, Australasia, Oceania, Palearctic, and Neotropic regions (Wetterer & Sharaf 2017).

The genus *Syllophopsis* has no strong diagnosis, and the members are very similar in appearance to members of the genus *Monomorium*. Some of the distinguishing characters among the two genera are: anteromedian seta on the clypeus situated under a protruding ledge, compared to the seta being on or just above the anterior margin in *Monomorium*; mandibles five-toothed, compared to more often three- or four-toothed in *Monomorium*; the propodeum is strongly angulate, compared to more often rounded or smoothly angulate in *Monomorium* (however, strongly angulate in some African *Monomorium* species). Species belonging to the genus *Solenopsis* also resemble *Syllophopsis*, but can be differentiated by a 2-segmented terminal antennal club compared with 3-segmented antennal

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Research article
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SEM morphology and courtship rituals of a new species of *Rhamphomyia* (Diptera: Empididae: Empidinae) from the Kashmir Himalayas (India)

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Abstract. *Rhamphomyia bhagati* Barták, Akbar, Kanturski, Wachkoo & Maqbool sp. nov. (Diptera: Empididae) is described and illustrated based on male and female specimens. The discovery marks the first record of the genus *Rhamphomyia* from the Kashmir Valley. Scanning Electron Microscopy (SEM) analysis was carried out to elucidate the general morphology and sensilla of the male and female specimens. The species is most prevalent during April and early May. The male provides female with a nutritious prey, as a courtship gift through a series of rituals discussed herewith.

Keywords. Empididae, *Rhamphomyia*, courtship, Kashmir valley, India, new species.

INTRODUCTION

Empidinae (Diptera: Empididae) is a subfamily of dipteran flies with over 3,000 described species and many still undescribed (Thompson 2005; Yang et al. 2007; Pape et al. 2011). These flies occur worldwide with majorities found in the Holarctic region, exhibit enormous structural diversity and inhabit a broad range of biotopes (Sinclair & Cumming 2006; Moulton & Wiegmann 2007). These are commonly known as balloon or dance flies, which characterizes their elaborate mating displays, aerial swarming, nuptial gift transfers, and other courtship rituals (Cumming 1994).

The subfamily is divided into two tribes (i.e., Empidini and Hilarini) centered on three megadiverse genera: *Empis* Linnaeus, 1758, *Rhamphomyia* Meigen, 1822 (tribe Empidini), and *Hilara* Meigen, 1822 (tribe Hilarini), and around 27 other smaller genera (Watts et al. 2016). Large gaps in the taxonomic knowledge of the subfamily remain for most regions of the world, especially in the Southern Hemisphere (Sinclair & Cumming 2006). Limited literature is also available on the Indian fauna. Apart from some old works by Walker (1849), Bigot (1889), Bezzi (1904), Brunetti (1913, 1917, 1920) and Collin (1960), no recent pertinent literature is available. Of 57 species of Indian Empididae, the subfamily Empidinae in India currently comprises about 20 species belonging to four genera (Brunetti 1920; Collin 1960; Alfred et al. 1998; Mitra et al. 2015); however, like other Indian flies these have not been the subject of a dedicated study and the true number of species is still unknown (Shah et al. 2014; Wachkoo et al. 2017).

The megadiverse genus *Rhamphomyia* is the most speciose of dance flies, currently represented by almost 610 known species globally (Barták & Kubík 2012; Saigusa 2012; Barták et al. 2014; Rhodén & Wahlberg 2020), and with many unpublished records, likely to increase to about 1,500 species (Sinclair et al. 2019). These flies thrive in mountainous regions with an enormous radiation in the Holarctic region and are well represented in the arctic en-

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27 April 2021

Neotype designation and redescription of *Sicus indicus* Kröber, 1940 (Diptera: Conopidae)

Amir Maqbool, Aijaz Ahmad Wachkoo, Jens-Hermann Stuke, Shahid Ali Akbar, David K. Clements

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Zoosystema, 43(11):197-203 (2021). https://doi.org/10.5252/zoosystema2021v43a11

Abstract

A neotype is designated for *Sicus indicus*Kröber, 1940, the original type material of which is lost. This species is accepted as valid (rev. stat.) and is redescribed and illustrated from material collected in the Kashmir Valley of the Western Himalayas of India. *Sicus indicus* is distinguished from other *Sicus* Scopoli, 1763 species primarily by the shape and configuration of the female theca, and also by the long ventral setulae on the hind femur which are otherwise only shared with the very dissimilar *S. ferrugineus* (Linnaeus, 1761). Two other species with very similar-looking thecae in the female, i.e. *S. abdominalis*Kröber, 1915 and *S. ogumae* (Matsumara, 1916), are distinguished by differences in colouration, dusting and setulation, the latter particularly with respect to the small sclerite at the inner hind edge of the hind coxa. *Sicus indicus* is the only species of the genus definitely recorded from India to date, and is confined to the Himalayan region.

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ScienceDirect

Clinical eHealth

Volume 4, 2021, Pages 67-73

Coronavirus disease-2019 and its current scenario – A review

Showkat Ahmad Bhat, Gurjinder Singh, Waseem F. Bhat, Kumudini Borole, Ashraf Ali Khan

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https://doi.org/10.1016/j.ceh.2021.09.002

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Abstract

Coronaviruses are enveloped non-segmented positive-sense RNA viruses belonging to the family Coronaviridae. The human coronavirus infections are mild; the epidemics of the two β-coronaviruses, severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle East respiratory syndrome coronavirus (MERS-CoV) have caused more than ten thousand cumulative cases in the past twodecades. There is a new public health crisis threatening the world with the emergence and spread of 2019 novel coronavirus (2019-nCoV). The virus originated in bats and was transmitted to humans through yet unknown intermediary animals in Wuhan, Hubei province in China during the month of December 2019. Till date around 7,823,289 reported cases of coronavirus disease 2019 (COVID-2019) and 431,541 reported deaths till date. The disease is transmitted by inhalation or contact with infected droplets with incubation period of 2–14days. The symptoms are usually fever, sore throat, dry cough, breathlessness, fatigue while many people are asymptomatic. Coronavirus (2019-nCoV) may progress to pneumonia, acute respiratory distress syndrome (ARDS) and can cause multi-organ dysfunction. Currently diagnosis is done by demonstration of the virus in respiratory secretions by special molecular tests like real-time reverse-transcription–polymerase-chain-reaction (RT-PCR), Radiological examinations (chest CT). Common laboratory tests like white cell counts and C-reactive protein (CRP) and measure symptoms can be used as preliminary screening at large scale

Causal relationship between mafic magma underplating and migmatization of arc crust: Evidence from the Madras block of Southern Granulite terrane, India

Published: 11 August 2021

Volume 130, article number 161, (2021) Cite this article

Journal of Earth System Science

Aims and scope

Submit manuscript

Mohd Azhar Ul Haq, S Balakrishnan, Rajneesh Bhutani & Jitendra K Dash

Abstract

Neoarchean migmatized granodioritic gneisses and mafic enclaves from the Madras block of the Southern Granulite Terrain (SGT) were studied to understand their genetic relationship. The gneisses show calc-alkaline trend, more magnesian than tonalites, enrichment of LILE and LREE with HFSE depletion, and zero to slightly negative ε_{Nd} values (t=2600 Ma) which indicate their precursors fractionated from sanukitoid magma generated by partial melting of hybridized mantle sources. Gabbroic magmas representing mafic enclaves with ε_{Nd} values, −1.68 to +0.45, formed by partial melting of fluid metasomatised mantle wedge and hybridized by interaction with granite magma. Underplating of these mafic magmas provided heat to trigger anatexis of the granodioritic

Back

Research Article | Open Access

Enhanced Estimators of Population Variance with the Use of Supplementary Information in Survey Sampling

Showkat Ahmad Lone, Mir Subzar, Ankita Sharma

First published: 26 April 2021
https://doi.org/10.1155/2021/9931217
Citations: 4

Academic Editor: Ishfaq Ahmad

Abstract

In the present study, we propose the proficient class of estimators of the finite population mean, while incorporating the nonconventional location and nonconventional measures of dispersion with coefficient of variation of the auxiliary variable. Properties associated with the suggested class of improved estimators are derived, and an efficiency comparison with the usual unbiased ratio estimator and other existing estimators under consideration in the present study is established. An empirical study has also been provided to validate the theoretical results. Finally, it is established that the proposed class of estimators of the finite population variance proves to be more efficient than the existing estimators mentioned in this study.

1. Introduction

It is very quite often that utilization of supplementary information in survey sampling which has some sort of strong positive or negative correlation with the response variable is always found to be advantageous. So for the utilization of such information, various methods in survey sampling are presently used to increase precision, with the incorporation of these supplementary information, in estimating the population parameters. Various authors have put their sincere efforts to utilize supplementary information with different sampling designs in different situations in such a way that their estimation procedure becomes more proficient; for details see [1–12]. It is very often that some of the measures are so much affected by extreme observations and can give misleading results. In case of extreme values, using classical methods of estimation provides misleading results, but authors have also put their valuable efforts to come up with solutions to this situation, so that precise results should be obtained even with the presence of outliers in the data. Authors such as Subzar et al. [13] have proposed different robust ratio type estimators in simple random sampling

Clonality in invasive alien macrophytes in Kashmir Himalaya: a stage-based approach

Research Article Published: 17 December 2021

Volume 84, article number 12, (2022) Cite this article

Gowher A. Wani, Mohd Asgar Khan, Afshana, Mudasir A. Dar, Honoré Tekeu, Manzoor A. Shah, Zafar A. Reshi & Damase P. Khasa

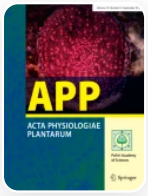
Abstract

While the link between clonality and species invasiveness has recently been recognized, whether and how clonality vary with different invasion stages remains open questions. Hence, we tested the relationship between clonality and species invasiveness of Kashmir Himalayan aquatic macrophytes vis-à-vis its variability along different stages of invasion. The data on clonality, stage of invasion and growth form were obtained through an extensive survey of literature and database like CLO-PLA and PLADIAS followed by evaluation of the clonal organs through intensive field surveys undertaken over a period of 3 years (2014–2017) in different aquatic habitats of the Kashmir valley. Our results showed that 84% of the studied species and almost 90% of the most invasive species (stage V*sensu* Colautti and MacIsaac: Divers Distrib 10(2):135–141, 2004) are clonal. A

Is ploidy status related to growth form? Insights from the alien flora of Kashmir Himalaya

Original Article Published: 16 November 2021

Volume 43, article number 164, (2021) Cite this article



Acta Physiologiae Plantarum

Aims and scope

Submit manuscript

Mudasir A. Dar, Afshana, Gowher A. Wani, Manzoor A. Shah & Zafar A. Reshi

Abstract

Whether ploidy status of plant species is related to their growth form is not well supported by quantitative data despite having been speculated a lot. Deciphering this relationship has a lot of implications for understanding the current distribution patterns of alien plant species in different biogeographical regions both at global and regional scales. Hence, we tested the relationship between ploidy status and growth form in 390 alien plant species of Kashmir Himalaya, India. Ploidy data were obtained through standard published literature and web-based sources. Comparison of the relative proportion of diploids and polyploids within each growth form was carried out followed by a comparison between different growth forms and also between some major families of alien plants of the Himalayan region. The results showed that alien aquatic plant species have a remarkably higher percentage of polyploids (81.48%) than diploids (18.52%). Among the terrestrial

ScienceDirect

Heliyon

Volume 7, Issue 5, May 2021, e07068

Review article

Saffron: A potential drug-supplement for severe acute respiratory syndrome coronavirus (COVID) management

Amjad M. Husaini, Khan Nadiya Jan, Gowher A. Wani

Show more

https://doi.org/10.1016/j.heliyon.2021.e07068

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Abstract

Severe acute respiratory syndrome coronavirus 2, SARS-CoV-2 (COVID-19), came as a significant health care challenge for humans in 2019–20. Based on recent laboratory and epidemiological studies, a growing list of mutations in the virus has the potential to enhance its transmission or help it evade the immune response. To further compound the problems, there are considerable challenges to the availability of effective, affordable, safe vaccines on a mass scale. These impediments have led some to explore additional options available in traditional medicines, especially immune-boosting natural products. Saffron has been used for centuries to treat fever, bronchitis, cold and other immune, respiratory disorders. Herein, we discuss the potential role of saffron during and after COVID-19 infection, focusing on immunomodulation, respiratory, renal, and cardiovascular functions. As a nutraceutical or drug supplement, it can alleviate the magnitude of COVID-19 symptoms in patients. The anti-inflammatory, antioxidant, and other medicinal properties attributed to saffron bioactive compounds can help in both pre-and post-infection management strategies. The abnormalities associated with COVID-19 survivors include anxiety, depression, sleep disturbances, and post-traumatic

Next Generation High Throughput Sequencing to Assess Microbial Communities: An Application Based on Water Quality

Focused Review Published: 27 March 2021

Volume 106, pages 727–733, (2021) Cite this article

Bulletin of Environmental Contamination and Toxicology

Aims and scope

Submit manuscript

Gowher A. Wani, Mohd Asgar Khan, Mudasir A. Dar, Manzoor A. Shah & Zafar A. Reshi

Abstract

Traditional techniques to identify different contaminants (biological or chemical) in the waters are slow, laborious, and can require specialized expertise. Hence, the rapid determination of water quality using more sensitive and reliable metagenomic based approaches attains special importance. Metagenomics deals with the study of genetic material that is recovered from microbial communities present in environmental samples. In traditional techniques cultivation-based methodologies were used to describe the diversity of microorganisms in environmental samples. It has failed to function as a robust marker because of limited taxonomic and phylogenetic implications. In this backdrop, high-throughput DNA sequencing approaches have proven very powerful in

Heavy metal contamination in two commercial fish species of a trans-Himalayan freshwater ecosystem

Published: 26 January 2019

Volume 191, article number 104, (2019) Cite this article

Environmental Monitoring and Assessment

Aims and scope

Submit manuscript

Mohammad Aneesul Mehmood, Humaira Qadri, Rouf Ahmad Bhat, Asmat Rashid, Sartaj Ahmad Ganie, Gowhar Hamid Dar & Shafiq-ur-Rehman

Abstract

Toxic metals have disturbed the quality of freshwater ecosystems worldwide. The concentration of heavy metals was investigated in liver, gills and muscle tissues of *Schizothorax niger* and *Cyprinus carpio* captured from river Jhelum of Kashmir Himalaya. The heavy metals displayed a wide range of disparity in studied tissues, seasons, sites and species. Cu^{2+} exhibited the highest concentration (279.6 μg/kg) in the liver tissues of *S. niger* in autumn at site 2 and the lowest (53.1 μg/kg) in the gill tissues in winter at site 1. In *C. carpio*, the Cu^{2+} was recorded highest (309.4 μg/kg) in the liver tissues in autumn at

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Advance Access Publication Date: 9 March 2021
General Article

GENERAL ARTICLE

Exome sequencing and functional studies in zebrafish identify *WDR8* as the causative gene for isolated Microspherophakia in Indian families

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Abstract

Isolated Microspherophakia (MSP) is an autosomal recessive disorder characterized by a smaller than normal spherical lens. Till date, *LTBP2* is the only gene shown to cause MSP. We used homozygosity mapping and whole-exome sequencing and identified a homozygous mutation, c.1148C > T (p.Pro383Leu), in the *WDR8* (or *WRAP73*) gene in two Indian MSP families. *In vitro* experiments showed that the missense mutation renders the protein unstable. WDR8 is a centriolar protein that has important roles in centrosomal assembly, spindle pole formation and ciliogenesis. Co-immunoprecipitation experiments from HeLa cells indicated that the mutation interferes with the interaction of WDR8 with its binding partners. In zebrafish, both morpholino-mediated knockdown and CRISPR/Cas knockout of *wdr8* resulted in decreased eye and lens size. The lack of wdr8 affected cell cycle progression in the retinal cells, causing a reduction in cell numbers in the retina and lens. The reduction in eye size and the cell cycle defects were rescued by exogenous expression of the human wild-type WDR8. However, the human mutant WDR8 (p.Pro383Leu) was unable to rescue the eye defects, indicating that the missense mutation abrogates WDR8 protein function. Thus, our zebrafish results suggested that *WDR8* is the causative gene for MSP in these Indian families.

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Content

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A New Three Parameter Log-Logistic Model for Survival Data Analysis

PP: 705-714

doi:10.18576/jsap/100310

Author(s)

Bilal Ahmad Para, Tariq Rashid Jan, Mir Subzar,

Abstract

In this paper, a new three parameter generalized Log-logistic distribution is introduced for modeling survival data. Some properties and characteristics of the newly introduced model are studied. Finally, the initiated model and some other related distributions are fitted to real life data sets of lifetimes, and are compared for their ability to describe the data. Keywords:

The European Zoological Journal ›
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Research Article

SEM studies and discovery of an intriguing new *Rhamphomyia* (*Pararhamphomyia*) (Diptera, Empididae, Empidinae) species from the Kashmir Himalayas

S. A. Akbar, M. Kanturski, M. Barták, A. A. Wachkoo & A. Maqbool

Pages 1325-1350 | Received 07 Apr 2022, Accepted 19 Oct 2022, Published online: 01 Dec 2022

Cite this article https://doi.org/10.1080/24750263.2022.2139864 Check for updates

Abstract

Here we present an intriguing new species of the Empididae genus *Rhamphomyia* (*Pararhamphomyia*) from the Kashmir Himalayas. The new species, *Rhamphomyia* (*Pararhamphomyia*) *aquila*, has a distinctive appearance due to its highly deformed male hind legs with extremely shortened hind tibia, a feature very peculiar in the genus. The new species is described along with elements of mating behaviour, the mechanism of male hind leg articulation, and its possible role during mating. Also, scanning electron microscopy analysis is used to elucidate the general morphology

Notas

First record of *Amobia quatei* (Diptera: Sarcophagidae: Miltogramminae) from the Indian subcontinent as kleptoparasite of *Anterhynchium flavomarginatum* (Hymenoptera: Vespidae: Eumeninae)

Primer registro de *Amobia quatei* (Diptera: Sarcophagidae: Miltogramminae) del subcontinente indio como cleptoparásito de *Anterhynchium flavomarginatum* (Hymenoptera: Vespidae: Eumeninae)

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First record of *Amobia quatei* (Diptera: Sarcophagidae: Miltogramminae) from the Indian subcontinent as kleptoparasite of *Anterhynchium flavomarginatum* (Hymenoptera: Vespidae: Eumeninae)

Revista de la Sociedad Entomológica Argentina, vol. 81, núm. 3, 2022

Sociedad Entomológica Argentina

Recepción: 10 Marzo 2022
Aprobación: 27 Julio 2022

Abstract:
Amobia quatei Kurahashi, 1974 was reared from the puparia collected from the brood chambers of mason wasp *Anterhynchium flavomarginatum* (Smith, 1852). The species is reported for the first time from Indian subcontinent. This is also the first host record for the kleptoparasite *A. quatei*. A redescription of the kleptoparasite supplemented with illustrations of habitus and genitalia, along with notes on the biology of the host are provided.

Keywords:
Biology, Distribution, Host record, Morphology, New record.

Resumen:
Amobia quatei Kurahashi, 1974 fue criada a partir de puparios recogidos en cámaras de cría de la avispa albañil *Anterhynchium flavomarginatum* (Smith, 1852). La especie se registra por primera vez en el subcontinente indio. Este es también el primer registro de hospedero para el cleptoparásito *A.*

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Argentina

An unusual worker morph of *Diacamma ceylonense* Emery, 1897 (Hymenoptera: Formicidae)

AKBAR, Shahid A.; BHARTI, Himender; WACHKOO, Aijaz A.
An unusual worker morph of *Diacamma ceylonense* Emery, 1897 (Hymenoptera: Formicidae)
Revista de la Sociedad Entomológica Argentina, vol. 81, núm. 3, 2022
Sociedad Entomológica Argentina, Argentina
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Xorides xylotrechi sp. n. (Hymenoptera: Ichneumonidae: Xoridinae) parasitizing Xylotrechus stebbingi (Gahan, 190 (Coleoptera: Cerambycidae) in India.

Maqbool I [1], Varga O [2], Maqbool A [3], Wachkoo AA [4], Banu AN [5], Rather SU [6]

Author information

Zootaxa, 03 Jun 2022, 5150(1):121-128
https://doi.org/10.11646/zootaxa.5150.1.7 PMID: 36095756

Abstract

New xoridine species, Xorides xylotrechi sp. n., from India is described and illustrated. The parasitoid was rear from the larvae of the xylophagous beetle, Xylotrechus stebbingi (Gahan, 1906), infesting Juglans regia L. Notes parasitoid behaviour and biology are also provided with a brief description of female reproductive system and apparatus.

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Pseudopomyzidae—A Family of Diptera new to the Indian Fauna

Suhaib Firdous Yatoo, Amir Maqbool, Aijaz Ahmad Wachkoo

Biology Fauna Ecology 2022

ScienceDirect

Journal of King Saud University - Science

Volume 34, Issue 3, April 2022, 101829

Original article

Purification, characterization and studies of a novel cysteine protease inhibitor from *Juglans regia*: Implications as a potential biopesticide

Ashraf Ali Khan [a 1], Abu Bakr Ahmad Fazili [b 1], Sheraz Ahmad Bhat [c], Waseem Feeroze Bhat [a], Mohammad Nadeem Asghar [d], Mohd Shahnawaz Khan [e], Bilqees Bano [f]

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https://doi.org/10.1016/j.jksus.2022.101829

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Abstract

Objective

To isolate and characterize a novel phytocystatin from walnut and investigate it for biopesticide development.

Methods

A battery of methodology was employed. Initially, phytocystatin was extracted and purified from walnut using ammonium sulfate saturation (60–80%), followed by gel filtration chromatography on the Sephacryl S-100 HR column. Further characterization studies including pH and temperature stability, molecular weight, secondary structure, protease inhibitory assay and antimicrobial activity were carried using various techniques viz: spectroscopy, electrophoresis, and circular dichroism (CD) techniques.

On Bernstein-type inequalities for polynomials with restricted zeros

Original Research Paper Published: 22 May 2023

Volume 31, pages 2603–2611, (2023) Cite this article

Mudassir A. Bhat, Ravinder Kumar & S. Gulzar

Abstract

For a complex-polynomial $P(z)$ of degree n having no zero in $|z|<1$, it is known that $\max_{|z|=1}|P'(z)| \le \frac{n}{2}\max_{|z|=1}|P(z)|$. Under same hypothesis, V. K. Jain proved that if $\alpha \in \mathbb{C}$ with $|\alpha| \le \frac{n}{2}$ then for $|z|=1$,

$$\begin{aligned} \left| zP'(z)-\alpha P(z)\right| \le \dfrac{1}{2}\left\{ \left| n-\alpha \right| +\left| \alpha \right| \right\} \underset{|z|=1}{\max }|P(z)|. \end{aligned}$$

In this paper, we obtained an extension of this inequality to mth derivative which also contains a refinement of this inequality. Our result not only generalize some well-known

ScienceDirect

Gene Reports

Volume 26, March 2022, 101432

Molecular characterization of 3-hydroxy-3-methylglutaryl-CoA reductase (HMGR) in relation to aconite biosynthesis in *Aconitum heterophyllum* Wall ex Royle

Tareq A. Wani [a], Zahoor A. Kaloo [a], Subzar A. Reshi [b]

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https://doi.org/10.1016/j.genrep.2021.101432

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Highlights

- *Aconitum heterophyllum* a critically endangered medicinal herb of North Western Himalayas with enormous pharmacological properties.
- In *A. heterophyllum* atisine is the principle alkaloid and the species is considered as non-poisonous.
- HMGR from *A. heterophyllum* was isolated for the first time along with its tissue-specific expression.
- The expression level was highest in rhizome, followed by stem, leaf and flower which were in corroboration with the accumulation of aconites.
- *Ah*HMGR regulation will furnish the explanation on spatio-temporal changes in the accumulation of valuable secondary metabolites in the plant.

Characterizing arbuscular mycorrhizas in Saffron: implicationsfor bridging the yield gaps

Original Article Published: 23 August 2022

Volume 78, pages 91–100, (2023) Cite this article

Biologia

Aims and scope

Submit manuscript

Zahoor A Itoo, Zafar A. Reshi & Manzoor A. Shah

Abstract

Since the importance of spices in the global nutritional challenges has been understudied, our aim was to assess the arbuscular mycorrhizal diversity associated with one of the most expensive spices - Saffron (*Crocus sativus*) in the Kashmir Himalaya.

We used both morphological and molecular approaches to characterize the arbuscular mycorrhizal fungal (AMF) diversity associated with saffron targeting nuclear ribosomal DNA sequences. In order to capture the entire AMF diversity associated with saffron, we assessed the spore density and diversity in rhizospheric soils, and sampled roots from sampling sites spread across major saffron growing area of Kashmir overlying a grid map on the target fields. Genomic DNA was extracted from roots, amplified using nested PCR with two set of primers, sequenced and phylogenetically analysed.

ScienceDirect

Science of The Total Environment

Volume 826, 20 June 2022, 154292

Anthropogenic activities and geographic locations regulate microbial diversity, community assembly and species sorting in Canadian and Indian freshwater lakes

Chinedu C. Obieze [a], Gowher A. Wani [a b], Manzoor A. Shah [b], Zafar A. Reshi [b], André M. Comeau [c], Damase P. Khasa [d]

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https://doi.org/10.1016/j.scitotenv.2022.154292

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Highlights

- Anthropogenic activities threaten the conservation of freshwater lakes globally.
- Microbiota of impacted, geographically distinct freshwater lakes was investigated.
- Lake water chemistry pervasively influenced bacterial species distribution.
- Deterministic processes favour *Flavobacterium*, *Acinetobacter* and *Cyanobium*.
- Chemical variation impacts richness and diversity more than geographic differences.

RATIO ESTIMATORS FOR POPULATION MEAN USING ROBUST AND EFFICIENT WEIGHTED LEAST SQUARES ESTIMATE IN CASE OF OUTLIERS

Syed Adil Farooq[1], Amit kumar Attri[2], Gowher Ahmad Wani[3], Khalid Hussian[4], Milan Srivastava[5]and Mir Subzar[6]

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Abstract:

Ordinary Least Square (OLS) estimators for a linear model are very sensitive to unusual values in the design space or outliers among y values. Even one single atypical value may have a large effect on the parameter estimates. This paper aims at adapting the Robust and Efficient Weighted Least Squares Estimate (REWLSE) to the estimators using OLS method proposed by Subramani and Kumarapandiyan (2012) and compares them in terms of efficiencies. In addition, we also have a real data application to compare the performance of existing estimators using OLS with estimators using REWLSE.

101207

Keywords: Ratio Estimators, OLS, REWLSE, MSE, Efficiency

DOI Number: 10.48047/NQ.2022.20.6.NQ22995 **NeuroQuantology2022;20(6): 101207-101215**

AMS Subject Classification: 62J05, 62G35

1. Introduction

In survey sampling it is always found to be advantageous, while utilizing the ancillary information in order to get enhance in the precision while estimating the population parameters. In simple random sampling, when the correlation between study and auxiliary variable exists and that too is positive (high), then ratio method of estimation is generally used, as this method give more precise results in such situation for details see Subzar et al. (2017a, 2017b,2021a), Bouza and Subzar (2019) and Lone et al. (2021). However, in survey sampling one big issue comes there, that is when there is a presence of outliers in the data then using the traditional methods does not provide the precise results. In such situations various authors have put their sincere efforts to cope up with this situation. For details see Subzar et al (2019a, 2019b, 2020, 2021b), Almanjahie et al. (2021). In that situation OLS method does not yield precise result. The

Biological Forum – An International Journal **15(5): 1674-1680(2023)**

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The efficacy of Ascorbic acid against Lead Nitrate Impact on the Histology of Liver of Common Carp (*Cyprinus carpio)*

Musrat Majeed[1]*, Rajendra Chauhan[2], Farooq Ahmad Mir[2] and Shaista Masarat[2]
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(Corresponding author: Musrat Majeed)*
(Received: 14 March 2023; Revised: 26 April 2023; Accepted: 04 May 2023; Published: 20 May 2023)
(Published by Research Trend)

ABSTRACT: Lead is reported as heavy metal that induces physiological dysfunction and blood disorders. They are often firmly attached to polypeptides and proteins and are water soluble but non-degradable. Diverse activities continue to have an impact on the aquatic environment, altering the climate and causing health hazards to fish, despite past study issuing cautionary notes. This study assessed the toxicity of lead nitrate to the freshwater fishes *Cyprinus carpio*, to determine the hematological toxicity, histopathology and mortality and survival rate. Fishes were exposed to sub lethal lead nitrate concentrations 5ppm for 15 and 30 days of exposure and (percentage)% mortality was noted after 24, 48, 72, and 96 hours. The determination of LC50 of the Lead nitrate during the present experimental period. 10 mg/l to 60 mg/l Lead nitrate was used to assess the rate of mortality at each concentration. 60 mg/l was seen to be LC100 for Lead nitrate. 50% mortality was recorded in experimental groups exposed to 30-40 mg/l of Lead nitrate therefore, the acute 96h LC50 value for the present experimental fish, *Common carp* was calculated to be 35 mg/l (ppm).In the present research, the significant hematological (WBCs, RBCs, Hb, neutrophils, Basophils MCHC and Lymphocytes) and histopathological alteration in liver tissue of common carp was recorded upon the exposure to different concentration of lead. The results concluded that lead has a strong influence on hematological and histopathological parameters of common carp during chronic toxicity.

Keywords: Lead nitrate, *C.carpio*, mortality, probit, LC50, dysfunction.

INTRODUCTION

Common carp is one of the freshwater fish that has significant economic value so that the community widely cultivates carp. Besides being kept in ponds, common carp are also often kept in the fields together with rice plants Aquatic pollution by heavy metals is a major threat to human health and to aquatic life (Afaghi 2020). At present, the impact of heavy metals on aquatic fauna is attracting widespread attention, especially in studies linked to industrial contamination. These heavy metals in the aquatic systems are due to different anthropogenic and natural sources, including industrial or domestic waste water, application of pesticides and fertilizers, leaching from landfills, shipping and harbor activities and atmospheric deposits and geological weathering of the earth crust .Lead is a substance that exists in the environment in a wide range of physical and chemical forms. When present in amounts over the usual range, lead has a negative impact on fish behaviour. Most of the lead that is present in the environment is inorganic and exists in various oxidized forms. Pb is the ionic species that persists the longest in the environment and is thought to be the form in which aquatic creatures biochemically collect the most Pb. Fishes live close to their surroundings which contains different heavy metals, bacteria, remnant pharmaceuticals, lead nitrate, microplastics, pesticides, etc. Therefore, cumulative impacts of these toxicants may cause harmful effects on aquatic flora, fauna, and other living beings of the food web. However, a variety of parameters, such as fish age, pH, and water hardness, affect how hazardous is lead nitrate. The study of ecotoxicology takes into account an immune system, which is almost ubiquitous in all multicellular organisms and serves as a direct conduit between an organism and its surroundings. Lead is widely used in paint and is mostly released into the environment through the exhaust pipes of various automobiles. Its degeneration will lead to a drop in fish quality and an increase in disease susceptibility. Abiotic factors and the metal concentration of water both decrease the immune system's cellular and humoral components. The most common metals that can be dangerous to humans at low concentrations include lead, cadmium, nickel, arsenic, chromium, and mercury (Al-fatlawi *et al.,* 2015).

MATERIALS AND METHODS

Lead nitrate (Ranbaxy India), to be used for the preparation of various toxic concentrations, (stock solution) by adopting the dilution techniques. Fish Used in tests and their Collection With the aid of fishermen, a specific group of *C. carp* (weight 80-120gm, length 12-

ScienceDirect

Journal of King Saud University - Science

Volume 35, Issue 3, April 2023, 102536

Exponential ratio estimator of the median: An alternative to the regression estimator of the median under stratified sampling

Mir Subzar [a], Showkat Ahmad Lone [b], Muhammad Aslam [c], Ali Hussein AL-Marshadi [d], S Maqbool [e]

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https://doi.org/10.1016/j.jksus.2022.102536

Abstract

This article develops statistical inference about the population median under the stratified sampling method. An exponential class of ratio estimators of the median was suggested using the combination of scalars and known supplementary information on the population median. Mean square error and bias expressions were derived theoretically and also the AOE (asymptotic optimum estimator) conditions were obtained with its mean square error and bias expressions. From both the empirical evidence and analytical approach evaluations of the AOE with other obtainable members of the suggested class of estimators show that the AOE performs better than its competitors in the literature and is also the alternative to the regression estimator of the median under a stratified random sampling scheme.

Previous Next

Keywords

Population Median; AOE; Bias; MSE; Efficiency; Stratified Sampling

AMS Subject Classification

Efficient class of ratio cum median estimators for estimating the population median

Mir Subzar, Showkat Ahmad Lone , Emmanuel J. Ekpenyong, Abdul Salam, Muhammad Aslam, T. A. Raja, Salmeh A. Almutlak

Published: February 9, 2023 • https://doi.org/10.1371/journal.pone.0274690

Abstract

In estimation theory, the use of auxiliary information significantly improves precision while estimating population parameters. In this paper, an efficient class of ratio cum median estimators of the population median is suggested using simple random sampling without replacement. The expressions for bias and mean square error of the proposed class are derived theoretically. The condition for the asymptotic optimum estimator is obtained with its bias and mean square error expressions. Under certain realistic conditions, the asymptotic optimum estimator is more proficient, based on analytical and numerical comparisons with some existing estimators that are members of the suggested class of estimators. The superiority of the proposed ratio cum median estimators is shown through real data applications. Such a new proposed estimator will be useful in the future for data analysis and making decisions.

Citation: Subzar M, Lone SA, Ekpenyong EJ, Salam A, Aslam M, Raja TA, et al. (2023) Efficient class of ratio cum median estimators for estimating the population median. PLoS ONE 18(2): e0274690. https://doi.org/10.1371/journal.pone.0274690

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Competing interests: The authors have declared that no competing interests exist.

1. Introduction

The use of auxiliary information, either at the selection or estimation stage or at both stages, significantly improves precision while estimating population parameters. Sometimes, in survey sampling, the collected data may follow the normal distribution. In that case, we use the mean and ordinary least squares methods to estimate the population parameters, as these methods give accurate and precise results in that situation. However, in most cases, data collected may not follow the normal distribution (for example, salary, consumption, etc.), but may follow some highly skewed distributions. In these situations, using the value of the mean will not provide accurate and precise results, as the mean is too sensitive to outliers. So, one can use another measure of central tendencies, such as the median since it is not sensitive to extreme values or outliers. Researchers usually find it difficult to propose such a new technique in order to obtain a valid inference in such situations. Therefore, in this present study, we tend to develop a family of estimators of the population median, which could be adopted whenever the population distribution is skewed. Hence, we suggest a family of ratio cum median estimators of population median by using a combination of scalars with the known population median of a supplementary variable. Also, the asymptotic optimum estimator (AOE) conditions are obtained under which the suggested estimator is highly efficient and consistent, and compares favourably amongst other estimators of the median.

Consider R to be the supplementary variable and S to be the response variable of the finite population under study. Let r_i and s_i be the sample variables on each i^{th} unit drawn from R_i and S_i variables by simple random sampling without replacement (SRSWOR). Let $t_r(r)$ and $t_s(s)$ are the marginal densities of r and s respectively; $t_r(H_r)$ and $t_s(H_s)$ are the probability density functions of the variables. Moreover, let $\hat{H}_r$ and $\hat{H}_s$ be the sample medians; H_r and H_s, the population medians of the variables with the correlation coefficient

$$\rho_c = 4p_{11}(s,r) - 1; p_{11}(r,s) = p(S \leq H_s \cap R \leq H_r).$$

$$\text{Let } e_s = ((\hat{H}_s - H_s)/H_s), \text{ and } e_r = ((\hat{H}_r - H_r)/H_r). \tag{1.1}$$

Thus,

$$E(e_r) = E(e_s) = 0, E(e_s^2) = \delta C_{Hs}^2, E(e_r^2) = \delta C_{Hr}^2, E(e_r e_s) = \delta \rho_c C_{Hs} C_{Hr}, \tag{1.2}$$

where

$$C_{Hs} = [H_s t_s(H_s)]^{-1}, C_{Hr} = [H_r f_r(H_r)]^{-1}, t = m/M, k_H = \rho_c C_{Hs}/C_{Hr}, \tag{1.3}$$

19 January 2023

Crematogaster bonnieae (Hymenoptera, Formicidae), a New Acrobat-Ant Species from the Western Ghats, India

Shahid A. Akbar, *Himender Bharti*, *Aijaz A. Wachkoo*

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Annales Zoologici Fennici, 60(1):9-17 (2023). https://doi.org/10.5735/086.060.0103

Abstract

A new species of the acrobat-ant genus *Crematogaster*, *C. bonnieae*, is described from the Western Ghats, India based on workers. The morphology of the new species is fairly distinguishable from other congeners by the following combination of characters: relatively large eyes; long antennal scapes, surpassing posterior head margin; propodeal spines reduced, tuberculate; 11-segmented antennae, and 3-segmented club. An identification key to the 33 Indian species/subspecies of *Crematogaster* is also provided.

Citation

Received: 28 May 2022; Accepted: 16 January 2023; Published: 19 January 2023

15 September 2023

Taxonomic Overview of the *Tetramorium tortuosum* Group (Hymenoptera, Formicidae) in India and Sri Lanka, with Descriptions of Three New Species from the Western Ghats Biodiversity Hotspot

Shahid A. Akbar, Enrico Schifani, Himender Bharti, Aijaz A. Wachkoo

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Annales Zoologici Fennici, 60(1):109-126 (2023). https://doi.org/10.5735/086.060.0112

Abstract

Three new species in the *Tetramorium tortuosum* group, *T. alii*, *T. binghami* and *T. hitagarciai*, are described and illustrated from the Western Ghats, India. In additio information on the remaining six know species in this group — *T. belgaense* Forel, 1902, *T. keralense* Sheela & Narendran, 1998, *T. pilosum* Emery, 1893, *T. tortuosum* Roger, 1863, *T. urbanii* Bolton, 1977 and *T. yerburyi* Forel, 1902 — is provided along with the key to all the taxa in the group. The *tortuosum* group is the largest of the species group with workers characterized by 11-segmented antenna from the region. Morphology and group affinities of the species are discussed, along with their distribution. However, due to sampling constraints and still insufficient taxonomic knowledge the actual diversity is yet to be properly explored.

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www.europeanjournaloftaxonomy.eu
2023 · Akbar S.A. *et al.*

Research article

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Overview of the ant genus *Vollenhovia* (Hymenoptera, Formicidae) in India and Sri Lanka, with an illustrated key and the description of a new species

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Abstract. The ant genus *Vollenhovia* Mayr, 1865 (Myrmicinae, Crematogastrini) mostly occurs in the Australasian and Oriental regions. We revised its diversity in India and Sri Lanka based on qualitative and quantitative morphology, recognizing eleven taxa, including a new species which is described herewith: *V. escherichi* Forel, 1911, *V. gastropunctata* Bharti & Kumar, 2013, *V. karimalaensis* Dhadwal *et al.*, 2023, *V. keralensis* Kripakaran & Sadasivan, 2022, *V. mawrapensis* Dhadwal *et al.*, 2023, *V. oblonga laevithorax* Emery, 1889, *V. penetrans* (Smith, 1857), *V. pfeifferi* Bharti *et al.*, 2023, *V. taylori* Rilta *et al.*, 2023, *V. terayamai* Rilta *et al.*, 2023, and *V. yasmeenae* sp. nov. The subspecies status of *V. oblonga laevithorax* and its relationship with *V. penetrans*, whose type series does not contain workers, still requires to be assessed in the context of a broader revision including the whole Oriental region. The known distribution of the genus in the Indian subcontinent appears to be fragmentary, still requiring extensive sampling efforts. Four species are from the Western Ghats biodiversity hotspot in the southern Indian state of Kerala, one is endemic to the biogeographically related Sri Lanka, three are known from Eastern India near the border with Bangladesh, two are reported from the Andaman and Nicobar Islands, and one is restricted to the Himachal Pradesh in northern India. A comprehensive key of the known *Vollenhovia* species from India and Sri Lanka is provided.

Keywords. Myrmicinae, Crematogastrini, systematics, Oriental, new species.

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A review of the genus *Stratiomys* Geoffroy (Diptera: Stratiomyidae) from India with description of a new species

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Abstract. A review of the genus *Stratiomys* from India is presented. The new species *Stratiomys brunettii* sp. nov. is described based on male and female specimens collected from the Kashmir Himalayas. The only other congener previously recorded in India, *Stratiomys approximata*, is redescribed. A key to the species is presented.

Keywords. Morphology, new species, nomenclature, soldierfly, taxonomy.

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Introduction

The flies belonging to the family Stratiomyidae Latreille, 1802 are commonly known as soldierflies. The global extant fauna of Stratiomyidae contains over 2800 species, distributed across 12 subfamilies and 378 genera (Woodley 2001, 2011; Hauser *et al.* 2022). The genus *Stratiomys* Geoffroy, 1762 is a medium-sized genus of soldierflies with above 90 species recorded worldwide (Woodley 2001, 2011; Nerudová *et al.* 2007). The members of the genus are mostly medium-sized flies with elongated antenna and a broad-flattened abdomen (Nerudová *et al.* 2007).

The majority of *Stratiomys* are found in the Holarctic Region and just a few species from the Neotropics and Oriental Region (Woodley 2001; Nerudová *et al.* 2007). There are just five species known from

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Facile Synthesis of β-Tetracyano Vanadyl Porphyrin from Its Tetrabromo Analogue and Its Excellent Catalytic Activity for Bromination and Epoxidation Reactions

Mannar R. Maurya*, Ved Prakash, Tawseef Ahmad Dar, and Muniappan Sankar*

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First record of the genus *Ampulicomorpha* Ashmead, 1893 (Hymenoptera: Chrysidoidea: Embolemidae) from India

Deen Mohd Bhat, Amir Maqbool, Aijaz Ahmad Wachkoo, Massimo Olmi

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Abstract

The wasp genus *Ampulicomorpha* Ashmead, 1893 (Hymenoptera: Chrysidoidea: Embolemidae) is widely distributed in all zoogeographical regions, but had so far nc been recorded from India. Here, we provide the first Indian record of the genus with *A. nepalensis* Olmi, 1997, a species previously reported from Nepal, Vietnam, anc Tajikistan.

Die Wespengattung *Ampulicomorpha* Ashmead, 1893 (Hymenoptera: Chrysidoidea: Embolemidae) ist in allen zoogeographischen Regionen weit verbreitet, war für Indien bisher aber noch nicht nachgewiesen. In der vorliegenden Studie wird die Gattung mit *A. nepalensis* Olmi, 1997 zum ersten Mal für Indien gemeldet. Diese Ar war bisher nur aus Nepal, Vietnam und Tadschikistan bekannt.

Embolemidae (Hymenoptera: Chrysidoidea) are parasitoids of nymphs of two Hemiptera families: Achilidae and Cixiidae (Olmi et al. 2014a). The family had a broader diversity in the past, with four genera and 20 species from the Cenozoic and the Cretaceous, from both amber and rock deposits (Olmi et al. 2020; Perkovsk et al. 2021). Its extant diversity comprises 66 species in three genera: *Ampulicomorpha* Ashmead, 1893; *Embolemus* Westwood, 1833; and *Trogloembolemus* Olmi, Mit & Guglielmino, 2014.

The embolemid wasp genus *Ampulicomorpha* Ashmead, 1893 currently comprises 26 valid, extant species distributed in all zoogeographical regions (Chény et al. 2020; Olmi 2023). In the Oriental Region, two species, namely *A. nigra* (van Achterberg, 2000) and *A. nepalensis* Olmi, 1997, have been recorded to date, and no species has been reported from India. Both species are based on macropterous females, so they are attributed to the genus *Ampulicomorpha* (see below for a more complete explanation).

Hosts of extant *Ampulicomorpha* are nymphs of Achilidae living in rotten logs and feeding on the hyphal sheets of shelf fungi (Olmi et al. 2014b). These wasps are rarely collected, and knowledge of their biology remains very limited due to their habitat, small size and cryptic behaviour, making them difficult to find and observe (Olmi 1996; Mita & Olmi 2018).

Van Achterberg & Van Kats (2000) considered *Ampulicomorpha* a junior synonym of *Embolemus*. This decision was based on the fact that males of these two gener are often difficult to separate, sharing a very uniform morphology, including that of the genitalia (Perkovsky et al. 2021; Olmi 2023). On the contrary, females are no problem, because they are macropterous in *Ampulicomorpha* and micropterous or rarely brachypterous in *Embolemus* (Olmi 1996). The synonymy of the genera was accepted in 2013 by Mircea-Dan Mitroiu And Massimo Olmi in the Fauna Europaea checklist (Mitroiu & Olmi 2013). However, in subsequent papers it was questioned based on the different hosts of these two genera: *Embolemus* species parasitize nymphs of Cixiidae feeding on roots in the soil (Varrone & Olmi 2012), whereas *Ampulicomorpha* species parasitize nymphs of Achilidae feeding on shelf fungi in rotten logs (Bridwell 1958; Krombein 1979; Wharton 1989; Guglielmin & BÜckle 2013). Since 2014, *Ampulicomorpha* and *Embolemus* have been treated as separate genera in the literature (e.g., Olmi et al. 2014a, 2014b, 2016, 2019, 2020, 2021, 2023; Mita et al. 2017; Martynova et al. 2019; Chény et al. 2020; Perkovsky et al. 2021). Pending a molecular study of both genera by one of us (MO), not yet concluded mainly because of difficulties in finding fresh females of *Embolemus*, we also consider *Ampulicomorpha* and *Embolemus* to be distinct genera based on th morphological and ecological differences outlined above.

In the present study, we report the genus *Ampulicomorpha* from India for the first time, based on the finding of *A. nepalensis* in the Kashmir valley. Previously, Embolemidae in India were represented only by *Embolemus krombeini* Olmi, 1996.

Fig. 1.

Maps. **A.** Known distribution of *Ampulicomorpha nepalensis* Olmi, 1997. **B.** Map of Kashmir valley showing sampling site (S) of *A. nepalensis.*

On Arestov's inequalities concerning the Shur–Szegő composition of polynomials

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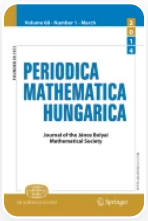

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Mudassir A. Bhat, Ravinder Kumar & Suhail Gulzar

Abstract

In this paper, a wide range of Bernstein-type polynomial inequalities involving the Hardy space norm, obtained over the last thirty years, is derived directly from Arestov's inequalities concerning the Shur–Szegő composition of polynomials.

Article

Shrub invasion alters the soil CO_2 efflux in tropical dry deciduous forests of Madhya Pradesh, Central India

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Abstract

Soil CO_2 efflux was measured in uninvaded (UI; *Lantana* cover absent) and *Lantana*-invaded (LI; *Lantana* cover > 50%) sites in tropical forests of Central India. Significantly ($P < 0.05$) higher mean monthly CO_2 efflux was recorded in LI (396.6 ± 42.8 mg CO_2 m^{-2} h^{-1}) than UI (342.1 ± 37.6 mg CO_2 m^{-2} h^{-1}) sites and ranged from 157.6 - 736.7 mg CO_2 m^{-2} h^{-1} in LI and 125.8 - 614.5 mg CO_2 m^{-2} h^{-1} in UI sites in January and August respectively. The efflux peaked during the rainy season (mean 553.5 CO_2 m^{-2} h^{-1}) followed by summer (377.1 mg CO_2 m^{-2} h^{-1}) and the lowest in winter (259.2 mg CO_2 m^{-2} h^{-1}) season in LI sites. Significantly ($P < 0.05$) lower soil temperature (T_S) and higher soil moisture (M_S) content were observed in LI sites, whereas the higher T_S and lower M_S were found in UI sites. The cumulative annual soil CO_2 efflux was 4105.3 and 4759.2 mg CO_2 m^{-2} h^{-1} for UI and LI sites respectively. Soil CO_2 efflux was significantly positively correlated with *Lantana* density (r=0.76), *Lantana* basal area (r = 0.79), standing crop litter (r = 0.92), T_S (r = 0.49), M_S (r = 0.59), SOC stock (r = 0.66), pH (r = 0.56) and with mean annual precipitation (MAP) (r = 0.94). The present study concludes that plant invasions could alter the CO_2 efflux in tropical forests, which would lead to changes in both atmospheric and soil C. Therefore, a proper management strategy and long-term monitoring are necessary to contain Lantana's expansion and its impacts.

Keywords soil respiration; *Lantana camara*; soil temperature; tropical dry deciduous; Central India.

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1 Introduction

Soil respiration, also known as soil carbon dioxide (CO_2) efflux, is a major pathway of CO_2 release to the atmosphere from organic matter decomposition (Schlesinger and Andrews, 2000). It is a vital functional process in terrestrial carbon (C) cycling that releases about 80-98 Pg C every year (Raich et al., 2002;

Article

Dynamics of soil CO_2 efflux in three tropical dry deciduous forests of Central Indian landscape

Javid Ahmad Dar[1,2], **Debojyoti Raha**[2], **Subashree Kothandaraman**[3], **Manzoor Hassan Malik**[1], **Najeeb Ahmad Bhat**[4], **Mohammed Latif Khan**[2]

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Abstract

Dynamics of soil CO_2 efflux in tropical dry deciduous forests is imperative to know their contribution in regulating the regional and global carbon (C) cycles. In this study, three forest types: dry deciduous teak (DDTF), dry deciduous mixed (DDMF) and *Boswellia* (BF) forests were selected to measure the dynamics of soil CO_2 efflux and its driving factors. Significantly ($p < 0.001$) higher mean monthly CO_2 efflux was recorded in DDMF (626.1 ± 9.1 mg $CO_2/m^2/h$) while it was lowest in BF (122.3 ± 5.0 mg $CO_2/m^2/h$) and DDTF (142.8 ± 6.9 mg $CO_2/m^2/h$) forest types, respectively. The CO_2 efflux peaked during the rainy season (mean 551.1 ± 63.5 mg $CO_2/m^2/h$, DDMF) followed by summer (363.7 ± 68.6 mg $CO_2/m^2/h$, DDTF) and the lowest in winter (181.8 ± 36.3 mg $CO_2/m^2/h$, BF) season. Significantly ($p < 0.05$) lower soil temperature (T_S) and higher soil moisture (M_S) content were observed in BF and DDMF forest types, respectively. The cumulative annual soil CO_2 efflux was highest in DDMF (4625.2 mg $CO_2/m^2/yr$) and lowest in BF (3536.7 mg $CO_2/m^2/yr$). Soil CO_2 efflux was significantly positively correlated with TS ($R^2 = 0.49$), MS ($R^2 = 0.59$). This study will provide an understanding of the dynamics of soil CO_2 efflux among tropical dry deciduous forest types in the Central Indian landscape and identify the roles of different drivers in soil CO_2 efflux.

Keywords soil CO_2 efflux; seasonal dynamics; soil moisture; tropical dry deciduous forests; Central India.

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