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## A silver iodide nanoparticle containing plant extract-based gelatinous composite for antibacterial coating applications

Sumati Malik, Susmita Saha, Samir Kumar Sil, Chitraniwa Datta & Subhojit Das<sup>✉</sup>

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### Abstract

Hospital-acquired infections are frequently caused by bacterial surface contamination. Towards this end, antibacterial coatings can assist minimize pathogen transmission through inanimate surfaces in medical settings. In this paper, we describe a green nanotechnology approach to fabricating a gelatinous nanocomposite, using the composite for coating diverse substrates, and assessing the antibacterial efficacy of dried coatings. Precisely, silver iodide nanoparticles (AgI NPs) have been synthesized by a biogenic method using extract of a common Indian herb *Hygrophila auriculata* (household name Kulekhara)—the plant being known to have cure for a range of maladies, including bacterial infection, anemia and the like. The AgI NPs on blending with *Aloe vera* gel led to a gelatinous nanocomposite that could be used for coating glass and paper substrates. Interestingly, the gel coating exhibited excellent antibacterial activity towards gram-negative (*K. pneumoniae*) and gram-positive (*S. pyogenes*) bacterial strains. For instance, the results of MIC investigation revealed that the lowest value of about 6.25 and 12.5 µg/mL were the minimum inhibitory doses (IC<sub>50</sub> dose) of nanocomposite required to contain the growth of the two pathogens. The findings showed that the dried form of AgI-gel coating retained its antibacterial activity, suggesting, thus, its durability and long-term effectiveness in preventing bacterial infection in food packaging, medical equipment, water treatment, paints, among others.

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### DATURA INNOXIA (SOLANACEAE) – A NEW RECORD FOR TRIPURA, NORTHEASTERN INDIA

Aparajita Das, Somnath Kar, Panchatapa Bhattacharya, Sani Das, Dixit Bora & B.K. Datta

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### Incidence of facultative pseudovivipary in tetraploid cytotype of *Costus speciosus* (Koen. ex. Retz.) Smith

#### Author

Surochita Basu\* and Debasree Lodh

#### Abstract

Occurrence of multiple levels of ploidy cytotypes, representing diploid, triploid and tetraploid is quite common in *Costus speciosus* inhabiting natural populations. However, tetraploid cytotypes are found to predominate. Such prevalence of tetraploids may owe their incidence to ploidy associated plasticity in growth and reproductive features. Notwithstanding the implications of ploidy as a resource for variation and adaptation, our extensive survey of the natural populations in Tripura encountered an instance of pseudo-vivipary in a robust tetraploid that is otherwise a good seed setter. Such pseudo-vivipary could accelerate reproduction as an additional reproductive strategy of facultative asexual propagation in an otherwise sexually reproducing species. The incidence of such pseudo-vivipary is the first report of its kind in *Costus*. The prospective advantage of this dual reproductive strategy (sexual and asexual) would be of marked adaptive significance for establishment of the *Costus* tetraploid in challenging environmental conditions.

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Keywords Dual reproductive strategy, facultative pseudovivipary, marked adaptive significance, multiple cyto

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Additional Paper

## Segmental Phonemes in Tripura: A variety of Kokborok

Timothy Tripura<sup>1</sup>  
Khawsonkim Suantak<sup>2</sup>

### Abstract

The present paper attempts to provide the description of the segmental phonemes in Tripura, a variety of kokborok which is a Tibeto-Burman language of Bodo-Garo branch. In Tripura state, this variety is spoken in Sabroom and Belonia sub-divisions of South Tripura, Amarapur and Karbook sub-divisions of Gomati District, North Tripura, Longharai valley and Gandacherra sub-divisions of Dhalai district and Agartala. Tripura speakers are also scattered in Hailakandi, Karimganj and Cachar districts of Assam state, and Mansit District of Mizoram. According to the Census of India 2011 the total population of Tripura and Tripuri is 5,92,255 persons in the state and highest in number among all the other scheduled tribal groups. However, no specific number of Tripura speakers is mentioned. Tripura is also spoken in present-day eastern Bangladesh. This paper is the first attempt of linguistic work undertaken in Tripura variety.

### Aims of the study

The main aim of this paper is to describe the segmental phonemes occurring in Tripura variety focusing on the number of phonemes (monophthongs, diphthongs, triphthongs, consonants) marked in this variety. In respect of place of articulation, Tripura consonants can be divided into five bilabials sounds, seven alveolar, three palatals, four velars and one glottal. And with regard to the manner of articulation and voicing, Tripura consonants can be further categorized into (i) stops {/p, t, c, k, b, d, ʃ, g, pʰ, tʰ, kʰ/}, (ii) nasals {/m, n, ŋ/}, (iii) fricatives {/s, h/}, (iv) tap or flap {/r/}, (v) lateral {/l/} and (vi) semivowels {/w, y/}.

**Keywords:** Segmental phonemes, Tripura, Kokborok, Tibeto-Burman, Bodo-Garo.

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# **A Study on the Psychological Counselling Needs among Secondary and Higher Secondary School Students in Aizawl City: Gender Based Comparison**

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Assistant Professor, Institute of advanced Studies in Education<sup>2</sup>, Assistant Professor, Mizoram University<sup>2</sup>,  
Associate Professor, Govt. Hrangbana College<sup>3</sup>

**Abstract:** The present study aims to find out the psychological counselling needs among Secondary and Higher Secondary Students in Aizawl City by using Psychological Counselling Need Scale (PCNS-CA) developed by Dr. Vijaya Laxmi and Mrs. Ganjan Ganotra Arora. The investigators used Descriptive method where the population comprises of all the students of Secondary and Higher Secondary Schools of Aizawl city. The investigators randomly selected 2 Secondary and 2 Higher secondary schools as sample schools where 25 male and female students are again randomly selected from each school which means that the investigator employs stratified random sampling technique. The result of the study found no significant difference based on the gender comparison.

**Keywords:** Study, Psychological, Counselling, Secondary, Higher Secondary, Gender, Comparison

## **1. Introduction**

Psychological counselling is a type of counselling that can be used to help people gain control of their feelings. It focuses on treating individuals with a variety of different emotional, behavioural and social problems or disorders. Psychological counselling is one of the most common and widespread psychological treatment.

The problems that involves in Psychological counselling are addressed from developmental (lifespan), environmental and cultural perspectives. They include, but are not limited to: School and career/work adjustment concerns, making decisions about career and work, and dealing with school-work-retirement transitions, relationship difficulties-including marital and family difficulties, learning and skill deficits, stress management and coping with negative life events, organizational problems, dealing with and adjusting to



# A Biomechanical Analysis of Long Jump Performance and Selected Kinematic Variables at the Landing of Hang Style Technique in Long Jump

PDF

Sangita Chakraborty Arvind Singh Sajwan,

## Abstract

This study has aimed to find analysis of kinematical variables and the performance of the long jump during the landing of Hang style. Kinematical variables have been analyzed in this paper. Later, the standard deviation, mean value, and variable's scores in degree have been discussed in this paper. The primary quantitative research method has been performed in this article paper.

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