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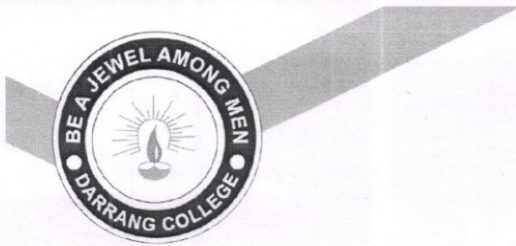


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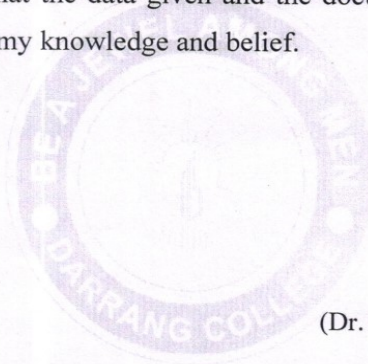
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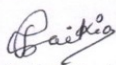
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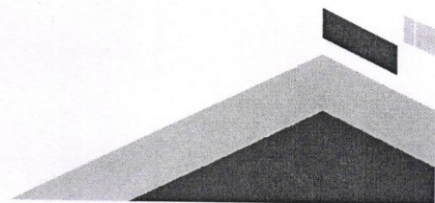
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I hereby declare that the data given and the documents furnished herewith are correct to the best of my knowledge and belief.



  
(Dr. Palash Moni Saikia)  
Principal,  
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**Price : Rs. 200/-**

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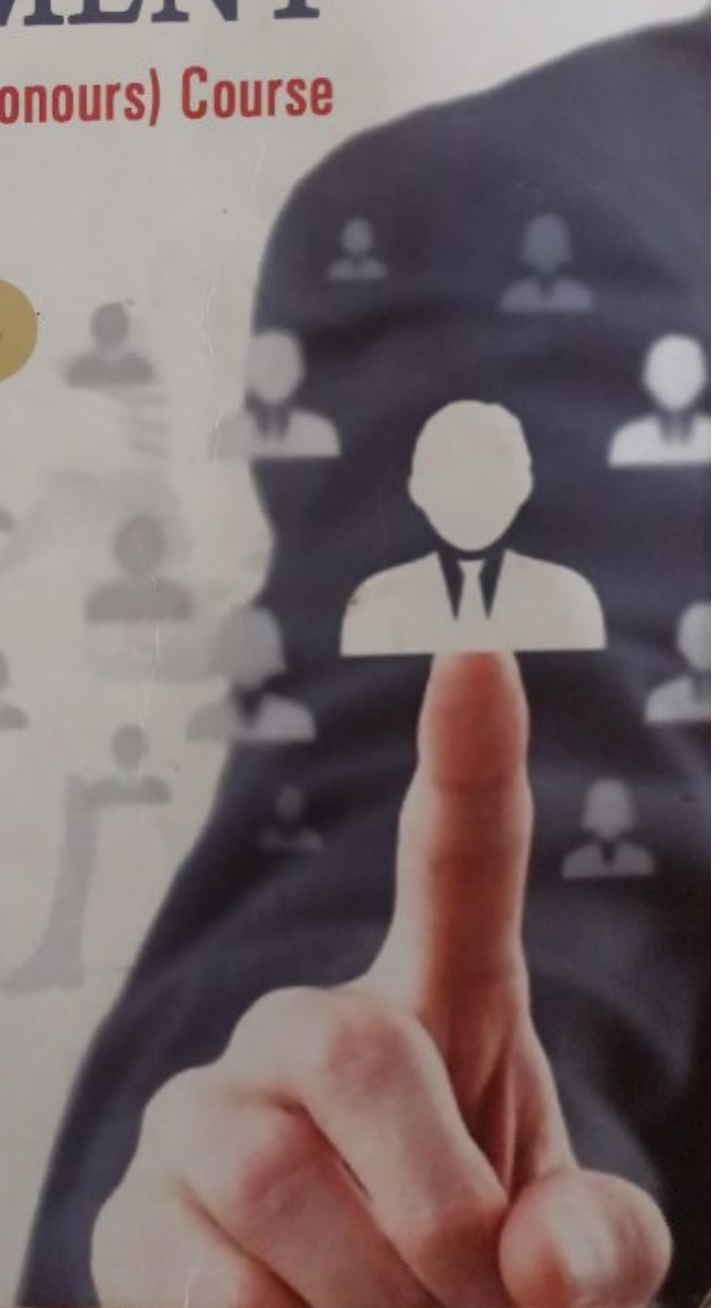
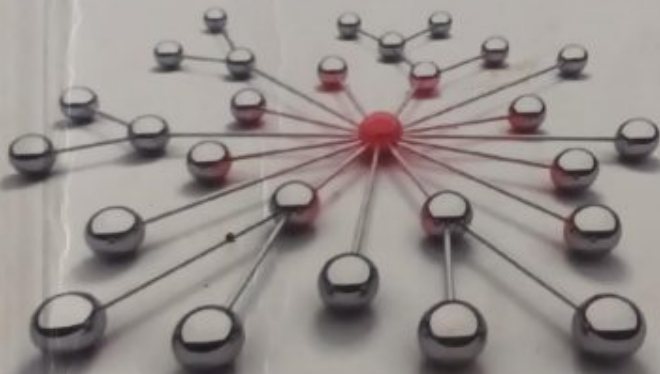
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**Price : Rs. 150/-**

**ISBN : 978-93-89500-37-0**

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**Dr. Akhil Baruah**, FES, FIAT, FLS (London), FAPT, Awardee of National Scholarship (1989-1990), CSIR-Junior Project Fellowship (1994-1996), CSIR-Senior Research Fellowship (1996-1999) and CSIR-Extended Senior Research Fellowship (1999-2000).



For his outstanding research contribution, he has been awarded "9" Dr. Biraj Mohan Das Memorial Science Award, 2007" in Biological Science.

However, in recognition of his all round excellence as an educationist as well as for his excellent Academic and Research activities, Oil India Limited has been awarded/selected him the "Oil Shikshya Ratna Puraskar, 2017" on the auspicious occasion of Teachers' day.

Dr. Baruah has also been selected for the "Best Teacher Award, 2020" by the IQAC of Darrang College, in recognition of his all round excellence in Academic, Research and other activities. The IQAC has been instituted this Award for the first time in the "Platinum Jubilee" year (1945, 26 July-2020) of this premier institute.

He was working on *Cinnamomum* species of Northeast India for his doctoral thesis. He undertook his doctoral work at Regional Research Laboratory (CSIR), (Presently known as North East Institute of Science & Technology), Jorhat during 1994-2000. Since then he is actively engaged to explore the *Cinnamomum* resources of NE India along with other R & D works and academic activities.

Dr. Baruah is presently serving as Associate Professor in the P.G. Department of Botany (Taxonomy), Former HoD, Darrang College, Tezpur under Gauhati University, Guwahati, Assam. He is so far credited with 160 (113+47) research papers/book chapters, 21 Books (15 sole authored + 6 Edited), 34 seminar presented papers, delivered 10 talks as resource person, more than 220 popular science articles, credited with 1 patent, guided 1 M. Phil. student and many P.G. students for their M. Sc. Dissertations, discovered 4 new aromatic plant taxa, 3 new types of stomata, and many promising aromatic & spice plant resources for natural essential oils of fragrance, flavour & pharmaceutical values from Northeast India.

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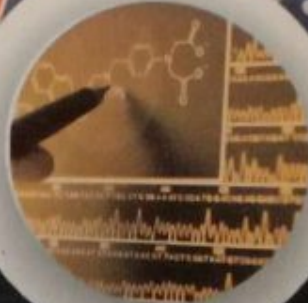
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For his outstanding research contribution, he has been awarded "9<sup>th</sup> Dr. Biraj Mohan Das Memorial Science Award, 2007" in Life Science Group.

However, in recognition of his all round excellence as an educationist as well as for his excellent Academic and Research activities, Oil India Limited has been awarded/selected him the "Oil Shikshya Ratna Puraskar, 2017" on the auspicious occasion of Teachers' day.

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**Dr. Chittaranjan Baruah**, M.Sc., Ph.D. in Zoology, Advanced Postgraduate Diploma in Bioinformatics (BI-A Level), member of International Union for Conservation of Nature (IUCN-CEC & IUCN-SSC), Founder & Editor of *Asian Journal of Conservation Biology* (Scopus-indexed, UGC-CARE Journal), Editor of *Northeast Journal of Contemporary Research* (NoJCR), Awardee of Conservation Leadership Program (CLP) award (2010) jointly awarded by Bird Life International, Fauna & Flora International (FFI) and Wildlife Conservation Society (WCS). Dr. Baruah was an Asian Scholar of ASPin-situCC based at Wetlands Institute, New Jersey, USA for six months (2010).

Dr. Baruah is presently serving as Assistant Professor (Sr. G) in the Postgraduate Department of Zoology, Darrang College, Tezpur (under Gauhati University), Assam, India. Prior to the present appointment, he had served as Research Associate in Bioinformatics at the DBT-BIF Center, Gauhati University for a period of 3 years. Dr. Baruah has nine years of undergraduate and postgraduate teaching and research experience.

Dr. Baruah is so far credited with more than 40 research papers, 1 book, 8 book chapters, 30 seminar presented papers, delivered more than 25 talks in Bioinformatics as Visiting Professor in North Lakhimpur College (Autonomous) and as Resource person in the higher learning institutions of northeast India including Gauhati University, Assam Agriculture University, Bodoland University, CSIR-NEIST, Cotton University, USTM (Meghalaya), St. Anthony's College (Shillong), Mangaldai College and Kaliabor College and Dhing College, Assam. He has completed four research projects as Principal Investigator with international funding. He is one of the Recognized Ph.D. Research Guides of School of Biological Sciences, University of Science and Technology, Meghalaya. He is the Life member of 10 National & International Professional Bodies, Editorial Board members, *Indonesian Journal of Applied Environmental Studies* (In JAST) and Reviewer of 6 international Bioinformatics and Molecular Biology journals published by Springer Nature, Elsevier and Taylor and Francis.



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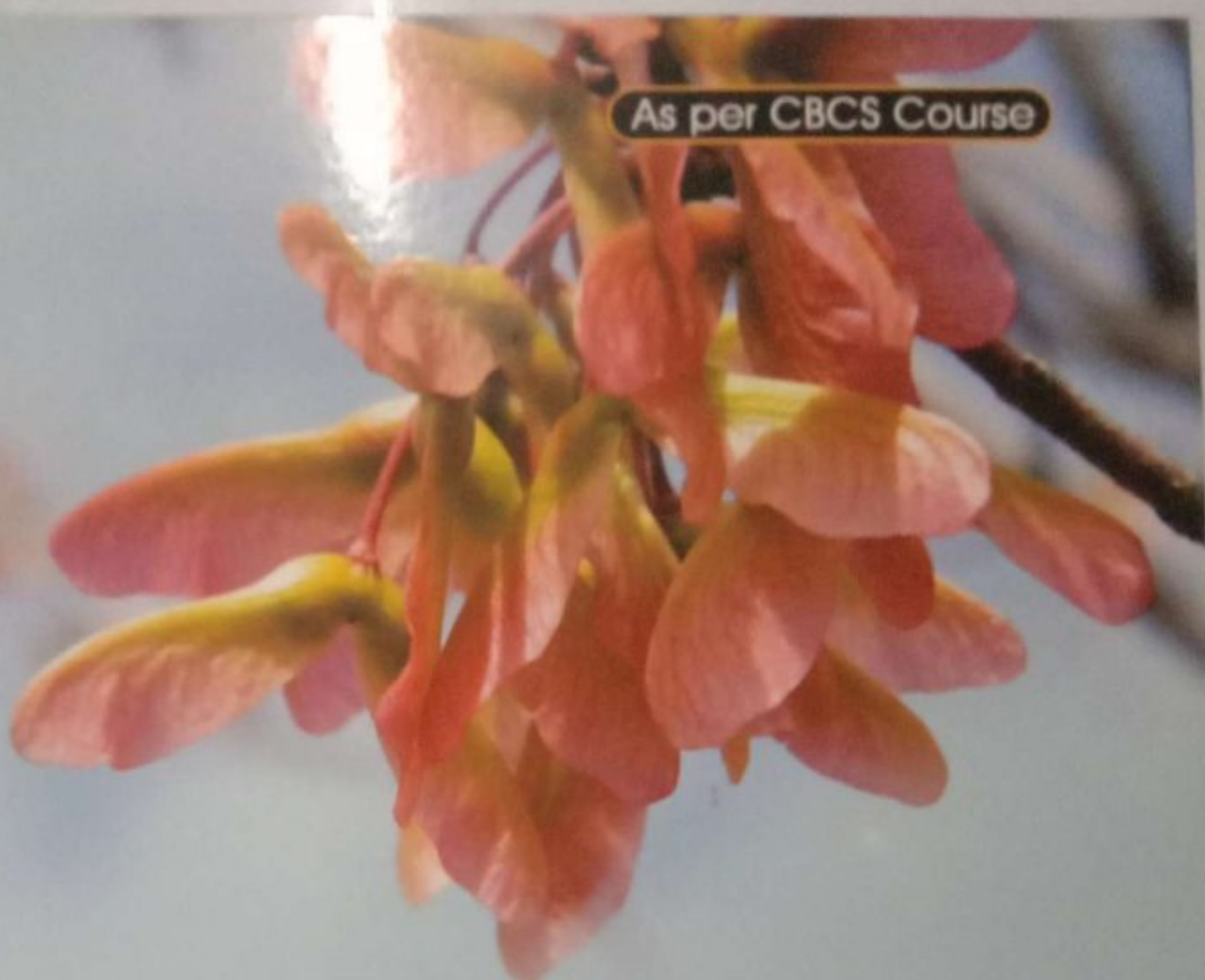


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Dr. Brij Mohan Das PhD (PhD, 1983) received JRF, Fellow of National Scholarship (1989-1990), CSIR-Young Researcher Award (1991), JRF, and Senior Research Fellowship (1996-1999) and CSIR-Extended Senior Research Fellowship (1999-2000).

For his outstanding research contribution, he has been awarded "Dr. Brij Mohan Das Memorial Award" (1999) in recognition of his research.

Recognized as a pioneer of his work, he has been awarded several awards as an educationalist as well as for his excellent leadership and research activities. He has been awarded several times the "Oil Shiksha Ratna Award" (1997-2000) for his immense services to students.

Dr. Brij Mohan Das has been selected for the "Best Teacher Award, 2020" by the IQAC of Darrang College in recognition of his all-round excellence in Academic Research and other activities. The IQAC has been bestowed this award for his last term in the "Platinum Jubilee" year (1945-2020) of this glorious institute.

He was working on Ph.D. dissertation on the species of *Trichosanthes* from North East India for his doctoral thesis. He undertook his research work at Research Laboratory (CSIR), (Presently known as North East Institute of Science & Technology), Jorhat during 1983-1986. Since then he is actively engaged to explore the taxonomic diversity of the tribe *Utriculariaceae* with other V & D work and academic activities.

Dr. Brij Mohan Das is presently working as Associate Professor & Former HoD, in the P.G. Department of Botany, Assam University, Gauhati, Assam. He is so far credited with 161 publications, including 100 papers in journals, 10 books, 10 edited, 34 seminar presented papers, 100 articles in popular science journals, more than 725 popular science articles, credited with 1 patent, 100 articles in V & D, 100 articles in V & D, 100 articles in V & D. Dissertations, discovered 4 new aromatic plants, 1 new species of *Trichosanthes* and many promising aromatic & spice plant resources for natural essential oils of long-term *Trichosanthes* & *Trichosanthes* from North East India.

He is selected as a representative for the *Trichosanthes* & *Trichosanthes* Plants and his name is enrolled in the *Trichosanthes* & *Trichosanthes* Plants in the *Trichosanthes* & *Trichosanthes* Plants published by University of Gauhati, Assam. He has also received recognition of 12 National & International Professional Bodies and is recognized as a representative of his institute and foreign journals.

In recent years, his research activities are concentrated on the evaluation of the diversity and conservation potential of the aromatic, spice & medicinal plants, ethnobotany of traditional rice-beer, ethnobotany of aromatic, spice and medicinal plants in seed germination, and Orchid anatomy.



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One of his books entitled 'Tejpat – the Indian Bay Leaves' published (2011) from Germany has been recently published (2021) in 5 European Language Editions: These are *Tejpat – les feuilles de la baie d'Indian* in French, *Tejpat – die indischen Lorbeerblätter* in German, *Tejpat – le foglie della baia indiana* in Italian, *Tejpat – indyjskie Liscie Zatoki* in Polish and *Tejpat – as Folhas da Baia da India* in Portuguese.

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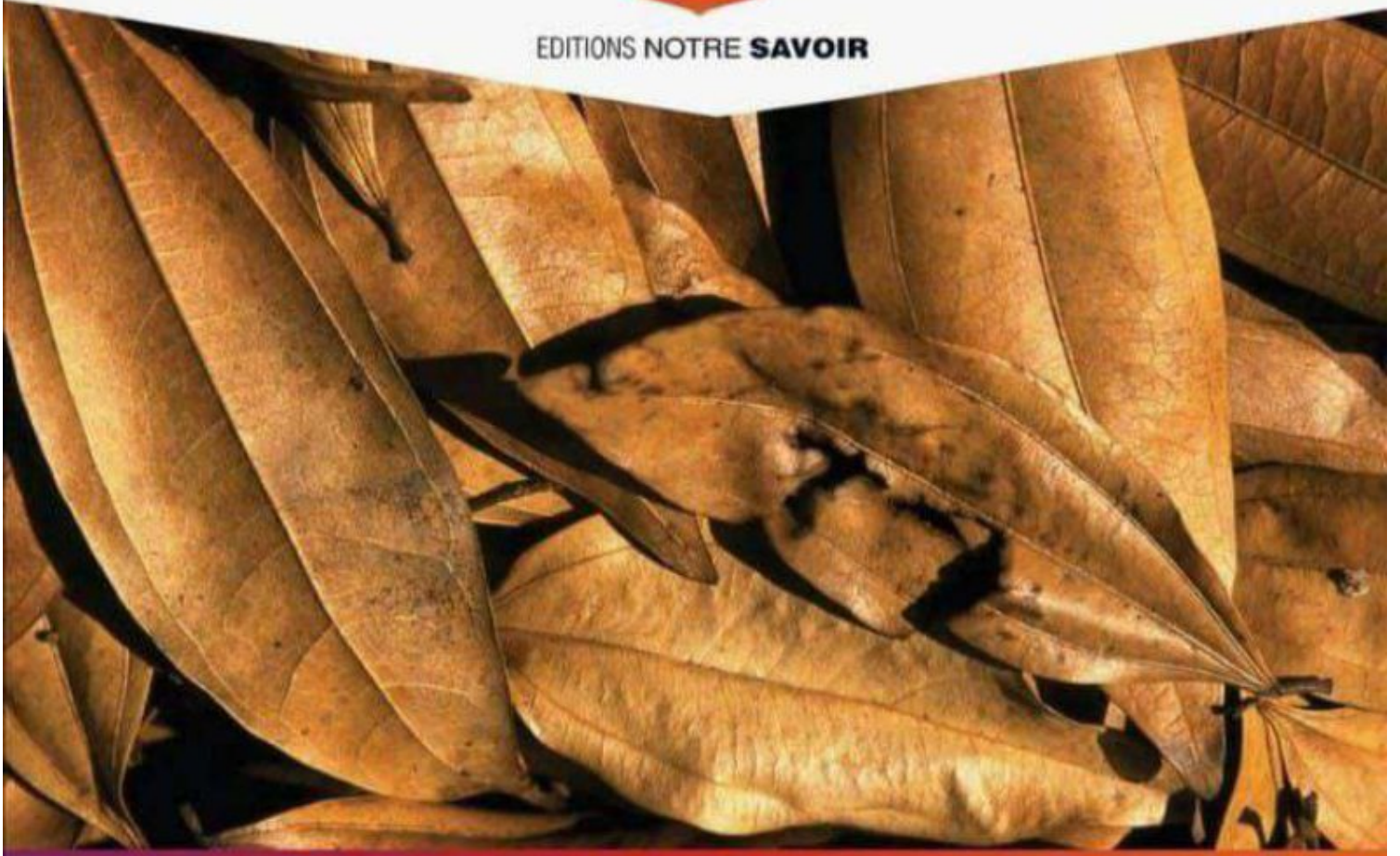
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# Tejpat - les feuilles de la baie d'Indian

*Taxonomie et diversité des ressources en tejpat, potentiel industriel des huiles essentielles, mesures de conservation*

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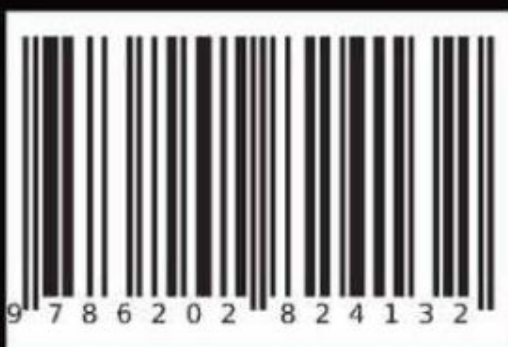
**Akhil Baruah**

# Tejpat - les feuilles de la baie d'Indian

Le tejpat est une sorte d'épice feuillue obtenue à partir d'un certain nombre de *Cinnamomum* spp. dont *C. tamala* est la "véritable source de commerce". Le Shillong du NE IND est le principal marché du tejpat, d'où il est transporté vers d'autres régions du pays/à l'étranger. Le *Cinnamomum* a un centre de diversité dans l'Himalaya oriental et les régions voisines du NE IND. De vastes travaux de recherche et de développement sur le tejpat sont en cours ou terminés dans le NE IND et dans d'autres régions du monde. Mais aucune compilation de ces travaux sous la forme d'une monographie n'est disponible à ce jour. Vu l'importance et le potentiel commercial de Tejpat, un livre intitulé *Tejpat-the Indian Bay Leaves* est maintenant à votre disposition. Ce livre rassemble des informations sur Tejpat qui sont actuellement dispersées dans un certain nombre de revues. Le contenu de base de ce livre est le suivant : Taxonomie, caractères microscopiques et huiles essentielles, conservation, aspects utiles et autres des espèces de *Cinnamomum* utilisées comme Tejpat. Ce livre sera utile aux institutions de recherche et d'enseignement, aux diverses industries, à l'agriculture et aux domaines connexes, ainsi qu'aux exportateurs, aux transformateurs, aux planteurs et à tous ceux qui s'intéressent aux plantes aromatiques et épicées.



Akhil Baruah : Lauréat du CSIR-New Delhi Senior/Extended- Senior Research Fellowships et lauréat du Dr. B.M. Das Memorial Science Award en sciences biologiques. Professeur principal de botanique, Darrang College, Tezpur (Université Gauhati, IND). Il est l'auteur de 116 documents de recherche, 120 articles scientifiques et 4 livres et a déposé un brevet.



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# **Tejpat - die indischen Lorbeerblätter**

*Taxonomie & Diversität der Tejpat-Ressourcen,  
Industrielles Potenzial ätherischer Öle,  
Erhaltungsmassnahmen*

# Tejpat - die indischen Lorbeerblätter

Tejpat ist eine Art Blattgewürz, das aus einer Reihe von *Cinnamomum* spp. gewonnen wird, von denen *C. tamala* die "echte Quelle des Handels" ist. Shillong von NE IND ist der Hauptmarkt für Tejpat, von wo aus es in andere Teile des Landes/aus dem Ausland transportiert wird. Die *Cinnamomum* hat ein Zentrum der Vielfalt im östlichen Himalaya und den angrenzenden Regionen der NE IND. Umfangreiche F&E-Arbeiten zu Tejpat werden in Nordost-Indien und auch in anderen Teilen der Welt abgeschlossen/fortgeführt. Bisher ist jedoch noch keine einzige Zusammenstellung dieser Werke in Form einer Monografie verfügbar. In Anbetracht der Bedeutung und des Marktpotenzials von Tejpat liegt nun ein Buch Tejpat - Die indischen Lorbeerblätter in Ihrer Hand. Dieses Buch fasst Informationen über Tejpat zusammen, die derzeit in einer Reihe von Zeitschriften verstreut sind. Die grundlegenden Inhalte dieses Buches sind - Taxonomie, mikroskopische und ätherische Ölzeichen, Konservierung, nützliche und andere Aspekte der als Tejpat verwendeten *Cinnamomum*-Arten. Dieses Buch ist nützlich für Forschungs- und akademische Institutionen, verschiedene Industriezweige, die Landwirtschaft und verwandte Bereiche sowie für Exporteure, Verarbeiter, Pflanzeur und alle, die sich für Aroma- und Gewürzpflanzen interessieren.



Akhil Baruah: Preisträger des CSIR-New Delhi Senior/Extended- Senior Research Fellowships & Empfänger des Dr. B.M. Das Memorial Science Award in Biological Science. A Sr. Asst. Prof. für Botanik, Darrang College, Tezpur (Gauhati Univ., IND). Er ist Autor von 116 Forschungsarbeiten, 120 wissenschaftlichen Artikeln und 4 Büchern und ist mit 1 Patent ausgezeichnet.



  
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# **Tejpat - le foglie della baia indiana**

*Tassonomia e diversità delle risorse Tejpat,  
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**Akhil Baruah**

# Tejpat - le foglie della baia indiana

Il tejpat è una specie di spezia a foglia ottenuta da una serie di *Cinnamomum* spp. di cui *C. tamala* è la "vera fonte di commercio". La Shillong di NE IND è il principale mercato del tejpat da dove viene trasportato in altre parti del paese/all'estero. Il *Cinnamomum* ha un centro di diversità nell'Himalaya orientale e nelle regioni limitrofe del NE IND. Ampi lavori di ricerca e sviluppo su Tejpat sono completati e sono in corso nel NE IND e anche in altre parti del mondo. Ma finora non è disponibile una sola raccolta di queste opere sotto forma di monografia. Considerando l'importanza e le potenzialità di mercato di Tejpat, un libro Tejpat-the Indian Bay Leaves è ora con la vostra mano. Questo libro raccoglie informazioni su Tejpat che sono attualmente sparse in diverse riviste. I contenuti di base di questo libro sono: Tassonomia, Personaggi microscopici e oli essenziali, Conservazione, Utile e altri aspetti delle specie di *Cinnamomum* usate come Tejpat. Questo libro sarà utile alle istituzioni di ricerca e accademiche, alle varie industrie, all'agricoltura e ai settori affini, così come agli esportatori, ai trasformatori, ai piantatori e a tutti coloro che sono interessati alle piante aromatiche e alle spezie.



Akhil Baruah: Premiato dal CSIR-New Delhi Senior/Extended- Senior Research Fellowships & Recipient of Dr. B.M. Das Memorial Science Award in Biological Science. A Sr. Asst. Prof. in Botanica, Darrang College, Tezpur (Gauhati Univ., IND). E' autore di 116 articoli di ricerca, 120 articoli scientifici e 4 libri e gli è stato accreditato un brevetto.





WYDAWNICTWO  
NASZA WIEDZA



# Tejpat - indyjskie Liście Zatoki

*Taksonomia i różnorodność zasobów Tejpatu, potencjał przemysłowy olejów bazowych, środki ochronne*

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**Akhil Baruah**

As per  
CBCS  
Syllabus

# Measurement and Evaluation in Education

For Gauhati University  
B.A. Fifth Semester  
Honours Course



**Dr. Mukul Saikia**

As per CBCS Course



# DIVERSITY OF CHORDATA

For B. Sc. 3rd Semester Zoology (Honours) Course



Manideep Raj



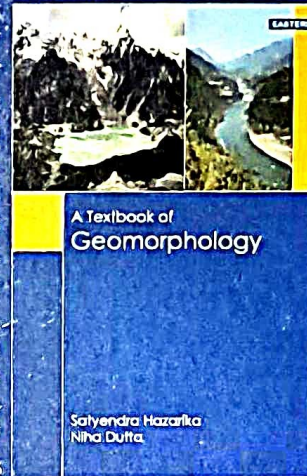
EASTERN

# A Textbook of Geomorphology

Satyendra Hazarika  
Niha Dutta

### The book

'A textbook of Geomorphology' is primarily an attempt for the undergraduate honours students of geography. As per new CBCS pattern of syllabus structure, five chapters are incorporated in it. The chapters covers introduction to Geomorphology, including its historic development, internal structure of the earth, endogenetic forces and exogenetic processes of landform development, various theories related to earth movement and finally cyclic concept of landform building and its related theories and its consequences under different geo-climatic conditions. Geomorphology as a science of landform study remains an integral foundation of geographic enquiry based on established theories and explanations. The book tries to highlight some of those explanations for the beginners of the subject. In the process various pioneering works on this line is taken as guidance as mentioned in the reference section. Various information are tried to be added with necessary tables and diagrams so that the beginners of the subject can get a grasp of the subject and its specific informations in easy & simple way.



### The Authors

**Dr. Satyendra Hazarika** (Ph.D, SLET-2003, DIP-TD) is working as a Assistant Professor (L-II) at Darrang College, Tezpur. The Arts Graduate Topper of Dibrugarh University (1993), Dr. Hazarika is also the recipient of Best Geography Graduate (1993) and Best Geography Post-graduate (1996-97) award of North-east India Geographical Society. He has published a number of research paper in journal of National repute, edited books and participated in several national and international seminars over the years. His field of specialization was Fluvial Geomorphology and did his Ph.D work in Flood vulnerability study of Kamrup Metropolitan District. (satyendrahazarika@rediffmail.com, m-94352-45858)

**Niha Dutta**, M.A, B-Ed, NET, is working as a Assistant Professor in contractual basis at Darrang College, Tezpur. Her field of interest includes Regional Planning, Social and Political Geography, Geomorphology and Population Geography. She has attended a number of national and international seminars and published a few research papers. Recently she has published a textbook titled 'Manav Bhugol' for the CBCS B.A./B.sc. 1st semester of both Dibrugarh and Gauhati university students. (nihadutta370@gmail.com, m-9101973153)

ISBN: 978 93 90434 24 4



2022

₹ 295.00



EBH Publishers (India)

an imprint of Eastern Book House®

136, M.L.N. Road, Panbazar, Guwahati-781001 (India)

As Per CBCS Syllabus

**A Text Book of**  
**Economic Botany,**  
**Biotechnology**  
**and Bioinformatics**



**Akhil Baruah**  
**Chittaranjan Baruah**

**KALYANI**



## For CBCS Botany 5th Semester Regular & Private (RE) Students of Universities of Assam and other Indian Universities

### About the Authors

**Dr. Akhil Baruah**, FES, FIAT, FLS (London), FAPT, Awardee of National Scholarship (1989-1990), CSIR-Junior Project Fellowship (1994-1996), CSIR-Senior Research Fellowship (1996-1999) and CSIR-Extended Senior Research Fellowship (1999-2000). He was working on *Cinnamomum* species of Northeast India for his doctoral thesis. He undertook his doctoral work at Regional Research Laboratory (CSIR), (Presently known as North East Institute of Science & Technology), Jorhat during 1994-2000.

For his outstanding research contribution, he has been awarded "9<sup>th</sup> Dr. Biraj Mohan Das Memorial Science Award, 2007" in Life Science Group.

However, in recognition of his all round excellence as an educationist as well as for his excellent Academic and Research activities, Oil India Limited has been awarded/selected him the "Oil Shikshya Ratna Puraskar, 2017" on the auspicious occasion of Teachers' day.

Dr. Baruah has also been selected for the "Teacher Award, 2020" by the IQAC of Darrang College, in recognition of his, all round excellence in Academic, Research and other activities. The IQAC has been instituted this Award for the first time in the "Platinum Jubilee" year (1945, 26 July-2020) of this premier institute.

Dr. Baruah is presently serving as Associate Professor in the P.G. Department of Botany (Taxonomy), Former HoD, Darrang College, Tezpur under Gauhati University, Guwahati, Assam. He is so far credited with 159 (105+54) research papers/book chapters, 32 Books (26 sole/first authored + 6 Edited). One of his books entitled 'Tejpat - the Indian Bay Leaves' published (2011) from Germany has been recently published (2021) in 5 European Language Editions. These are in French, German, Italian, Polish and in Portuguese. However, he has 34 seminar presented papers, delivered 11 talks as resource person/speaker in various research/academic institutions, more than 230 popular science articles, credited with 1 patent, guided 1 M. Phil. student and many P.G. students for their M. Sc. Dissertations, discovered 4 new aromatic plant taxa (2 new species and 2 new variety), 3 new types of stomata, and many promising aromatic & spice plant resources for natural essential oils of fragrance, flavour & pharmaceutical values from Northeast India.

He is selected as a Specialist for the Herbs, Spices & Medicinal Plants and his name is enrolled in the 'International Directory of Specialists in the Herbs, Spices & Medicinal Plants' published by University of Massachusetts, USA. He is the Life/Fellow members of 12 National & International Professional Bodies and is recognized as Reviewer/Referee of 10 Indian and Foreign Journals.

**Dr. Chittaranjan Baruah**, M.Sc., Ph.D. in Zoology, Advanced Postgraduate Diploma in Bioinformatics (BI-A Level), member of International Union for Conservation of Nature (IUCN-CEC & IUCN-SSC), Founder & Editor of *Asian Journal of Conservation Biology* (Scopus-indexed, UGC-CARE Journal), Editor of *Northeast Journal of Contemporary Research (NeJCR)*, Awardee of Conservation Leadership Program (CLP) award (2010) jointly awarded by Bird Life International, Fauna & Flora International (FFI) and Wildlife Conservation Society (WCS). Dr. Baruah was an Asian Scholar of ASPIn-situCC based at Wetlands Institute, New Jersey, USA for six months (2010).

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Dr. Chittaranjan Baruah



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For B. Sc. 5th Semester Zoology (Honours) Course



Dr. Chittaranjan Baruah



## ABOUT THE AUTHOR



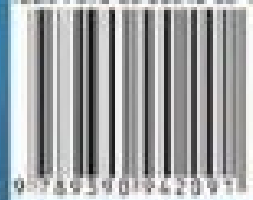
Dr. Chittaranjan Baruah, M.Sc., Ph.D. in Zoology, Advanced Postgraduate Diploma in Bioinformatics (NIELIT B.A Level), member of International Union for Conservation of Nature (IUCN), Founder & Editor of Asian Journal of Conservation Biology (ISSN 2278-7666, Scopus-indexed, UGC CARE Journal), Editor of Northeast Journal of Contemporary Research (NeJCR),

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ISBN : 978-83-90943-09-1



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সম্পাদনা  
 ড° দুলাল চন্দ্ৰ দাস

বিশিষ্ট লেখক, অধ্যাপক ড° দুলাল চন্দ্ৰ দাস সম্পাদিত 'সাম্প্রতিক অসমীয়া চুটিগল্পৰ গতিপথ আৰু কেইগৰাকীমান গল্পকাৰৰ গল্প' নামৰ গ্ৰন্থখন অসমৰ সাহিত্য পৰিষদৰ পৰিচালনা মণ্ডলৰ পৰা এক বিশিষ্ট ছুট নামত কৰিলি। এই গ্ৰন্থখনত সাম্প্রতিক অসমীয়া চুটিগল্পৰ বহুবিধ গঢ়ি ধৰণ সমালোচনাত্মকভাৱে সাম্প্রতিক সময়ৰ ২৪ গৰাকী গল্পকাৰৰ গল্প নিৰ্বাচন কৰিছে। ইয়াৰ লক্ষ্য হৈছে— "তৎ কালেন কৈছিল সমালোচনাৰ প্ৰাথমিক কৰ্তব্য হ'ল— "Immediately to show everything in its true form, however it may be disguised to common eyes"। ড° দুলাল চন্দ্ৰ দাসৰ লেখক হিচাপে তেওঁ টানি ক'ব পাৰি যে অধ্যাপক ড° দুলাল চন্দ্ৰ দাস সম্পাদিত এই গ্ৰন্থখনত সমালোচনাৰ প্ৰাথমিক কৰ্তব্যটো সুন্দৰকৈ প্ৰতিফলিত হৈছে। মূল কথা, এই গ্ৰন্থখনৰ প্ৰতিটো গল্পকই গল্পকাৰসকলৰ গল্পৰ প্ৰকৃত মূল্য নিৰ্বাচন কৰাৰ সাহায্য প্ৰদান কৰিবলৈ উদ্ভাৱিত কৰা হৈছে।

— সুব্রত জ্যোতি মেধা

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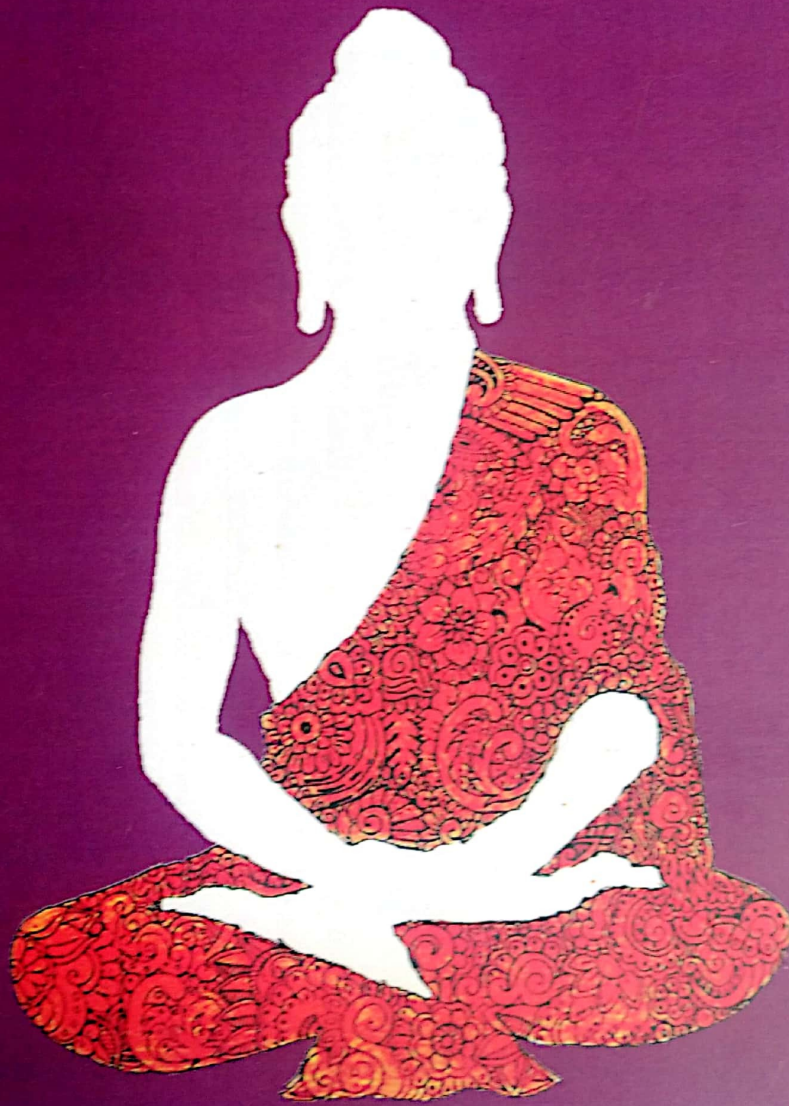


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An International Peer Reviewed Multilingual Edition 2021



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Research Book on Indological Study edited by Dr. Dhundi Raj  
Upadhyaya (Chief Editor), Tezpur, Assam (India) 2021.

Price- ₹380/-

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Edition  
2021 (Vikram Samvat: 2077)

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ISBN - 978-93-90919-01-7

### Publishers

Vagambhrini-Sanskrit-Sahitya-Samiti  
Email- rajjmg@gmail.com,  
sagarikabhattacharjee700@gmail.com  
☎ +91-8638082147, 7086879817, 6913208297 & 7002274630  
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printed at Idiom Printers, Ganeshguri, Guwahati-6.

প্রথম প্রকাশ : ২০২১

মূল্য : ৩৫০/-

পুথিভঁৰাল মূল্য : ৫০০/-

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মুদ্ৰক : ইডিয়ম প্ৰিণ্টাৰ্ছ, গণেশগুৰি, গুৱাহাটী-৬

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## পূৰী বৰমুদৈৰ 'ৰাজনীতি নুবুজা মানুহ'

ড° গকুল কুমাৰ দাস

ৰাজনীতি বৰ জটিল বিষয়। বুজাসকলৰ বাবে ভাল। ইয়াৰ অচিলা লৈ বিবিধ সা-সুবিধা আদায় কৰিব পাৰে; বিপদ নুবুজাসকলৰহে। এইসকল পিষ্ট হয়, দুঃখ পায় আৰু ৰাজনীতিৰ পাকচক্ৰত সৰ্বস্বান্ত হয়।

ৰাজনীতি বুজা মানুহবিলাক বাহ্যিক দৃষ্টিত সুখী যেনেই লাগে। কিন্তু ৰাজনীতি নুবুজা মানুহবিলাক যে বাহিৰে ভিতৰে অসুখী সেয়া নিশ্চিত। এনে ৰাজনীতি নুবুজা মানুহৰ দুঃখ আৰু যন্ত্ৰণা উপজীৱ্য হিচাপে লৈ পূৰী বৰমুদৈয়ে ৰচনা কৰিছিল তেওঁৰ অন্যতম উৎকৃষ্ট গল্প ৰাজনীতি নুবুজা মানুহ।

গল্পটোত পূৰী বৰমুদৈয়ে প্ৰকাশ্যে ৰাজনীতি নুবুজা মানুহখিনিৰ দুঃখ আৰু যন্ত্ৰণাৰ কথা প্ৰকাশ কৰিছে। এনে এক শ্ৰেণীৰ মানুহক প্ৰতিনিধিত্ব কৰে মালতী, মালতীৰ শাহুৱেক আৰু গিবীয়েক ভদ্ৰেশ্বৰহঁতে। এওঁলোকৰ দুখৰ কথা গল্পকাৰৰ ভাষাতেই শুনক— '...ৰাজনীতি তাই(মালতী) নুবুজে। শাহুৱেকেও নুবুজে। ভদ্ৰেশ্বৰেও বুজা নাছিল। আৰু এই ইমানবোৰ মানুহ—দুখ-কষ্ট, হতাশাই ভাঙি চুৰমাৰ কৰা ইমানবোৰ শিবিৰত থকা মানুহ—ইহঁতে ৰাজনীতি বুজেনে? ইহঁতেও নুবুজে। আৰু সিহঁতে? চকু মুদিলেও ভয়ানক চিঞৰ, জুই-ধোঁৱাৰ মাজত মালতীয়ে সিহঁতৰ মুখবোৰ দেখে। যি আমাৰ ঘৰ জ্বলাই দিলে, আমি যাৰ ঘৰ জ্বলাই দিলো—যি আমাৰ বহুত মানুহৰ তেজেৰে হাত ৰঙা কৰিলে—যাৰ তেজেৰে আমাৰ হাত ৰঙা হ'ল—এইবোৰ ৰাজনীতি বুজি পোৱাৰ ফলত নে, বুজি নোপোৱাৰ ফলত?'

গল্পটোৰ উক্তিত এটা কথা স্পষ্ট হৈ পৰিছে যে ৰাজনীতি বুজি নোপোৱা মানুহখিনি ঘাইকৈ অশিক্ষিত বা অৰ্ধ-শিক্ষিত, শ্ৰমিক, ভোকাতুৰ বা তাতকৈ সহজ ভাষাত ক'বলৈ হ'লে তেনেই সাধাৰণ শ্ৰেণীৰ মানুহ। প্ৰসঙ্গক্ৰমে গল্পকাৰে এঠাইত এই কথাও স্পষ্ট কৰি দিছে যে ঠাইডোখৰত ভ্ৰাতৃঘাতী সংঘৰ্ষ চলিছে (যি আমাৰ ঘৰ জ্বলাই দিলে, আমি যাৰ ঘৰ জ্বলাই দিলো—যি আমাৰ বহুত মানুহৰ তেজেৰে আমাৰ হাত ৰঙা কৰিলে—যাৰ তেজেৰে আমাৰ হাত ৰঙা হ'ল...) আৰু পীড়িত এচাম মানুহে শিবিৰত আশ্ৰয় গ্ৰহণ কৰি আছে। মালতী এনে শ্ৰেণীৰ মানুহৰ প্ৰতিনিধি।

আগতে মালতীৰ জীৱনৰ বেখাডাল পোন আছিল। যদিও তাইৰ মাক-পিতাক বুলিবলৈ কোনো নাছিল, যদিও তাই দূৰ সম্পৰ্কীয় মাহীয়েক এজনীৰ ঘৰত 'লেকেচা-থেকেচা খাই' ডাঙৰ-দীঘল হৈছিল, কিন্তু তাই ৰাজনীতিৰ পাকচক্ৰ বুজা নাছিল। তাই ভদ্ৰেশ্বৰ

A photograph of a business meeting. A person in a dark suit is sitting at a wooden table, pointing at a document with a pen. There are several papers, a white coffee cup, and a newspaper on the table. The newspaper has the words 'of the Union' visible. The background is a blurred office setting.

# CONTEMPORARY ISSUES IN BUSINESS AND MANAGEMENT

Editor  
Dr. Mintu Gogoi

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A collection of articles on contemporary issues in business and management, edited by Dr. Mintu Gogoi and published by Gargaon College Publication Cell & Purbayan Publication on the occasion of Diamond Jubilee.

ISBN: 978-93-90919-52-9

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**First Edition :**

September, 2021

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**Cover design :** Abhijit Bora

**Price:** 500/-

**Published by:**

Gargaon College Publication Cell  
Simaluguri, Assam-785686

&

Purbayon Publication

Jaswanta Road,

Near Panbazar Aadarsha Prathamik

Vidyalaya

Panbazar, Guwahati- 1, Assam

Email-purbayonindia21@gmail.com

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# A study on Agricultural Produce Marketing in Assam

Sanjib Das

## Introduction:

Agriculture sector is a major contributor to the state economy. It provides livelihood to a significant proportion of the people of Assam. Almost 50 percent of the total land area is utilized for cultivation. The net cultivated area of the state is 4174023 hectares. The net area is 2810597 hectares, average operational holding is 1.15 hectare only, and more than 83 percent of farmer families are small and marginal family. The contribution of agriculture sector to GSDP was pegged at 6.48 percent in 2014-15. This sector continues to support more than 53 percent of work force. Assam covers an area of 78,438 sq. km with a population 3.12 Crores. (*Economic Survey 2011; Statistical Handbook 2014-15*).

The term marketing has been defined by Phillip Kotler as, "Human activity directed at satisfying the needs and wants through exchange process." Marketing is a vital tool for developing agriculture sector of Assam. Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society. Agricultural marketing brings producers and consumers together through a series of activities and thus becomes an essential element of the economy. Agricultural marketing covers the services involved in moving agricultural produce viz. food grains, cash crops, vegetables, dairy products, etc. from farmers to the consumers. However, the introduction of digital marketing has brought drastic change in the



Jnandabhiram (jnan)  
Chutia, PhD

## Dissecting the molecular basis of drought-induced oxidative stress tolerance in rice

**Authors** Amit K Pradhan, Sabnoor Y Jyoti, Zina M Shandilya, Mehzabin Rehman, Debanjali Saikia, Junu Poudel, Jyotirmay Kalita, Kongkona Borborah, Uma K Chowra, Jnandabhiram Chutia, Lakshminarayana R Vemireddy, Bhaben Tanti

**Publication date** 2021/6/1

**Journal** Molecular breeding for rice abiotic stress tolerance and nutritional quality

**Pages** 249-273

**Publisher** John Wiley & Sons, Ltd

**Description** Drought is one of the major abiotic stresses that limit rice productivity worldwide. An in-depth understanding of the mechanisms involved against drought stress is vital for determining the process of tolerance. Rice plants undergo various morpho-physiological changes under drought, but the major factor associated with it is the increase in the level of reactive oxygen species (ROS), that leads to oxidative stress. To cope with drought-induced oxidative stress, rice plants have developed various mechanisms of tolerance, such as osmotic-adjustment or increase in antioxidant activity leading to structural rearrangements. The mechanisms often vary among species that result in variation of drought-tolerance capacity. Recent developments of various high-throughput technologies like RNA-Seq, genome-wide SNP analysis, and different "OMICS" technologies, such as functional genomics, transcriptomics ...

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# Puṣpikā

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**Volume 6**

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Proceedings of the 12<sup>th</sup>  
International Indology  
Graduate Research Symposium  
(Vienna, 2021)

Vitus Angermeier  
Christian Ferstl  
Dominik A. Haas  
Channa Li  
(eds.)

# Puṣpikā

Proceedings of the 12<sup>th</sup> International  
Indology Graduate Research Symposium  
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edited by

Vitus Angermeier,  
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Channa Li

**Bibliographic information published by the Deutsche Nationalbibliothek**

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at <http://dnb.dnb.de>.



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Published at Heidelberg Asian Studies Publishing (HASP), 2023

Heidelberg University / Heidelberg University Library  
Heidelberg Asian Studies Publishing (HASP),  
Grabengasse 1, 69117 Heidelberg, Germany  
<https://hasp.ub.uni-heidelberg.de>

The electronic open access version of this work is permanently available on the website of Heidelberg Asian Studies Publishing:  
<https://hasp.ub.uni-heidelberg.de>  
urn: urn:nbn:de:bsz:16-hasp-1133-1  
doi: <https://doi.org/10.11588/hasp.1133>

Text © 2023, the authors.  
Layout and typesetting: Vitus Angermeier

ISBN 978-3-948791-44-5 (Softcover)  
ISBN 978-3-948791-43-8 (PDF)






## The *Harṣacarita* and Two Contemporary Epigraphic Texts: Reflections on the Polity of Kāmarūpa during the Reign of Bhāskaravarman

Devdutta Kakati\*

**Abstract:** The period from c. 300 to 700 CE witnessed the emergence of classical Sanskrit literary traditions, the biography (*carita*) in prose and the versified eulogy or panegyric (*praśasti*), mostly of rulers and occasionally of influential *brāhmaṇa* families. The earliest known *carita* was Bāṇabhaṭṭa's *Harṣacarita*, "Deeds of Harṣavardhana". The seventh chapter (*ucchvāsa*) of the *Harṣacarita* entitled "The Gift of the Umbrella" (*chatralabdhi*) narrates a treaty sealed in common interest between the Kanauj ruler Harṣavardhana (606–647 CE) and Bhāskaravarman, a ruler of the Bhauma-Varman dynasty of Kāmarūpa, Assam (c. 600–650 CE). This paper attempts to situate the seventh *ucchvāsa* of the *Harṣacarita* vis-à-vis two significant copper plate inscriptions (both approximately dated to the 7<sup>th</sup> century CE) issued by Bhāskaravarman himself and containing elaborate eulogies as preambles. Bhāskaravarman was eulogized in versified *praśastis* which were followed by the operative part of these royal

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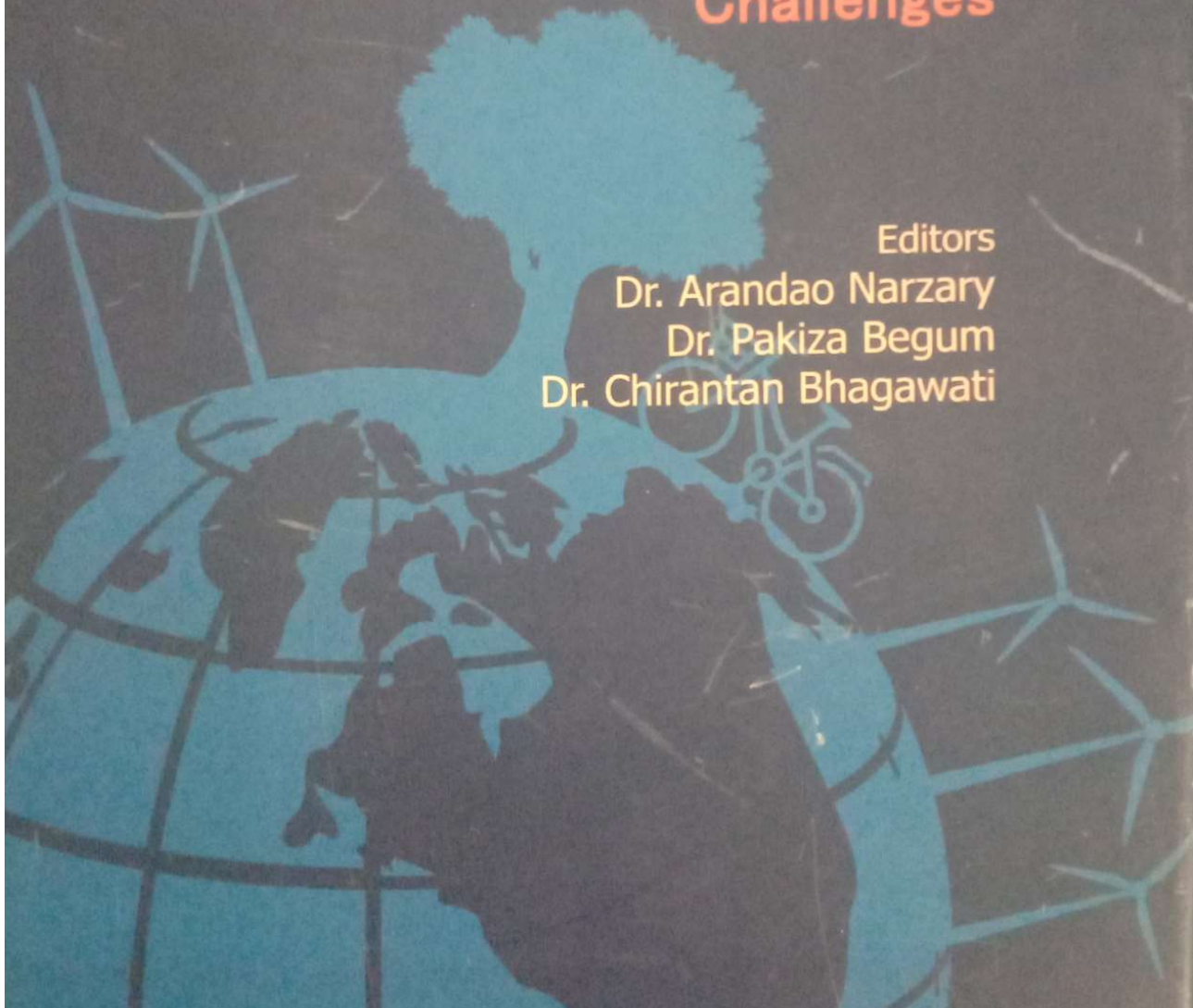
\*  <https://orcid.org/0000-0001-9403-6116>. I am immensely thankful to Professor Ranabir Chakravarti, retired Professor at the Centre for Historical Studies, Jawaharlal Nehru University, for his critical remarks, comments on this paper as well as his generous help in procuring many materials. My special thanks go to Professor Debarchana Sarkar, Professor, Department of Sanskrit, Jadavpur University and Professor Suchandra Ghosh, Professor, Department of History, University of Hyderabad, for generously sharing their insights and writings with me.



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# Wetlands of Assam and its Conservation: A Review

Kishor Deka, Dipanjali Devi , Rajashree Bordoloi\*

## Abstract

The wetland provides critical habitat for a large number of flora and fauna. In India, the total area under wetlands was estimated to be 11.69 m ha. This accounts for 3.66 per cent of geographic area of the country. Assam is a land of various wetlands. Wetlands supports various flora and fauna to survive in their natural habitat. In Assam 5097 wetlands and 6081 small wetlands have been identified which encompass 764372 hectares that is around 9.74 % of the total geographic area of the state. Wetlands act as important repositories of aquatic biodiversity. The present paper is an attempt to investigate the human activities including agricultural practices and the influence of solid waste causing a significant change in the land use, land cover and subsequent loss of wetlands. The present paper will discuss human interference and its impact on wetlands of Assam. The data analyzed and presented in this paper is based on both primary and secondary sources.

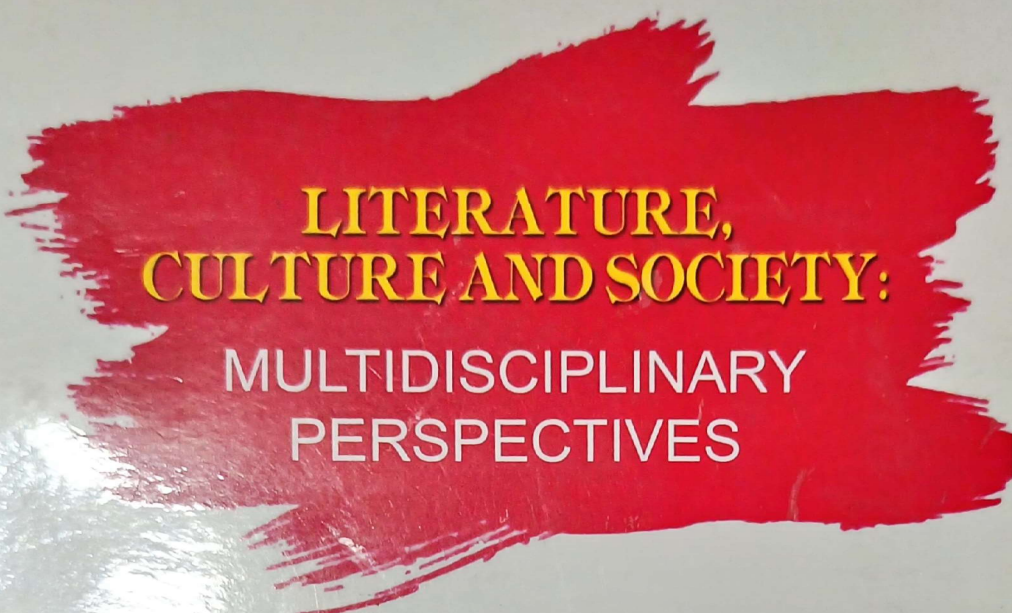
**Key words:** Wetland, Assam, human interference, conservation

## 1. INTRODUCTION

Wetlands are areas where water is the primary factor controlling the environment and the associated plant and animal life. It is the transitional lands between terrestrial and aquatic eco-systems where the water table is usually at or near the surface or the land is covered by

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A large, horizontal, red brushstroke graphic with a textured, painterly appearance, serving as a background for the title text.

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# **Literature, Culture and Society:** ***Multidisciplinary Perspectives***

PUBLISHED BY : DR. ABUL FOYES MD MALIK, DEPT. OF BENGALI  
DIGBOI MAHILA MAHAVIDYALAYA, DIGBOI

DR. DIPAK KUMAR DOLEY, DEPT. OF ENGLISH  
DIBRUGARH UNIVERSITY, DIBRUGARH

FIRST PUBLISHED : AUGUST, 2021

EDITED BY : DR. ABUL FOYES MD MALIK, DEPT. OF BENGALI  
DIGBOI MAHILA MAHAVIDYALAYA, DIGBOI

DR. DIPAK KUMAR DOLEY, DEPT. OF ENGLISH  
DIBRUGARH UNIVERSITY, DIBRUGARH

COVER DESIGN : EDITORS

PRICE : 1000/- (RUPEES ONE THOUSAND ONLY)

PRINTED BY : THE ASSAM COMPUTERS  
SECTOR - 49, BY LANE - 5<sup>TH</sup>  
BAMUNIMAIDAN INDUSTRIAL AREA  
GUWAHATI

ISBN : "978-81-950935-5-7"

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## Representation of Nationalism as Postcolonial Entity in Raja Rao's *Kanthapura*

*Chandrasmita Borgohain*

"Postcolonial as we define it does not mean post-independence or 'after colonialism' for this would be to falsely ascribe an end to the process. Post-colonialism, rather, begins from the very first moment of the colonial contact. It is the discourse of oppositionality which colonization brings into being." (Ashcroft, Griffiths, Tiffin, 117)

Raja Rao has remarkably pictured the social and political scenario of India from the period of 1919 to 1930. It was that time when Gandhian movement was at its very best peak and has created fascinating influence of Gandhian political ideology over the country. India was marching towards Independence filled with nationalistic movements and national pride.

'Kanthapura, which looks in many ways like a realist epic of the freedom struggle, turns out on introspection to be the first of Raja Rao's explorations of the nature of India... Raja Rao constantly invites us to see life as symbolic... (71)' as remarked by Williams H.M. Rao had explored his best knowledge of Indian culture and history in this novel.

Raja Rao's conception of the narration of his *Kanthapura* is thoroughly Indian and he approaches the story as a 'sthala-purana' or the epic of a place. The word 'puranas' literally means 'ancient, old', and it's a huge genre of Indian literature with a few wide selection of topics, particularly myths, legends and other traditional lore composed primarily in Sanskrit, but also in regional languages.

'I like to write like a Purana. I like the Puranic conception, in fact, that is the only conception of the novel for me. I don't want to write like a foreign novelist. I am very much an Indian and the Indian form is the Puranic form.' Raja Rao as said in his interview with Shiva Niranjana. Thus the novel tells of the legendary history of a South Indian Hamlet caught in the maelstrom of the freedom struggle of the nineteen thirties, a tale told by an old grandmother. *Kanthapura* integrates myth with history and fact with fiction.

This novel is full of Indian themes, Indian characters, Indian life, manners, etc. which makes the novel unmistakably national. *Kanthapura* is a village of South Kerala is microscopically picturized in the novel. Since the novel is constraint to the village and its happenings only, but in fact the same grand events take place all over the country. And hence *Kanthapura* seems to represent all the villages of India. *Kanthapura* and its happenings is the national situation. It depicts of the Indian subcontinent which has come to life where Gandhian principles and values were followed to thrive the struggle of movement for national freedom during twenties and thirties worked on successfully. The village is transformed into the living symbol of Gandhism.





# EXPLORING LOCAL HISTORY AND FOLK CULTURE OF NORTH EAST INDIA

*Edited by*

**DR. RABINDRA BORDOLOI**



Proceeding Volume of the selected papers released on the occasion of the ICSSR (New Delhi) Sponsored National Seminar on "Exploring Local History and Folk Culture of the Indigenous people of North East India with special Reference to Assam" held at Nanda Nath Saikia College, Titabar, Jorhat (Assam) on 24<sup>th</sup> & 25<sup>th</sup> February, 2021.

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*Published by:* Principal, Nanda Nath Saikia College, Titabar

*Printed at :* Barkataki Offset Printers, Malow Ali, Jorhat, Assam

ISBN: 978-81-86865-09-5

*Price :* ₹ 1000.00

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# **Life Cycle and Folk Beliefs of the Bodos: A Study with Special Reference to Chirang District of Assam**

**Jwngdaw Basumatary\***

## **Introduction**

The Bodos are the single largest ethnic group amongst the Scheduled Tribes of Assam. The word 'Bodo' or 'Boro' denotes both the language and the community. Racially, the Bodos belong to the Indo-Mongoloid group and linguistically to the Tibeto-Burman branch of Sino-Tibetan language family (Grierson, 1903). Their main concentration is found in the state of Assam and some adjacent areas of Arunachal Pradesh, Meghalaya, Nagaland, Mizoram, Manipur, Tripura, West Bengal, Bihar, Nepal and Bhutan. Like many other tribal communities of Assam, the Bodos also have their own distinct language, literature, culture, heritage, traditions, customs, rituals and other socio-religious practices by which they represent their own world view.

Life is full of transitions in cyclic order. The life cycle is a complex process consisting of critical moments of human life from joys of child-birth to the sorrows of death. The practices of life cycle rituals are found in many societies and are often based on traditions and community. The life cycle consists of a series of rites which includes birth, marriage and death. Among the Bodos, some customs and traditions are observed relating to the life cycle which constitutes their traditions, identity and culture. Different folk beliefs are also practised among the Bodos relating to birth, marriage and death. Though the folk beliefs of the Bodos have not been scientifically proved, yet it has tremendous significance in their society even in this modern age of science and technology. Therefore, the present study will help in terms

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গুৱাহাটী আৰু বড়োলেণ্ড বিশ্ববিদ্যালয়ৰ তিনিবছৰীয়া স্নাতক মহলাৰ অনুমোদিত নতুন পাঠ্যক্রম অনুসৰি  
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INTRODUCTION TO POLITICAL THEORY

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পাৰভিন চুলতানা

পূৰ্ণানন্দ পাৰে  
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**SNATAK MAIHALAR RAJNAITIK TATTAR PARICHAY : A Textbook on Political Science** written by Manash Pratim Baruah, Purnanda Pawe Parvin Sultana and Barnali Kalita in accordance with the latest Syllabus (CBCS) prescribed by Gauhati University and **Published by Assam Book Depot, Panbazar, Guwahati-781001, Ph. 03612543896.**  
email : aabeedee25@gmail.com

প্রকাশক :

**অসম বুক ডিপো**

পানবজাৰ, গুৱাহাটী-১

ফোন : ০৩৬১২৫৪৩৮৯৬

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প্রথম প্রকাশ : জুন, ২০২১

ISBN: 978-93-91158-01-9

মূল্য : ২৮০.০০ টকা।

অক্ষৰ বিন্যাস :

সাই লেজাৰ, পানবজাৰ, গুৱাহাটী-১

প্রচ্ছদ : শ্যামল বাহা

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ফোন : ২৬৫২-১৪২৩

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### Unit-3

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সহায়ক গ্ৰন্থপঞ্জী :

**আমাৰ প্ৰকাশনৰ দ্বাৰা প্ৰকাশিত স্নাতক মহলাৰ (কলা, বিজ্ঞান আৰু বাণিজ্য শাখা) গ্ৰন্থসমূহ।**

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মানস প্ৰতিম বৰুৱা আৰু পাৰভিন চুলতানা
- স্নাতক মহলাৰ ভাৰতবৰ্ষত সাংবিধানিক চৰকাৰ আৰু গণতন্ত্ৰ  
মানস প্ৰতিম বৰুৱা, পূৰ্ণানন্দ পাৰে আৰু কমল ঠাকুৰীয়া
- স্নাতক মহলাৰ ভাৰতৰ চৰকাৰ আৰু ৰাজনীতি (দ্বিতীয় বাৰ্ছাসিক)  
মানস প্ৰতিম বৰুৱা, পূৰ্ণানন্দ পাৰে, পাৰভিন চুলতানা আৰু ড° যুথিকা দাস
- স্নাতক মহলাৰ ব্যক্তিগত অৰ্থনৈতিক তত্ত্ব - ১ (প্ৰথম বাৰ্ছাসিক)  
ড° কুমুদ ভাগৱতী আৰু দিলীপ কুমাৰ গোস্বামী
- স্নাতক মহলাৰ সমষ্টিবাদী অৰ্থনীতি-১ (তৃতীয় বাৰ্ছাসিক)  
ড° নিহাৰ বঞ্জন কলিতা, ড° সঞ্জয় পাঠৰী আৰু ড° জোনালী নাথ
- স্নাতক মহলাৰ সাধাৰণ দৰ্শন (প্ৰথম বাৰ্ছাসিক)  
নীলমণি ফুকন, ড° মণ্টু কুমাৰ দাস আৰু ড° বনজিৎ বৈশ্য
- স্নাতক মহলাৰ তৰ্কবিদ্যা (প্ৰথম আৰু দ্বিতীয় বাৰ্ছাসিক)  
নীলমণি ফুকন, ড° মণ্টু কুমাৰ দাস আৰু ড° বনজিৎ বৈশ্য
- স্নাতক মহলাৰ ভাৰতীয় দৰ্শন (দ্বিতীয় আৰু তৃতীয় বাৰ্ছাসিক)
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# Being Entrepreneur— Skill, Scope and Beyond



Prof. C. S. Yadav  
Dr. Sunita Tanwar

## Impact of Motivational Factors on the Growth of Rural Micro Entrepreneurship: A Study in the Sonitpur district of Assam

— Dr. Dipanjan Chakraborty, Dr. Bidyut Bikash Baisya, Pom Sen Chakraborty

### Abstract

India may be one of the fastest-growing economies of the world today. But there is a large area of darkness in the rural hinterland. About 720 million people live in 6 lakh villages in rural India. Of the total workforce, 60% of workers are engaged in agriculture. About 19 crore people living in rural India are below the poverty line. The share of agriculture has increasingly declined in recent years resulting in continuous migration from the rural to urban areas in search of better employment opportunities and living standards. Thus, there is a need to strengthen employment opportunities in rural areas by promoting rural entrepreneurship. The same scenario prevails in the state of Assam too. The economy of the state is heavily dependent on agriculture. The cultivators and agricultural laborers constitute 64% of the total working population. Despite being endowed with immense potential for the development of resource-based and demand-based industries, the pace of rural industrialization in Assam has not been satisfactory. The study is made in the Sonitpur district of Assam based on data collected from 60 entrepreneurs through a structured questionnaire. The findings suggest that the entrepreneurs were primarily motivated by the need for personal development, autonomy, and recognition. The study also provides new insights into the various operational problems faced by rural micro-entrepreneurs in the district. It concludes with a few suggestions based on the findings of the study.

### tion

India's heart lies in villages. Development can be achieved only by transforming rural India into a modern development that does not fulfil the needs of especially the poor, cannot be done. It is one of the fastest-growing economic areas. It is an area of darkness in the rural hinterland. The villages in rural India. Of the total workforce in agriculture. The contribution of agriculture to the GDP (19 crore people living in rural India. (commission) It is now recognized that we should concentrate on the generation of employment as a way of poverty alleviation, rural development (Kamalakkannan, 2006). The unemployment rate is 70% of the Indian labor force. The impact of globalization. The answer to the question is the number of jobs where rural India can create become a reality only if micro-entrepreneurship is all over rural India. (Santana)

Assam, a part of north-east India, is a geographically distinct part of the country. It is in villages. Agriculture accounts for 69% of the workforce and employs 69% of the workforce. The unemployment rate is 70.44%. The unemployment rate in Assam as there is a gradual increase in unemployment (Assam 2011). The basic rationale is to provide additional employment opportunities. The distribution of income and a

**About the Editors**



**Dr. C. S. Yadav** Professor, Graphic Era Hill University, Dehradun is having 14+ years of Academic, Research & Consultancy Experience at National and International Universities. He worked with Tecnologico de Monterrey. He undertook various Consultancies and Research Projects with Prominent Clients with the Dept. of Business at ITESM and published good number of research papers at National and International journals. He also, worked as Foreign Professor to collaborate for various Short Term and Long Term Exchange Program with International University ties with USA, Europe and South America blended with International Consulting experience in North America, Latin America and Europe.



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(গুৱাহাটী বিশ্ববিদ্যালয়ৰ স্নাতক ষষ্ঠ ষাণ্মাসিক  
অসমীয়া সন্মান পাঠ্যসূচী বিষয় সম্পৰ্কীয়  
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articles on Assamese Children literature, Edited by  
Dr. Luish Gogoi, and published by Assam Book Trust,  
Panbazar, Guwahati-1

ISBN : 978-93-91403-78-2

First published : April, 2022

Price : Rs. 180.00 only



প্রকাশক : অসম বুক ট্ৰাষ্ট, পাণবজাৰ, গুৱাহাটী-১।

প্রথম সংস্কৰণ : এপ্ৰিল, ২০২২

মূল্য : ১৮০.০০ টকা।

গ্রন্থস্বত্ব : সম্পাদক

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# CORE MICROBIOME

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Core Microbiome: Improving Crop Quality and Productivity

Chapter 15

## Microbial Biofilms

### Optimal Genetic Material Exchange in a Microbiome Environment

Niraj Singh, Pranjali Pratim Das

Book Editor(s): Javid A. Parray, Nowsheen Shameem, Elsayed Fathi Abd-Allah, Mohammad Yaseen Mir

First published: 10 May 2022

<https://doi.org/10.1002/9781119830795.ch15>

Citations: 1

## Abstract

Biofilm formation is a crucial feature in a wide range of microorganisms. Biofilms are elucidated as a well-organized group of microorganisms persisting within a self-secreted polymeric matrix. Most of the pathogenic and nonpathogenic bacterial species in natural settings reside within biofilms, and it provides a suitable physicochemical environment for cell-to-cell contact. Recent research has revealed that biofilms are hot spots for genetic material exchange and horizontal gene transfer due to the high proximity of cells within the multicellular structure. Furthermore, higher transformation rates are restricted to smaller DNA fragments in biofilms and influence other more prominent genetic elements, such as plasmids. Thus, biofilms are ideally suited to the genetic material exchange, plasmid stability, and they also promote host range enhancement of mobile genetic factors during horizontal gene transfer. The objective of this chapter is to highlight gene transfer and genetic exchange phenomena in biofilms for a better understanding of the interconnectedness and the role of biofilms in genetic exchange between donor and recipient cells.

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ASM-HC-6016

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*Asamiya Chutigalpa Aru Upanyash* : A collection of Assamese  
articles edited by Dr. Bhanita Nath and Published by B. D. Prakash,  
Panbazar, Guwahati : 1  
First Edition : May, 2022

Price : 325/-

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দিগন্ত দাস

সাম্প্ৰতিক অসমীয়া কথা সাহিত্যত পূববী ববমুদৈ (১৯৫০-২০১৯) এটি সুপ্ৰতিষ্ঠিত নাম। শান্তনুকুলনন্দন (২০০৫) উপন্যাসৰ বাবে ২০০৭ খৃঃত সাহিত্য অকাডেমী বঁটা লাভ কৰা ববমুদৈ ঔপন্যাসিক হিচাপে বেছি চৰ্চিত আৰু সমাদৃত যদিও এগৰাকী সফল গল্পকাৰ হিচাপেও অসমীয়া গল্প সাহিত্যত তেওঁৰ এখন সুকীয়া আসন আছে। ববমুদৈৰ প্ৰকাশিত গল্প সংকলনবোৰ হ'ল—শীতৰ কুঁৱলী (১৯৭৬), পূববী ববমুদৈৰ নিৰ্বাচিত গল্প, ১ম খণ্ড (২০০২), পূববী ববমুদৈৰ নিৰ্বাচিত গল্প, ২য় খণ্ড (২০০৮), পূববী ববমুদৈৰ নিৰ্বাচিত গল্প, ৩য় খণ্ড (২০১৫), হেৰুৱাজনক বিচাৰি আৰু অন্যান্য গল্প (২০১৪), অৱশেষত ববমুদৈ (২০১৬)। গল্প সংকলন কেইখনত সন্নিবিষ্ট গল্পবোৰৰ উপৰিও বিভিন্ন গল্প ককত-আলোচনীৰ পাততো সিঁচবতি হৈ আছে।

পূববী ববমুদৈৰ গল্পৰ জগতখন বহুমাত্ৰিক। সমাজৰ নিম্নবিস্তৰ জীৱন আৰু সংগ্ৰামৰ সূক্ষ্ম ৰূপায়ণেৰে তেওঁলোকৰ <sup>পোৱা</sup> <sup>নোপোৱা</sup> খোঁৱা, নোপোৱা, হেৰুৱা, দোমোজা আদিৰ মাজত তেওঁলোকক ভিতৰলৈ জুমি চোৱাৰ আন্তৰিক প্ৰয়াস ববমুদৈৰ গল্পৰ মাজত দেখিবলৈ পোৱা যায়। এইক্ষেত্ৰত ববমুদৈৰ 'শীতৰ কুঁৱলী' শীৰ্ষক গল্পটিৰ কথা উল্লেখ কৰিব পাৰি। গল্পটিত নিম্ন মধ্যবিস্তৰ জীৱনৰ দুখ-দুৰ্দশা আৰু তাৰ মাজেদি প্ৰকাশ পোৱা স্নেহ, দয়া, সমাজবোধ আদি মানৱীয় গুণবোৰ জিলিকি উঠিছে। পত্নী, তিনি সন্তান আৰু বৃদ্ধ মাকেৰে সৈতে শিক্ষক বজত হাজৰিকাৰ অভাৱ জৰ্জৰিত জোৰা টাপলি মৰা সংসাৰত সমস্যাৰ অন্ত নাই। অত্যন্ত প্ৰয়োজনীয়তা সেয়েহে তেওঁ নিজৰ বাবে গৰম কোট এটাৰ ব্যৱস্থা



# INDIA

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A **COMPARATIVE**  
**PERSPECTIVE**

EDITOR  
DR. ABUL FOYES MD MALIK

INDIA:  
& ITS DIASPORA:  
A COMPARATIVE PERSPECTIVE

# India and Its Diaspora A Comparative Perspective

PUBLISHED BY : SUN BEAM, Rupnagar, Guwahati-781032  
on behalf of  
DR ABUL FOYES MD MALIK, DEPARTMENT OF BENGALI  
DIGBOI MAHILA MAHAVIDYALAYA, DIGBOI

FIRST PUBLISHED : April, 2022

EDITED BY : DR ABUL FOYES MD MALIK  
DEPARTMENT OF BENGALI

COVER DESIGN : EDITOR

PRICE : 1200/- (RUPEES TWELVE HUNDRED ONLY)

PRINTED BY : SUN BEAM OFFSET  
SANKARDEV PATH, RUPNAGAR, GUWAHATI- 781032

ISBN : 978-93-93092-22-9

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## A Comparative Study of Jhumpa Lahiri's Diasporic Novels: The Namesake and Interpreter of Maladies

Chandrasmita Borgohain  
M.A. English, EFL University  
Shillong

### Introduction

Jhumpa Lahiri is well known as a second generation diasporic writer of Indian diaspora and literature. She had written vintage diasporic novels and stories where she visualizes the readers into the life of a migrant in a different nation experiencing the utmost sufferings of cultural differences. Nilanjana Sudeshna also known as "Jhumpa" Lahiri (Bengali; born on July 11, 1967) is a well-known and a famous American author and is very well known among all for her writing. Jhumpa Lahiri is one of the most significant writers of the Indian diaspora in the present time, and she is expert in her writing skills. Lahiri initiate the task of short story collection among which the first is Interpreter of Maladies (1999) which won the 2000 Pulitzer Prize for Fiction, along with her first novel, The Namesake (2003), which was reformed directly into a popular film of the same name and is famous among all.

India has the largest diaspora population in the world with 18 million people from the country living outside their homeland. Today Indian Diaspora has emerged to be distinctive transnational communities, bridging the "local" and "global" together. The improvements in communication, as well as transportation technology, have facilitated further development in these networks among the Indian Diaspora in general and regional/ linguistic/ caste Diasporas especially. It is obvious that, though distance separates the Indians, they remain linked to one another through ties of real or imaginary kinship, shared resources, as well as cultural exchanges. They preserve and recreate their identity in new homes across the globe. Diaspora today has become a blanket term absorbing various experiences of alienation, political compulsions, ambitions and material pursuits. One of the important themes of the non-resident Indian writing in English is an immigrant experience.

### Lahiri's Novels' common themes

The two main themes of the novels of Jhumpa Lahiri's are the emotional anguish and nostalgia for the homeland. As a child of immigrant parents, Lahiri has undergone the experience of living two lives; one in India and the other in America. The stories address the sensitive dilemmas in the lives of Indians or Indian immigrants with issues such as marital difficulties, displacement, cultural disposition and psychological trauma.

In *The Namesake* she describes the lives of two generations of an immigrant Bengali family, the Gangulis in America. In the literature of Diaspora, identities of individuals are corresponding to the

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Bandana Borah

**Edition**

2021 (Vikram Samvat: 2077)

© - To the Chief Editor

ISBN - 978-93-90919-01-7

**Publishers**

Vagambhrini-Sanskrit-Sahitya-Samiti

Email- rajjmg@gmail.com,

sagarikabhattacharjee700@gmail.com

☎ +91-8638082147, 7086879817, 6913208297 & 7002274630

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# An Analysis of the Concept of Modern Sanskrit Gadyakāvya with Sepcial Reference to Works of Abhiraja Rajendra Mishra

✍ **Mridusmita Bharadwaj**

Assistant Professor, Sanskrit Department, Darrang College, Tezpur

In Sanskrit literature, a large number of literary forms are accepted by the Sanskrit rhetoricians. All the literary forms come under the two broad division viz. *śravyakāvya* and *drśyakāvya*.<sup>28</sup> These two divisions are formulated on the basis of means to connect with readers or spectators. In the field of *śravakāvya*s, *gadyakāvya* acquires a crucial position along with *padyakāvya* and *campūkāvya*. On the basis of writing skill, *gadyakāvya*s are divided into four categories viz. *muktaka*, *vṛttagandhi*, *utkalikāprāya* and *cūrṇaka*. Again depending on the theme of *gadyakāvya*s, there are two broad division viz. *kathā* and *ākhyāyikā*.

The *Agnipurāṇa* mentions five kinds of *gadyakāvya* viz. *ākhyāyika*, *kathā*, *khaṇḍakathā*, *parikathā*, and *kathānikā*.<sup>29</sup> Dandin defines *gadyakāvya* as a kind of literary form void of metrical lines and it is of two kinds viz. *kathā* and *ākhyāyikā*.<sup>30</sup> Again Ānandavardhana has mentioned five varieties of *gadyakāvya* in the *vṛtti* of the *Dhvanyāloka*. The five varieties are – *kathā*, *ākhyāyikā*, *parikathā*, *khaṇḍakathā* and *sakalakathā*, cf.-*paryāyabandhaḥparikathā khaṇḍakathā sakalakathe*

*sargabandho 'bhineyārthamākhyāyikākatheityevamādayaḥ /*<sup>31</sup>

The Modern Sanskrit rhetorician Abhiraja Rajendra Mishra divides *gadyakāvya*s into four categories, viz.-*muktaka*,

<sup>28</sup> drśyaśravyatvabhedena punaḥ kāvyam dvidhā matam / *Sāhityadarpaṇa*, p.319

<sup>29</sup> *ākhyāyikā kathā khaṇḍakathā parikathā tathā/ kathāniketi manyante gadyakāvyaṃ ca pañcadhā// Agnipurāṇa*, p.687

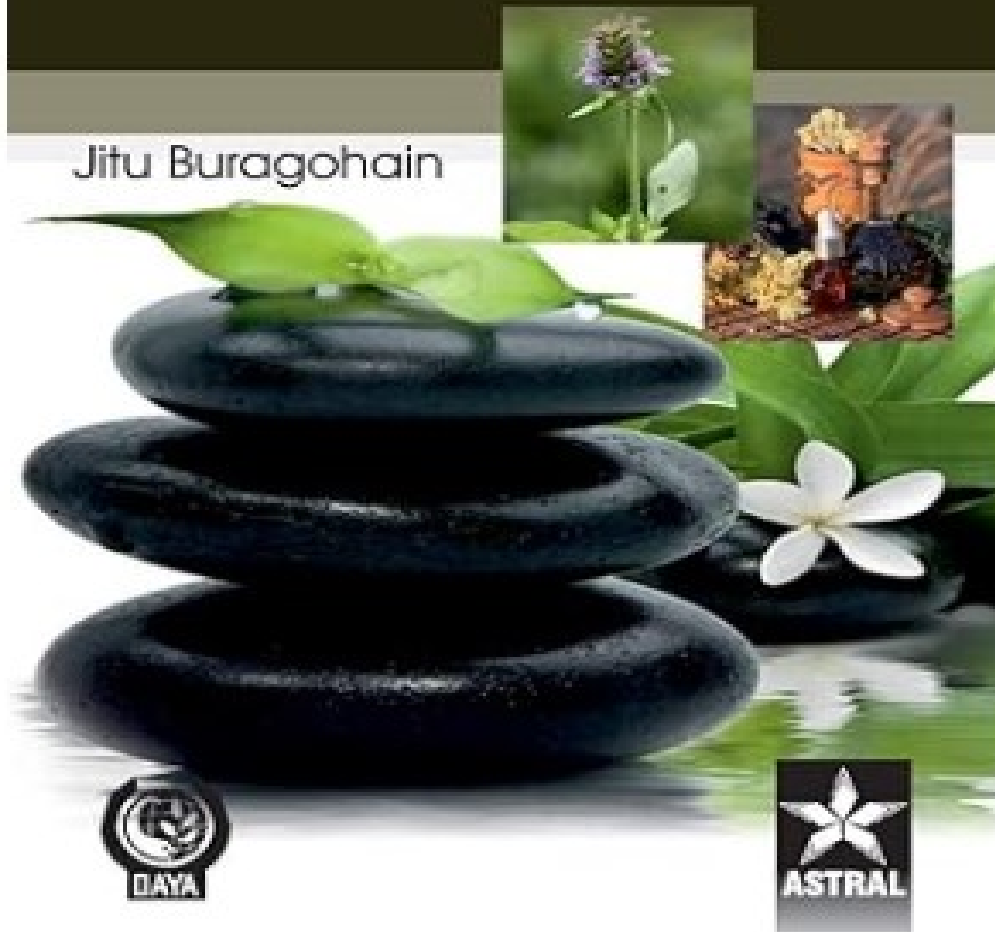
<sup>30</sup> apādaḥ padasaṃtāno gadyamākhyāyikā kathā/ iti tasya prabhedau dvau tayorākhyāyikā kila// *Kāvyaḍarśa*, I.23

<sup>31</sup> *Dhvanyāloka*, III.7

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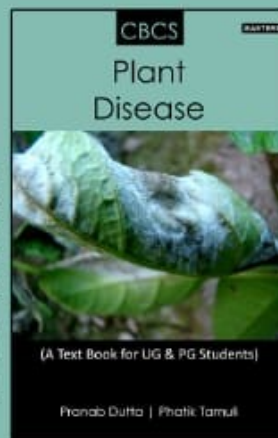


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**Dr. Pranab Dutta** is presently Associate Professor in Plant Pathology in the CPGSAS, Central Agricultural University (Imphal), Umiam, Meghalaya. He completed MSc and PhD in Plant Pathology and Post Doctorate training at FERA, York, United Kingdom. He has been actively involved in teaching, research and extension for the last two decades. He has published 100 research papers, 45 research abstracts, 13 proceedings paper, 81 popular articles. He is the recipient of fellow award of Society of Biocontrol Advancement, ICPP-2018 Bursary award (The American Phytopathological Society, USA), DBT Overseas Associates etc. Developed 10 bioformulations, filled five patents and commercialized four bioformulation products. Pursued 16 externally funded project funded by DBT, DST, Osceola County, Florida, USA, PCIL, AYUSH, RKVY, BRNS, ICAR-NCIPM, Bayer Crop Sci etc. He has supervised 3 PhD and 11 MSc students as Major adviser. His research area includes nanotechnology, biological control, ecotoxicology and plant defence.



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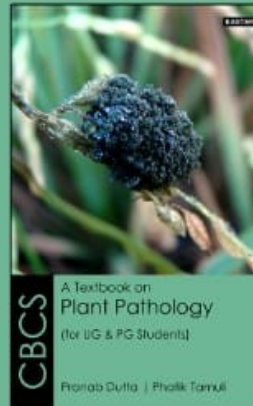
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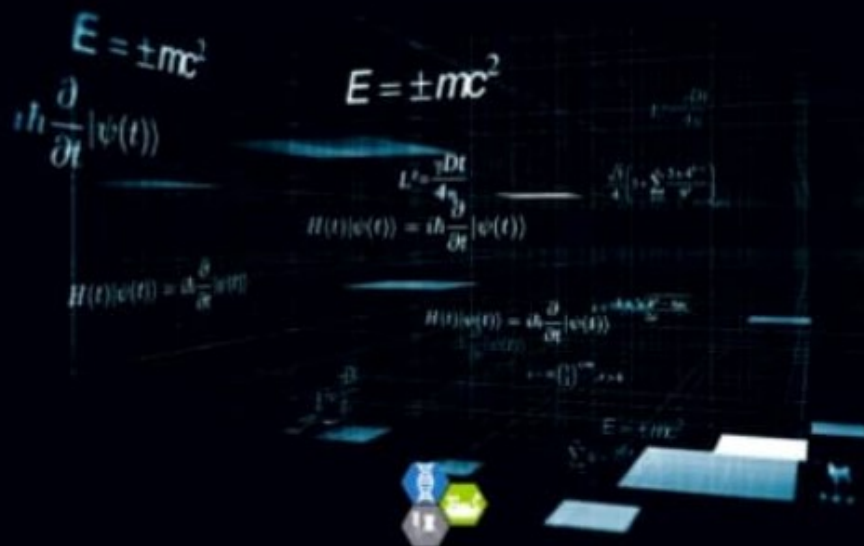
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# Chapter - 2

## Position Dependent and Position Independent Reneging- Exposition of Idea

Girin Saikia and Amit Choudhury

### Abstract

Customer's impatience in queuing model is very common and unavoidable phenomenon in business or any other related field. Reneging, the phenomenon of customers joining a queuing system and leaving it without service completion due to intolerable delay, is one of the impatience which influences particular organization or company revenue loss, is considered in this chapter. Depending on the position of the customers, reneging can be categories into two types and both position dependent reneging (PDR) and position independent reneging (PIR) are discuss throughout this chapter.

**Keywords:** balking, impatience, queuing model, reneging

### 1. Introduction

Queuing theory is the mathematical study of waiting lines or queues. It is the theory of congestion and is a branch of Operations Research, which explores the relationships between demand on a service system and the delays suffered by the users of that system. The theory enables mathematical analysis of several related process, including arrival at the queue, waiting in the queue (essentially a storage process), and being served often in front of the queue. This theory permits the derivation and calculation of several performance measures including the average waiting time in the queue or the system, the expected number waiting in queue or service, and the probability of encountering the system in certain states, such as empty, full, having an available server or having to wait a certain time to be served. This theory is considered as a branch of operations research because the results are often used when making business decisions about the resources needed to provide service.

Queuing theory offers key insights that initially may be hidden. A formal queuing model allows one to incorporate randomness in key

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₹ 753, US \$14

Published by  
AkiNik Publications,  
#169, C-11, Sector - 3, Rohini,  
Delhi-110085, India  
Toll Free (India): 18001234070



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