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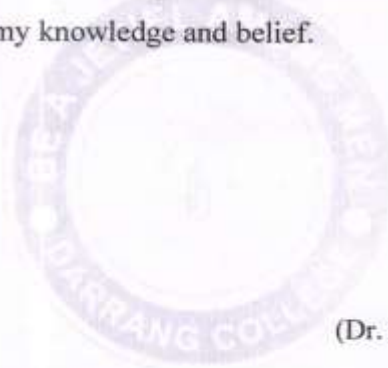
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As Per CBCS Syllabus

Text Book of **ETHNOBOTANY**

Akhil Baruah
Ashish Kar



KALYANI

For B.Sc. Botany (Regular) 8th Semester Students of Universities of Assam and other Indian Universities

About the Authors

Dr. Bodo Baruah, 1955-1957, B.Sc. (Hons), 1957, M.Sc. (Hons) in Botany, 1959-1960, 1960-1961, 1961-1962, 1962-1963, 1963-1964, 1964-1965, 1965-1966, 1966-1967, 1967-1968, 1968-1969, 1969-1970, 1970-1971, 1971-1972, 1972-1973, 1973-1974, 1974-1975, 1975-1976, 1976-1977, 1977-1978, 1978-1979, 1979-1980, 1980-1981, 1981-1982, 1982-1983, 1983-1984, 1984-1985, 1985-1986, 1986-1987, 1987-1988, 1988-1989, 1989-1990, 1990-1991, 1991-1992, 1992-1993, 1993-1994, 1994-1995, 1995-1996, 1996-1997, 1997-1998, 1998-1999, 1999-2000, 2000-2001, 2001-2002, 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, 2018-2019, 2019-2020, 2020-2021, 2021-2022, 2022-2023, 2023-2024, 2024-2025.

For his outstanding research contributions, he has been awarded 'D' in Botany, Assam State University, Assam, 1987 in Botany.

Professor, in recognition of his all round excellence as an educator as well as for his excellent academic and research qualities, Dr. Bodo Baruah has been awarded the 'D' in Botany, Assam State University, 2017 at the jubilee occasion of Teachers' Day.

Dr. Baruah has also been awarded by the 'Best Teacher Award, 2007' by the DDC of Dima Hasar College, in recognition of his all round excellence in Academic, Research and other activities. The DDC has also included his name by the 5th time in the 'Platinum Jubilee' year (1985-2015) anniversary of the present nation.



Dr. Baruah is presently serving as Associate Professor & Faculty (HOD) in the P.G. Department of Botany, Dima Hasar College, Dima Hasar, Assam. He is so far credited with 160 research/ popularisation chapters, 42 books, 28 scientific articles - 8 edited, 20 seminar presented papers, delivered 11 talks at national/international level, 200 research articles/articles, credited with 1 patent, guided 136 P.H.D. student and many P.G.D. students for their M. Sc. Dissertations, delivered 4 new seminar, short term, 2 new types of seminars, and many seminar/workshops. 2 talks given nationally to inform scientist etc. of Phytochemical, Terpenoid & pharmaceutical values from Northwest India.

One of his books entitled 'Tiger - the Indian Big Cat' published (2011) from Germany has been recently published (2021) in 3 European Language Editions. These are 'Tiger' - in Russian etc. as book (Hobbes) in French, 'Tiger' - 2nd Indian edition, published in German, 'Tiger' - in Hindi etc. has been written in Assam, 'Tiger' - in Assamese, 'Tiger' - in Hindi and 'Tiger' - in English etc. in Assam, India in Portuguese.

He is selected as a Specialist for the Herbs, Spices & Medicinal Plants and his name is included in the International Directory of Specialists in the Herbs, Spices & Medicinal Plants published by University of Massachusetts, USA. He is the Life/Fellow member of 11 National & International Professional Bodies and is recognized as Reviewer/Fellow of 10 Indian and Foreign journals and Fellow member of two journals.

Dr. Bishal Bar is presently serving as Fellow Scientist in The Energy and Resources Institute (TERI), New Delhi, Government of India, Gurgaon. He is so far credited with 28 research papers, book chapters, 1 book, 3 scientific articles, 1 patent and delivered 2 talks at national level.

Dr. Bar is awarded of Junior Research Fellowship from (JRF) Assam Research Fellowship from 2008 and 2010, Assam State University, Assam.

He serves as the President/guide (Diploma) Shriharipur Shiksha, New Delhi for dissemination of scientific, technological and other national goods available under Shriharipur Shiksha scheme. Member of a committee for State Council (JRF) Institute as a research guide, sponsored by TERI, Gurgaon.

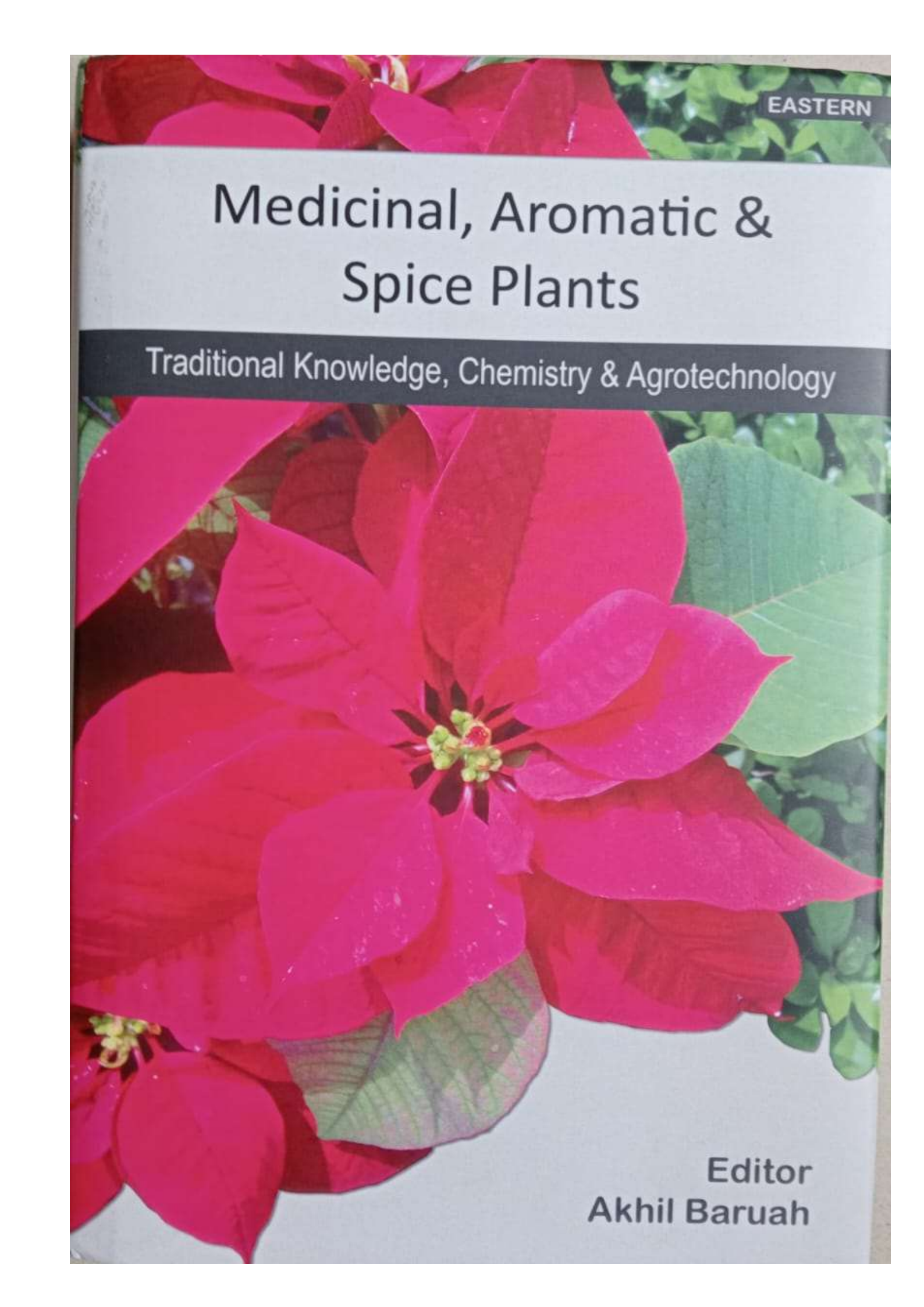
He is the Fellow Life member of 8 national/international professional bodies and recognized as Reviewer/Fellow of 10 Indian and Foreign journals and Fellow member of two journals.

Dr. Bar presented 10 research papers in National/International seminar/workshop/Conference/Symposium. He also handled several Seminars and 8 Workshops as Principal Investigator/Co-Principal Investigator by National and International funding agencies.



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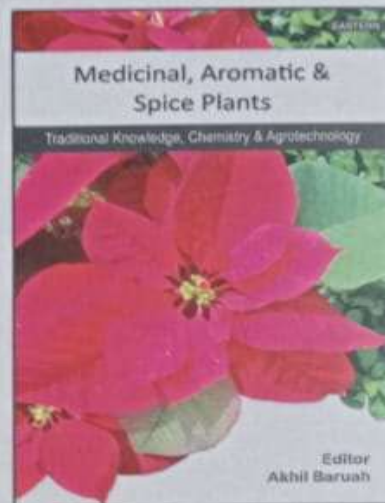
Traditional Knowledge, Chemistry & Agrotechnology

Editor
Akhil Baruah

The Book

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This book will be immensely useful to the Research & Academic institutions, various Pharmaceutical industries, Agriculture and allied fields/subjects, as well as to exporters, processors, planters and to all those who are interested in Medicinal, Aromatic / Spice & Natural Essential Oils. Thus, it may be helpful to the health professionals, scientists and scholars working in the field of pharmacology and therapeutics to develop evidence-based alternative medicine to cure different kinds of human ailments.



Dr. Akhil Baruah, FES, FIAT, FLS (London), Awardee of National Scholarship (1989-1990), CSIR-Senior Research Fellowship (1996-1999) and CSIR-Extended Senior Research Fellowship (1999-2000). For his outstanding research contribution, he has been awarded 9th Dr. B. M. 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 him the OIL SHIKSHYA RATNA PURASKAR, 2017.

Dr. Baruah is presently serving as Associate Professor & Head in the P.G. Department of Botany, Darrang College, Tezpur (under Gauhati University). He is so far credited with 154 research papers/book chapters, 21 Books, 34 seminar presented papers, delivered 10 talks as resource person, more than 225 popular science articles, credited with 1 patent, guided 1 M. Phil. student, 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. 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.

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CYTOLOGY, GENETICS AND EVOLUTION

Manideep Raj



KALYANI

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অৰিহণা : ৩৮০.০০ টকা

মুদ্ৰণ : ভৱানী অফ্‌ছেট এণ্ড ইমেইজিং চিষ্টেমছ প্ৰাঃ লিঃ
৭ লাচিত লেন, ৰাজগড় ৰোড, গুৱাহাটী ৭৮১০০৭

চেতনাত প্ৰকাশিত অম্বিকাগিৰী ৰায়চৌধুৰীৰ চিন্তা-চৈতন্য

ড° গকুল কুমাৰ দাস

অসমৰ সামাজিক আৰু ৰাজনৈতিক ইতিহাসৰ এক প্ৰাচীন পৰম্পৰা আছে। এই পৰম্পৰাই সময়ৰ অগ্ৰগতিত নিত্য নতুন ৰূপ লাভ কৰি আহিছে। ছশ-বছৰীয়া আহোম ৰাজত্বৰ অন্তত আৰু অত্যাচাৰী মানৰ উপদ্ৰৱৰ শেষত অসমত বৃটিছ শাসকগোষ্ঠীৰ প্ৰবেশ ঘটিছিল। বৃটিছৰ প্ৰবেশৰ ফলস্বৰূপে অসমৰ সমাজ জীৱনত ব্যাপক পৰিৱৰ্তন সাধিত হ'ল। বৃটিছ শাসকগোষ্ঠীৰ প্ৰায় সমসাময়িকভাৱে অসমলৈ আগমন ঘটিছিল আমেৰিকান বেপ্টিষ্ট মিছনেৰীসকলৰ। আমেৰিকান বেপ্টিষ্ট মিছনেৰীসকলৰ অসম আগমনৰ লগে লগে অসমীয়া সাহিত্যতো আধুনিকতাৰ বাট মুকলি হ'ল। ঊনবিংশ শতিকাত অসমত সংঘটিত অনেক ঘটনাৰ ভিতৰত খ্ৰীষ্টান মিছনেৰীসকলৰ উদ্যোগত 'অৰুনোদই' পত্ৰিকাৰ প্ৰকাশ অসমীয়া সামাজিক সাংস্কৃতিক জীৱনৰ এক উল্লেখযোগ্য ঘটনা আৰু এই 'অৰুনোদই'ৰ জৰিয়তেই অসমীয়া আলোচনীৰ ভেটি প্ৰতিষ্ঠিত হ'ল। সংগ্ৰাম আৰু বিভিন্ন ঘাত-প্ৰতিঘাতৰ মাজেৰে অসমীয়া আলোচনীয়ে ডেৰশ বছৰৰো অধিককালৰ পথ-পৰিক্ৰমা অতিক্ৰম কৰিছে আৰু অসমীয়া আলোচনী সাহিত্যৰ ইতিহাসক পল্লৱিত, সমৃদ্ধ আৰু ব্যাপ্ত কৰি তুলিছে।

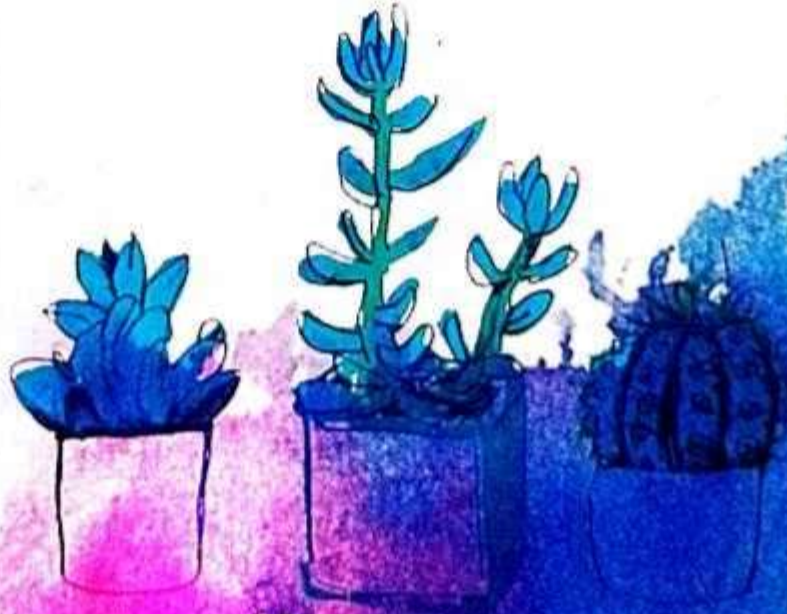
প্ৰাক্-স্বাধীনতাকালত অসমৰ সামাজিক আৰু ৰাজনৈতিক ইতিহাসক প্ৰভাৱিত কৰা অসমীয়া আলোচনীসমূহৰ ভিতৰত 'চেতনা' আছিল অন্যতম। ১৯১৯ চনত প্ৰকাশ আৰম্ভ হোৱা 'চেতনা' যুটীয়াভাৱে সম্পাদনা কৰিছিল অম্বিকাগিৰী ৰায়চৌধুৰী আৰু চন্দ্ৰনাথ শৰ্মাই। 'চেতনা'

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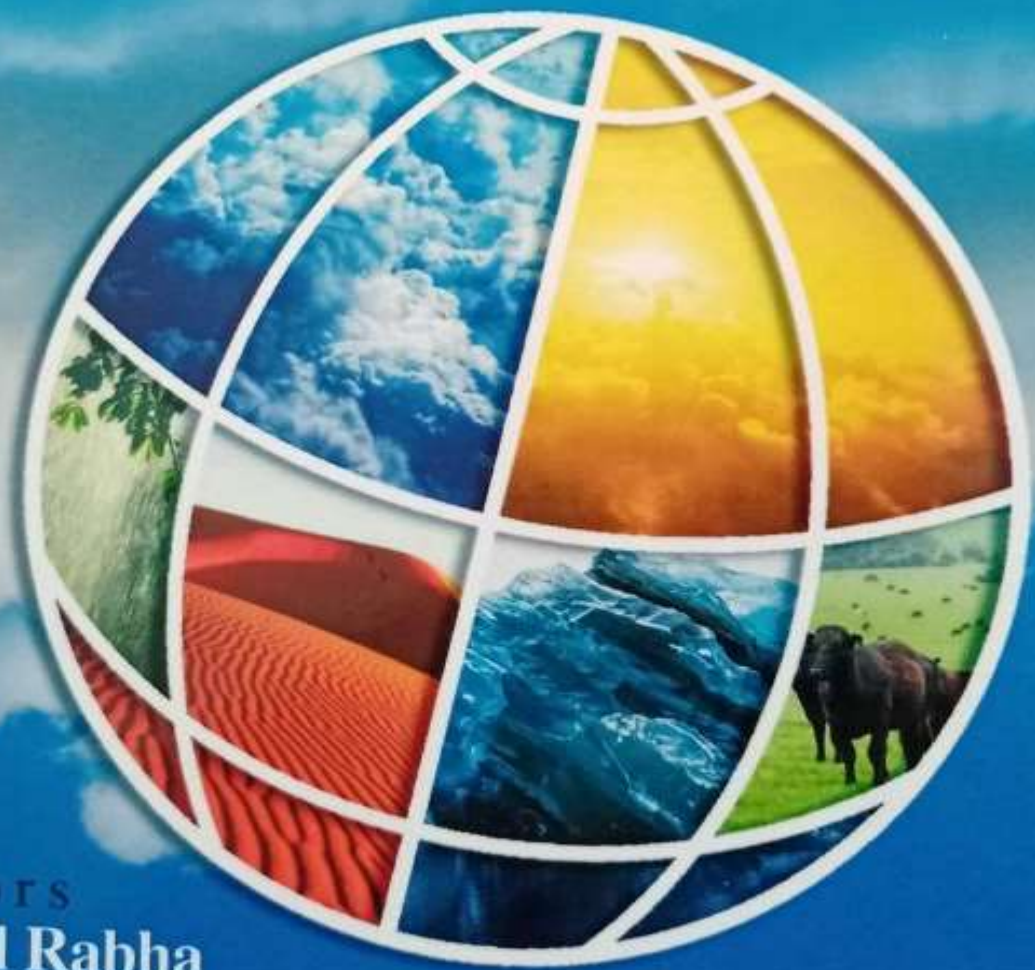
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ভবেন্দ্ৰনাথ শইকীয়াৰ জীৱন পৰিচিতি :

অসমীয়া সাহিত্যিক যুগজয়ী মাত্ৰা প্ৰদান কৰা সাহিত্যিকসকলৰ ভিতৰত ভবেন্দ্ৰনাথ শইকীয়া আছিল শীৰ্ষস্থানীয়। ভবেন্দ্ৰনাথ শইকীয়াৰ জন্ম হৈছিল ১৯৩২ চনৰ ২০ ফেব্ৰুৱাৰী তাৰিখে। তেওঁৰ জন্মস্থান আছিল নগাঁও জিলাৰ ফৌজদাৰীপট্টি। তেওঁৰ পিতৃৰ নাম আছিল বিদুৰ চন্দ্ৰ শইকীয়া আৰু মাতৃ আছিল চম্পাবালা শইকীয়া।

বিদুৰ চন্দ্ৰ শইকীয়াৰ শিক্ষাগত অৰ্হতা আছিল সপ্তম শ্ৰেণী উত্তীৰ্ণ। তেওঁ পোনতে চাপৰমুখ ৰে'ল ষ্টেচনত থকা টেলিগ্ৰাফৰ খুঁটাবিলাকত ৰং দিয়া কাম কৰিছিল; পিছলৈ তেওঁ নগাঁৱৰে বৰবজাৰৰ নিকটৱৰ্তী নুৰুদ্দিন মোক্তাব স্কুলত শিক্ষকতা বৃত্তিত যোগ দিছিল। বিদুৰ চন্দ্ৰ শইকীয়া এগৰাকী ভাল অভিনেতাও আছিল। তেওঁ ভাওনাত ধেমেলীয়া অভিনয় কৰিছিল। এবাৰ গুণাভিৰাম বৰুৱাৰ আগত ভাওনাৰ চং দি তেওঁ বৰুৱাক সন্তুষ্ট কৰিছিল আৰু বৰুৱায়ো আনন্দতে বিদুৰ চন্দ্ৰ শইকীয়াক ছায়াবাজীৰ বাকচ এটা উপহাৰস্বৰূপে প্ৰদান কৰিছিল। এটা সময়ত যক্ষ্মাৰোগত আক্ৰান্ত হোৱা হেতুকে বিদুৰ চন্দ্ৰ শইকীয়াই নুৰুদ্দিন মোক্তাব স্কুলৰ চাকৰিটো ত্যাগ কৰিবলগীয়া হৈছিল। ফলস্বৰূপে গোটেই পৰিয়ালটো চৰম দাৰিদ্ৰ্যৰ মুখামুখি হ'বলগীয়া হৈছিল। এইখিনি সময়ত তেওঁ শাক-পাচলি বিক্ৰী কৰিও পৰিয়ালটো পোহপাল দিছিল। পিছলৈ দাৰিদ্ৰ্যৰ বাবেই তেওঁ ঘৰ ত্যাগ কৰি জগন্নাথ মন্দিৰ পায়গৈ। তাতো কিছু

CLIMATE CHANGE AND SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES



Editors
Mridul Rabha
Pabitra Barman

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Issues and challenges in Economics and Commerce:

A perspective



Editor

Ratul Mahanta & Amrit Pal Singh

Issues and Challenges in Economics and Commerce : A Perspective

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Effectiveness of different Sales Promotion Measures to different demographics variables

Prabhat Kumar Singh

Abstract

Marketing is the process of interaction between the buyers and the sellers. It is the medium of linkage which makes the buyers and seller's to accomplish their respective objectives and desires- the sellers trying to maximize their sales and profit; and the buyers trying to satisfy the need and desires upto the maximum level. In this particular spectrum elaboration, we shall look at the scheme of things from the prism of the sellers' perspective. The sellers work to trigger a spending spree or consumerism by influencing them to clamour for their products. The influences are means of giving incisive impact on the perception of the consumers. The repertoire of tools and persuasive propaganda. The slew of promotional tools and persuasion techniques are referred to as Sales Promotion Measures.

Of course Sales Promotion Measures should be clearly distinguished from the fulcrum which more

... is referred to as ...
... of wide spectrum ...
... advertising display ...
... of SPM's ...
... which have prof ...
... perception or co ...
... measures try to ...
... buyers in different ...
... to go for the spec ...
... prism; inc ...
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... personal selling and ...
... consumer to purchase ...
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... channel ...
... Promotion ...
... and (ii) Retailers ...
... directly announces ...
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... by retailer to increase ...
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Gojen Dalmari

Factors Determining the Accessibility of Primary Health Care Facility : A Study in Jorhat District

Sampurna Khound

Abstract : The present study intended to examine the factors determining the accessibility of primary health care facility. Primary health care refers to essential health care that based on scientifically sound and socially acceptable methods and technology which make universal health care universally accessible to individuals and families in a community. In Assam health service is provide by both government and private sectors. In rural areas health care infrastructure has been developed to provide primary health care service through a network of integrated health and family welfare delivery system. But there are many factors which have impact on utilization of primary health service, so this study tries to find out those factors. A binomial logistic model has been used to find out influencing factors.

Introduction :

Health is one of the vital indicators of quality of human life. The most widely acceptable definition of health is that given by WHO (1984), "Health is a state of complete physical, mental and social well being, not simply the absence of disease. Health and human resource development are integral components of the overall socio-economic development of a nation. Keeping this in view, health has been declared a fundamental right in many countries. National governments all over the world are striving to expand and improve their health care services. Health care for the prevention and promotion of health is one of the basic human rights, as declared in the Universal Declaration of Human Rights (Article 25). This implies that state has a responsibility for the health of its people and central to this is the choice of the methods for providing health service. It is fully realized that the best way to provide health care to the vast majority of underserved rural people and urban poor is to develop effective primary health care services supported by appropriate referral system.

Expanding access to primary health care is a critical priority of the government of India. Efforts to that have addressed numerous issues and much progress can be reported. The health care system in India, at present has a three tier structure to provide health care service to all people. The first tier known as primary tier, has been developed to provide health care service to the vast majority of rural people. The primary tier comprises three types of health care

PhD. Scholar, Omeo Kumar Das Institute of Social Change and Development, Guwahati

CHAPTER 5

Acidic and Basic Functionalized Ionic Liquid Systems for Advanced Synthesis of Five and Six Membered Nitrogenates Heterocycles

Pinky Gogoi¹, Susmita Saikia¹, Arup Kumar Dutta² and Ruli Borah^{*1}

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² Department of Chemistry, Pandit Deen Dayal Upadhyaya Adarsha Mahavidyalaya, Behali, Jinjia-784184, Assam, India

Abstract: This book chapter describes a brief introduction on acidic and basic functional group tethered ionic liquid systems with various ion-pairs and their utilization as recyclable catalyst/medium in designing sustainable advanced synthetic methods of selected five and six membered nitrogenated heterocycles *via* one-pot approach.

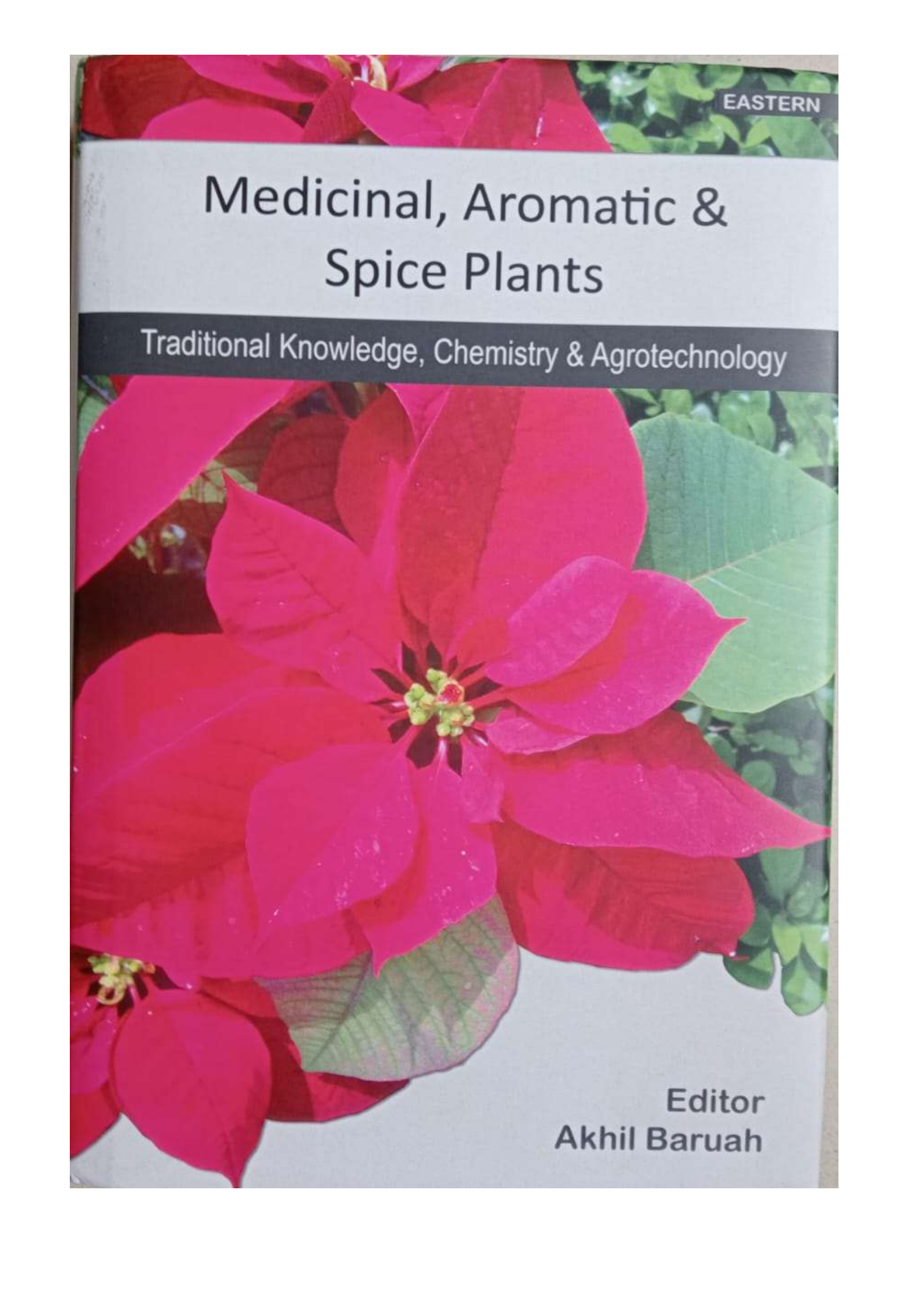
Keywords: Acidic ionic liquids, Basic ionic liquids, Multicomponent, N-Heterocycles, One-pot reaction, Reusable catalysts, Sustainable method.

INTRODUCTION ON IONIC LIQUID SYSTEMS

The development of target oriented functionalized ionic liquids (FILs) with unique physicochemical properties has received major recognition in different research fields with diversified applications in catalysis [1], such as reaction medium for organic reactions [2], biocatalysis [3], biomass treatment and processing [4], electrochemistry [5], analytical chemistry [6, 7], coordination chemistry [8], polymer chemistry [9], fluorine chemistry [10], nanotechnology [11], material science [12] and other miscellaneous uses [13].

The various types of ionic liquids (ILs) are represented in Fig. (1) which can be extended to cover new families and generations of ionic liquids with target oriented properties.

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EASTERN

Medicinal, Aromatic & Spice Plants

Traditional Knowledge, Chemistry & Agrotechnology

Editor
Akhil Baruah

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Ethnobotanical Knowledge and Practices of the family Fabaceae

*Akhil Baruah
Sanjay Krishna Borah
Bikash Jyoti Sharma*

Introduction

The Fabaceae or Leguminosae, commonly known as the legume, pea, or bean family, is a large and economically important family of flowering plants. It includes trees, shrubs, and perennial or annual herbaceous plants as well as climbers, which are easily recognized by their legume/pod type of fruit, compound and stipulated leaves. The members of this family are commonly known as leguminous plants. The family is widely distributed, and is the third largest land plant family in terms of number of species, behind only the Orchidaceae and Asteraceae, with about 751 genera and some 19,000 known species. The five largest of the genera are *Astragalus* (over 3,000 species), *Acacia* (over 1000 species), *Indigofera* (around 700 species), *Crotalaria* (around 700 species) and *Mimosa* (around 500 species), which constitute about a quarter of all legume species.

Fabaceae range in habit from giant trees (like *Koompassia excelsa*) to small annual herbs, with the majority being herbaceous perennials or even vines or lianas. The Fabaceae have an essentially worldwide distribution, being found everywhere except Antarctica and the high arctic. The trees are often found in tropical regions, while the herbaceous plants and shrubs are predominant outside the tropics.

According to the Article 18 of 'International Code of Botanical Nomenclature'

4

Essential Oils of the genus *Cinnamomum* Schaeffer used as Spice and Condiments in Northeast India

Akhil Baruah

Introduction

The genus *Cinnamomum* Schaeffer (Family: Lauraceae) has about 250 species (Mabberley 1994), distributed throughout the tropics and sub-tropics of Asia, Australia and Central & South America up-to an altitude of 2400m. Most of the members of the genus are highly polymorphic and are characterized by great variability of morphological and chemical characters, and hence, it is considered as one of the most critical genus among the higher plant groups (Kostermans 1983).

In India, the genus *Cinnamomum* is represented by about 40 species (Hooker 1885, Kanjilal *et. al.* 1940, Kostermans 1983, Manilal and Shylaja 1986, Mohanan and Henry 1991, Baruah and Nath 2001, 2005, 2007) and distributed mainly in Western Ghats and adjoining areas, Andaman Islands and Eastern Himalayas. In Northeast India, the genus is represented by 14 species (Kanjilal *et.al.* 1940, Deb 1981, Nath and Barua 1994, Baruah and Nath 2001, 2005, 2007), while Kostermans (1983) described 13 species from South India.

Most of the *Cinnamomum* species are valued for their aromatic oils which are extensively used as **spices** (viz. cinnamon and tezpat) and **condiments** (viz. camphor), medicinal and cosmetics. In this present chapter, the essential oils components of all the *Cinnamomum* resources used as spices and condiments are reviewed for easy reference.

Agar – the Liquid Gold

Akhil Baruah

Introduction

The resinous patches of fragrant wood of the plant *Aquilaria malaccensis* Lamk. (Fig. 8.1) is known as 'Agar' or 'Agarwood' (Fig. 8.2), is used as incense, perfumes, medicines, aromatherapy and religious ceremonies in Algeria, Bahrain, Egypt, Iraq, Jordan, Lebanon, Libya, Morocco, Oman, Qatar, Sudan, Syria, Yemen, Northeast India, etc. Oil of the plant is described as stimulant, cardiac tonic, carminatives and is used in cosmetic industries. The oil is being sold at Rs. 10,000/- to 15,000/- per 10 g and thus termed as 'Liquid Gold' in the trade. The oil is considered to be a pathological product produced by fungal invasion of the host.



Fig. 8.1 An Agar-wood Tree in its Natural Habitat

Folk-medicinal Knowledge and Practices of the family Asteraceae

Akhil Baruah

Kuntala Sarma Bordoloi

Bhagyashree Goswami

Introduction

Asteraceae commonly referred to as the aster, daisy, composite, or sunflower family is a very large and widespread family of Angiosperms. The family has about 32,900 species, 1,900 genera and 13 sub-families. Many members have composite flowers in the form of flower heads (capitulum) surrounded by involucre bracts. When viewed from a distance, each capitulum may have the appearance of being a single flower. The name Asteraceae comes from the type genus *Aster* (in Greek means star), and refers to the star-like form of the inflorescence. Compositae is the older but still valid name of Asteraceae. It refers to the fact that the family is one of the few angiosperm families to have composite flowers.

Most members of Asteraceae are herbaceous, but a significant number are also shrubs, vines, or trees. The family has a worldwide distribution, from the polar region to the tropics, colonizing a wide variety of habitats. It is most common in the arid and semi-arid regions of sub-tropical and lower temperate latitudes. The Asteraceae may represent as much as 10% of flora in many regions of the world. Asteraceae species have a cosmopolitan distribution, and are found everywhere except Antarctica and the extreme Arctic.

Very little is known about the ethnomedicinal values of individual families of Angiosperms. Tripathi and Goel (2001) reported the ethnobotanical diversity of

Traditional Knowledge and Practices of Zingiberaceae

*Akhil Baruah
Bhagyashree Goswami
Kuntala Sarma Bordoloi*

Introduction

Zingiberaceae also known as ginger family, is a monocotyledonous family with about 1600 species and 50 genera of aromatic perennial herbs with creeping horizontal or tuberous rhizomes, distributed throughout tropical countries of the world. Members of the family are small to large herbaceous plants with distichous leaves with basal sheaths that overlap to form a pseudo-stem.

Very little is known about the ethnomedicinal values of individual families of Angiosperms. Punjani (2004) reported ethnomedicinal uses of Vitaceae among the tribals of North Gujarat. Prance (2005) reported the ethnobotanical uses of the family Chrysobalanceae. D'Cruz (2007) reported the ethnobotanical uses of leguminous plants (Fabacea) of Dediapada forests in the south of Gujarat. Devi and Singh (2008) reported the ethnobotany of Verbenaceae from Manipur. Khomdram *et.al.* (2011) reported the ethnobotanical uses of the family Lamiaceae from Manipur. Rao *et.al.* (2011a) reported the ethnomedicinal uses of the plants belonging to the family Apocynaceae from North-Coastal Andhra Pradesh. However, Rao *et.al.* (2012) reported the ethnomedicinal values of plants of the family Euphorbiaceae used by primitive tribal groups of Visakhapatnam district, Andhra Pradesh. Further, Rao and Reddi (2013) reported the ethnomedicinal uses of plants belonging to the family Asteraceae among the primitive tribal groups of

The Book

The book 'Medicinal, Aromatic and Spice Plants: Traditional Knowledge, Chemistry and Agrotechnology' includes 16 chapters, covering the aspects like Ethnobotanical knowledge & therapeutic applications of Herbal plants, Chemistry of Medicinal, Aromatic & Spice plants, Biological activity & Pharmaceutical values of active components/herbal plants, Agro-technology and Bio-prospecting of Medicinal, Aromatic & Spice plants, etc. contributed by eminent Academicians, Scientists & Scholars of various Academic/Scientific institutions of India.

This book will be immensely useful to the Research & Academic institutions, various Pharmaceutical industries, Agriculture and allied fields/subjects, as well as to exporters, processors, planters and to all those who are interested in Medicinal, Aromatic / Spice & Natural Essential Oils. Thus, it may be helpful to the health professionals, scientists and scholars working in the field of pharmacology and therapeutics to develop evidence-based alternative medicine to cure different kinds of human ailments.



Dr. Akhil Baruah, FES, FIAT, FLS (London), Awardee of National Scholarship (1989-1990), CSIR-Senior Research Fellowship (1996-1999) and CSIR-Extended Senior Research Fellowship (1999-2000). For his outstanding research contribution, he has been awarded 9th Dr. B. M. 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 him the OIL SHIKSHYA RATNA PURASKAR, 2017.

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Reflections on Vedic Wisdom



Editors

• Ratul Bujar Baruah • Kamal Lochan Atreya • Pranabjyoti Deka

Reflections on Vedic Wisdom, a collection of reviewed research articles on broader aspects of Vedic literature.

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The Vedic literature as a source of Indian literary masterpiece *Śrīkaṇṭhacarita*, with an eye on the innovations and deviations

Dhrubajit Sarma

Maṅkhaka was one of the foremost poets of Kashmir, flourished after Kṣemendra. He wrote the *Śrīkaṇṭhacarita*, (SKC) a voluminous court-epic, consisting of twenty five cantos. Maṅkhaka was a protege to king Jayasimha, son of Sussala. Jayasimha, ruled from A.D. 1127-1159. The main theme of the SKC has been taken from the legend of burning of Tripuras by Lord Śiva. This is a very famous legend of India and this Tripura episode finds important place in Sanskrit literature. From the time immemorial, seers, poets as well as dramatists have been fascinated by the story of *tripuradahana* and often draw upon it. This story is found in its under-developed form in the Vedic Saṁhitās like the *Kāthaka* (XXVI. 10) and the *Taittirīya* (VI. ii. 3) as well as in the Brāhmanas like the *Śatapatha* (111. 4.4.4) and the *Aitareya* (I. 25). However, it emerges in its full fledged form in the *Mahābhārata* (Mbh.), *Kaṇvaṇṭhaparvan* (Kp., ch. 24), *Draṇṭhaparvan*, (ch. 173. 52-58) and also occurs in the following Purāṇas viz. *Śivapurāṇa* (Śp., 11. 5. 1-10), *Jñāna Saṁhitā* XIX, XXIV), *Matsyapurāṇa* (MP., ch. 129-130; 135-140; 187. 8, 14-16; 188. 9-10), *Padmaṇṭhapurāṇa* (PP., *Svargakhaṇḍa*), *Bhāgavatapurāṇa* (Bhp., IV. 17. 13; V. 24. 28; VII. 10. 54, 63; VIII. 6. 31; XI. 16. 20), *Skandapurāṇa* (Skp., *Āvāntyakhaṇḍa-Revākhaṇḍa* XXVI-XXVIII; *Vaiṣṇavakhaṇḍa* XXXV), *Liṅgapurāṇa* (Lp., LXXI-LXXII), *Brahmaṇḍapurāṇa* (Brahmaṇḍap). *Vāyupurāṇa* (VāP) etc. Several rūpakas and dramas also have been originated from this legend e.g. *Tripuradahana*, a poem of Rāmavarman (1858-1926), *Tripuradahana* of Vāsudeva (9th century A.D.), *Tripuravadha* of Rudraṭa, *Tripuravijaya*, a campū of Atirātrayajvan, *Tripuravijaya* of Bhoganātha, *Tripuravijaya*, a drama of Nārāyaṇa Śāstrin, *Tripuravijayacampū* of Nṛsimha, *Tripuravijayacampū* of

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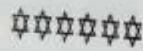
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1. सत्रज्योति, सम्पादन- असमसत्रमहासभा, 2005, पृ-31.
2. गोस्वामी, नारायणचन्द्रः, सत्रीया संस्कृतिर स्वर्णरेखा, गुवाहाटी, 2005, पृ-2.
3. गान, सयम शङ्कीया, सत्रनव्य, रोदासी प्रकाशन, जोरहाट, 2008, पृ-12.
4. भागवत, प्रथमस्कन्ध-1/4.
5. गोस्वामी, नारायणचन्द्रः, सत्रीया संस्कृतिर स्वर्णरेखा: 2005, पृ-12.
6. भट्टदेवस्व शरणमालिका, सत्रज्योति, सम्पादन-असम सत्र महासभा, 2005, पृ-2.
7. मातुली, सम्पादन-प्रज्ञानकुमार महन्त, 2001, पृ-106.
सन्तमि, सम्पादन आरुनीआटीसत्र, 2004, पृ-41.
8. गोस्वामी, नारायणचन्द्र, सत्रीया संस्कृतिर स्वर्णरेखा, 2005, पृ-1.
संस्कृतसाहित्यस्य विकासे पूर्वोत्तरराज्यानां योगदानम् सम्पादन-राष्ट्रीयसंस्कृतसंस्थानम् 2011, पृ-50-53
9. सत्रज्योति, सम्पादन, असमसत्रमहासभा, 2005, पृ-64.
10. गोस्वामी, नारायणचन्द्र, सत्रीया संस्कृतिर स्वर्णरेखा, गुवाहाटी, 2005, पृ-35
11. काकति, केशव, मातुलिर मुख्यसत्रसमुहर इतिवृत्त 2010, पृ-10.
12. काकति, केशव, मातुलिर मुख्यसत्रसमुहर इतिवृत्त 2010, पृ-10.
13. श्रीकृष्णलोलामृतम्, मुमुक्ता । Shastri, Biswanarayan, Sanskrit in Assam through the ages, p-237-239.
14. देवोस्वामी देवदत्त, श्रीकृष्णलोलामृतम्, मुमुक्ता ।
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17. Shastri, Biswanarayan, Sanskrit in Assam through the ages, p-239.
18. काकति, केशव, मातुलिर मुख्यसत्रसमुहर इतिवृत्त 2010, पृ-10-17.



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राष्ट्रीयसंहतिसाधने संस्कृतस्य भूमिका

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अस्माकं मातृभूमेर्भारतवर्षस्य भाषाणां मध्ये संस्कृतभाषा एव प्राचीनतमा अस्ति । भारतोपमहादेशस्य सर्वत्र वैविध्ये अनैक्ये च अस्य देशस्य राष्ट्रियसंहतिः संप्रवति । अत्र प्राकृतिकं सामाजिकं आर्थिकं धर्मीयं च वैषम्यम् अस्ति । वैषम्यस्य अनैक्यस्य च मध्ये ऐक्यस्य योगसूत्रं संस्कृतभाषा एव साधयति । राष्ट्रियसंहतेरखण्डतायाः सम्यक् परिरक्षणे परिवर्धने च संस्कृतभाषा अतीव महत्त्वपूर्णा भूमिकां पालयति । राजनैतिकैक्यस्य धारणा पुराकालेऽपि आसीत् । राजचक्रवर्ती राजाधिराज-सम्राट् इत्येवमादयः उपाधयः तथैव राजसूयः वाजपेयः विश्वजिदश्वमेधादयः यज्ञास्तदेव सूचयन्ति ।

भारतराष्ट्रस्य ऐक्यरक्षणार्थं संस्कृतं यानि कार्याणि करोति, तानि भाषा-साहित्येतिहास- संस्कृति- धर्म- विज्ञान- कला- दर्शनादिकक्षेत्रेषु परिलक्ष्यन्ते । भारतराष्ट्रोऽयमनेकानां भाषाणामुद्यानमिव प्रतिभाति । यथा उत्तरभारते हिन्दो- असमीया- बंगीया- गुजराती- पञ्जाबी प्रभृतयो भाषाः प्रचलिताः सन्ति, तथैव समग्रभारतवर्षस्य विभिन्नेषु प्रान्तेषु विभिन्नानां भाषाणां वैचित्र्यं परिलक्ष्यते । संस्कृतभाषा प्राकृतभाषाणाम् अपभ्रंशाणामुत्पत्तिस्ताभ्यश्च देशीयभाषाणाम् । दाक्षिणात्ये तामिल- तेलुगु- मालायलम- कन्नडी प्रभृतयो याः भाषाः सन्ति तासु अपि संस्कृतशब्दाणां प्राचुर्यं परिलक्ष्यते । संस्कृतभाषा आसां सर्वासां भाषाणां जननी अस्ति सर्वासु भारतीयसु भाषासु प्रतिशतं षष्टरारभ्य अशीतिपर्यन्तं संस्कृतशब्दाः सन्ति इति भाषाविदां मतम् । अर्थात् संस्कृतस्य सञ्जीवनीरसः सर्वासु प्रान्तीयभाषासु प्रवहमाणो भवति । संस्कृतभ्रान्नाश्रयेण सर्वा अपि प्रान्तीयभाषाः अनायासेनेव अवगन्तुं शक्यन्ते । अतः संस्कृतभाषामाध्यमेन विविधभाषावक्तृणां यो घनिष्ठः सम्बन्धो भवति स एव भारतस्य भाषिकी एकतामपि साधयति ।

संस्कृतभाषायां सुमहत् साहित्यमस्ति । अस्माकं भारतीयानां निखिलं प्राचीनसाहित्यं संस्कृतभाषायामेव रचितमस्ति । वेदाः वेदांगाः पुराणानि स्मृतयः रामायण

श्रुतिमञ्जरी

SHRUTIMANJAREE

श्रुतिमञ्जरी



DEPARTMENT OF SANSKRIT
NALBARI COLLEGE, NALBARI, ASSAM

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वैदिकसाहित्ये नीतिवचनम्ः

एका समीक्षा

ड° ध्रुवजित् शर्मा

सहायकाचार्यः

संस्कृतविभागः, दरङ् महाविद्यालयः

ड° रातुल शर्मा

सहायकाचार्यः

संस्कृतविभागः, पच्छिम बङ्गिग

आञ्चलिक महाविद्यालयः

संस्कृतसाहित्ये वेदानां स्थानं सर्वथा एव सर्वोपरि वर्तते । भारतीयज्ञाननद्याः स्रोतांसि वेदा एव । विना वेदम् अस्माकं भारतीयता वा कुत्र ? न केवलं भारतवर्षस्य अपि तु समग्रमानवजातेः प्रगतेः सोपानं भवति वेदा एव । यथा भारते तथा विदेशे अपि वेदाः समादृताः सन्ति । अयं वेदस्तु धर्मस्य मूलमिति उच्यते । यदुक्तं मनुना- "वेदोऽखिलो धर्ममूलम्" इति ।

तत्र मन्त्ररूपो ब्राह्मणरूपश्चेति वेदो प्रधानरूपेण द्विविधः । ब्राह्मणग्रन्थोऽपि पुनः त्रिधा विभक्तो भवति । यथा ब्राह्मणम्, आरण्यकम् उपनिषदश्चेति । तद्वत् वेदाङ्गानि अपि सन्ति । एवं एतत् सर्वं मिलित्वा समग्रस्य वैदिकसाहित्यस्य पूर्णरूपो जायते । तथा वैदिकसाहित्ये ज्ञान-विज्ञान-धर्म-दर्शन-सदाचार-संस्कृति-नैतिक-सामाजिक-राजनैतिकप्रभृतीनां मानवजीवनोपयोगिविषयाणां सन्निवेशो भवति ।

मानवसमाजस्य भावात्मकैक्यसाधने तत्पोषणे च नीतिज्ञानमतीव महत्त्वमावहति । नीतिज्ञानं विना मानवजीवनस्य मानवसमाजस्य वा पूर्णविकाशो न जायते । नीतिज्ञानं तु मानवजातेः प्रगतेः सोपानम् । महाभारते उच्यते यत् येन उपायेन लोकं सद्व्यवहारार्थं प्रेरयति स एव नीति इति कथ्यते -

"यैर्यैरुपायैर्लोकस्तु न चलेदार्यवर्त्मनः ।

तत्सर्वं राजशार्दूल-नीतिशास्त्रेभिवर्णितम्" ॥ इति । महाभारतम्, शान्तिपर्व, ५९. ७४

नीतिस्तावत् लोकहिताय प्रवर्तते ।

वेदानां मध्ये प्राचीनतमो वेदो भवति ऋग्वेदः । अयं तु विश्वस्य प्रथमं साहित्यम् इति मन्यते । तत्र ऋग्वेदस्य कतिपयसूक्तेषु नीतिकथायाः प्रयोगो दृश्यते । 'यम-यमी'ति प्रसिद्धे सूक्ते तयोः वार्तालापद्वारेण यत् परिस्फुर्यते तत्रापि नीतिकथाया एव बीजं परिदृश्यते । यजुर्वेदसंहितायामपि नीतिमूलकानां कथानां समाहारो भवति । एवं वैदिकसाहित्येषु अन्तर्गतेषु धर्मसूत्रेषु अपि मानवजातेः कुञ्चिकास्वरूपा नीतिकथा अस्ति । विशेषतः वेदस्य अन्तिमे भागे

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'Space' in Australian Aboriginal Literature

Himaxe Bordoioi*

Do I lie? Isn't it true that you threw me out of your house and made me live in a filthy cave? The Ghentol – (Aime Cesaire, A Tempest, 13).

Caliban's blunt reply to Prospero echo's the plight of the natives, particularly of the settler colonies, who were dispossessed of their traditional lands and driven to missions, reserves, frontiers or what is euphemistically termed as the 'ghetto'. Colonialism is inextricably linked to space. The conquest of non-European spaces by Europeans was central to the colonial conquest; their chief aim being assertion of power and hegemony over the natives. In the case of colonies of occupation, the colonizers occupied space of the respective native lands through political and military conquest. It is more about exploitation of the 'economic space' for the benefit of their 'mother' country. In contrast to the above form of colonialism, Settler form of Colonialism is about 'spaces' where White races settled down. Settling down in a colonial space often leads to dislocation and displacement of the natives. This displacement often takes various forms: physical, geographical, spiritual, cultural and symbolic (Johnston and Lawson *A Companion to Australian Literature* 363). By subjugating the territorial and physical space of the natives, the colonizers insidiously subjugated their cultural 'space'. The colonial theme of spatial conquest is explicitly stated in Robinson

Crusoe which is regarded as the prototype of the 'colonial novel'. Crusoe's realization as the sole authority of the island is true to the natives, who establish his dominance and control over the natives of the newly occupied space:

My Island was now peopled... How like a king I look'd. First of all, the whole Country was my own mere property; so that I had an undoubted right of Dominion. Secondly, My People were perfectly Subjected: I was absolute Lord and Law-giver; they all owed their Lives to me, and were ready to lay down their Lives... (ibid: 53)

However, the conquest of such spaces was possible with the employment of discourses of 'emptiness'. As Anna Johnston and Ian Lawson state, "Empty land can be settled, but occupied land can be invaded. So, the land must be emptied so that it can be filled with words and herds" (*A Companion* 365). The most striking example of formation of such discourse is in the case of Australia, where the legal term "Terra Nullius" legitimized the settlement of the colonizers. As Stuart Mackinlyre observes, "For the European navigators, Australia was Terra Australia Incognita, the south land beyond the limits of the known world. It was a place of mythical wealth and fabulous wealth in the imagination of those who had long anticipated it, a blank space where their fantasy could run free" (*A Concise* 24). In most of the cases the settlers could justify the displacement of the Aborigines owing to their uneconomic use of the land. For example, the *Port Phillip Herald* states, "it cannot be improper... to reclaim their grounds from a useless waste to a state of fertility giving employment to the idle, food to the hungry, and quick sure return to the adventurer capitalist" (quoted in Johnston 59). The settlers sought to annihilate the existing Aboriginal society by attributing the fiction of "terra nullius" which justified that the land lacked human habitation, law, government, etc. The natives whom the settlers encountered were however, seen as an obstacle and a hindrance. Therefore, the myth of unused land and the European Utilitarian perspective were used to justify their settlement. A. D. Hope points out that, "They call her a young country; but they lie: /She is the last of lands, the emptiest, / A

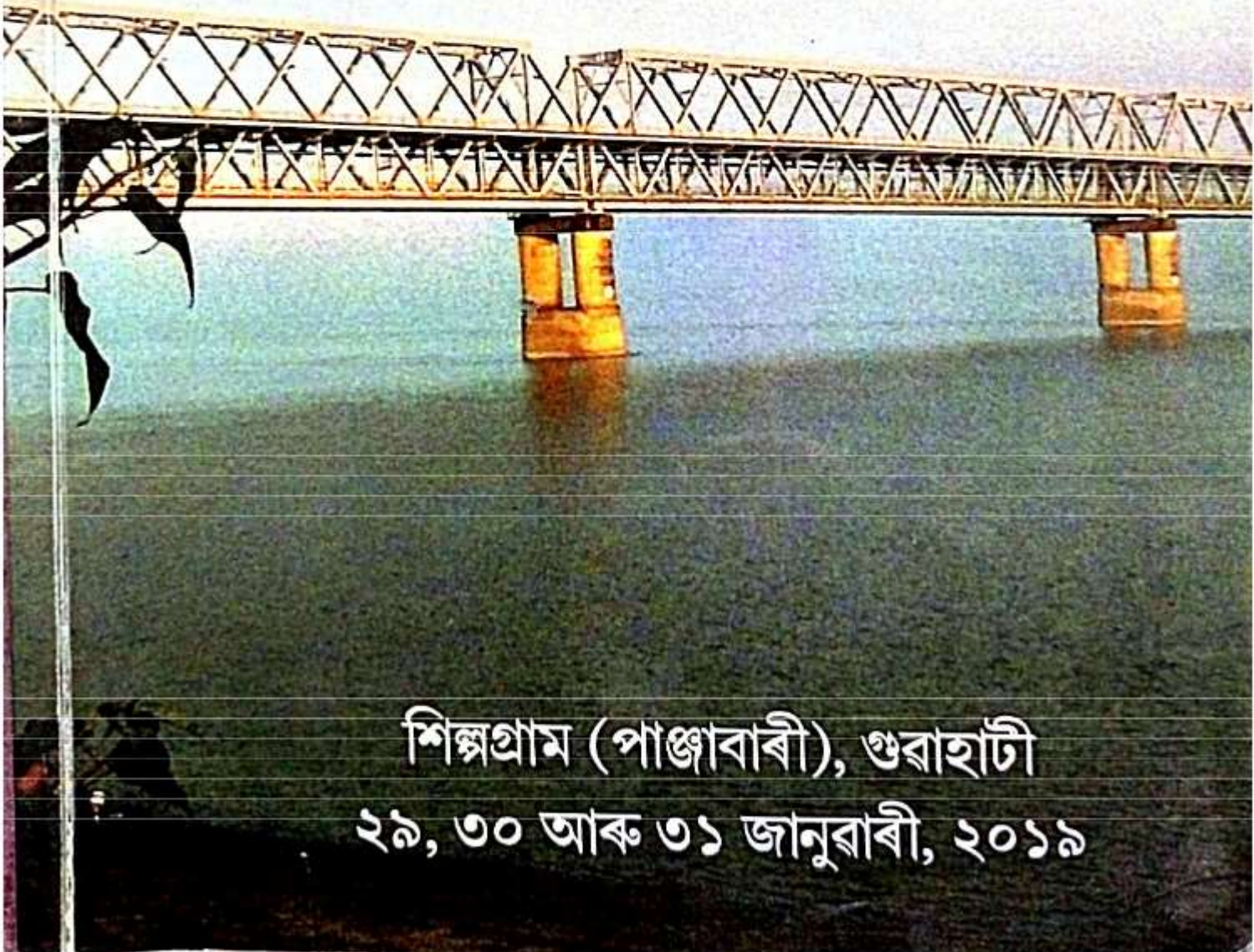
*Deptt. Of English, Darrang College, Tezpur.

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বৰলুইত

অসমীয়া সাহিত্য সন্মিলনী গুৱাহাটী অধিবেশনৰ
স্মৃতিগ্ৰন্থ, ২০১৯



শিল্পগ্ৰাম (পাঞ্জাবাৰী), গুৱাহাটী
২৯, ৩০ আৰু ৩১ জানুৱাৰী, ২০১৯

অসমৰ কাঁহ শিল্প

প্ৰতুল ডেকা



লোকশিল্পৰ এটা
প্ৰধান বিভাগ হ'ল
ধাতু শিল্প। কাঁহ, পিতল,
লো, সোণ, ৰূপ ইত্যাদি বিভিন্ন
ধাতুৰ পৰা দৈনন্দিন জীৱনত ব্যৱহাৰ্যকৈ

নিৰ্মাণ কৰি উলিওৱা সামগ্ৰীবোৰেই হৈছে ধাতু শিল্পৰ
অন্তৰ্গত। ধাতুশিল্পক মূল্যবান সম্পদৰূপে গণ্য কৰা হয়।
ধাতু শিল্পসমূহক মূলতঃ চাৰিটা ভাগত ভাগ কৰিব পাৰি—
কাঁহ শিল্প, পিতল শিল্প, কমাৰ শিল্প, সোণ-ৰূপ শিল্প।

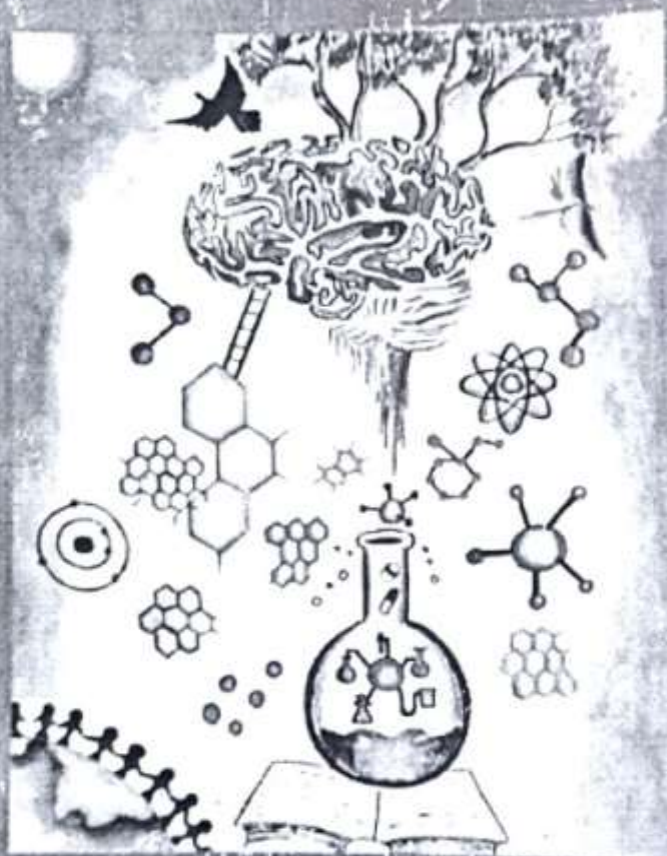
কাঁহেৰে নিৰ্মিত শিল্পই হৈছে কাঁহ শিল্প। কাঁহ শব্দটো
সংস্কৃত 'কাংস্য' শব্দৰ পৰা বিকশিত হৈছে। 'কাঁহ' শব্দৰ
অভিধানগত অৰ্থ এনে ধৰণৰ— *চন্দ্ৰকান্ত অভিধান* ৰ
মতে, "টিন আৰু তাম মিহলাই কৰা এবিধ ধাতু।"
তেনেদৰে, *Collins English Dictionary* ৰ 12th
Editionৰ মতে "an alloy of copper and tin, with
some zinc and lead, used in casting bells."

কাঁহ স্বতন্ত্ৰ ধাতু নহয়। বাং (Tin) আৰু তাম
(copper) দুয়োটা ধাতু সংমিশ্ৰণত সৃষ্টি হোৱা ই এবিধ
যৌগিক ধাতু। বাং আৰু তামৰ অনুপাত সম্পৰ্কে ভিন্ন মত
পোৱা যায়। ভূপেন তালুকদাৰৰ প্ৰবন্ধত উল্লিখিত অনুসৰি
"উন্নতমানৰ কাঁহ তৈয়াৰ কৰিবলৈ তাম ৮০ ভাগ আৰু

বাং ২০ ভাগ মিহলাই
লোৱা হয়।" ধ্ৰুৱ কুমাৰ তালুকদাৰৰ গ্ৰন্থত উল্লিখিত
অনুসৰি "৬৩ ভাগ তামৰ লগত ৩৭ ভাগ বাং মিহলাই কাঁহ
প্ৰস্তুত কৰা হয়।" বৰ্তমান উত্তৰ-পূবৰ একমাত্ৰ কাঁহ
তৈয়াৰী কাৰখানাৰ স্বত্বাধিকাৰী তথা বৰপেটা জিলা
আম্‌খোৱা নিবাসী হৰিপ্ৰসাদ বৰ্মনে উল্লেখ কৰা অনুসৰি
বাং ৩০ শতাংশ আৰু তাম ৭০ শতাংশ দি উৎকৃষ্ট মান
কাঁহ তৈয়াৰ কৰা হয়। কাঁহ প্ৰস্তুত সম্পৰ্কে এনে ভিন্ন মত
পালেও কাঁহৰসকলৰ পৰা পোৱা মতামত অনুসৰি উৎকৃষ্ট
মানদণ্ডৰ কাঁহ প্ৰস্তুত কৰিবলৈ ৭৮ ভাগ তামৰ লগত ২
ভাগ বাং মিহলাই কাঁহ তৈয়াৰ কৰা হয়। দৰাচলতে, নিৰ্মাণ
কৰিবলগীয়া সামগ্ৰীটোৰ ওপৰত ভিত্তি কৰি নিৰ্দিষ্ট
অনুপাতত মিহলাই কাঁহ তৈয়াৰ কৰি ল'ব পাৰি। বেচ
ঘণ্টা আৰু অন্যান্য ডাঠ সামগ্ৰী তৈয়াৰ কৰিবলৈ হ'লে
২২ শতাংশ আৰু তাম ৭৮ শতাংশ মিহলাই উৎকৃষ্ট কাঁহ
তৈয়াৰ কৰা হয়। কম ডাঠ সামগ্ৰী তৈয়াৰ কৰিবলৈ হ'লে
বাং ২০ শতাংশ আৰু তাম ৮০ শতাংশ মিহলাই কাঁহ

AROMA

A Collection of Articles Based on Chemical Sciences



DEPARTMENT OF CHEMISTRY
NALBARI COLLEGE, NALBARI

Editors

Dr. Dhiraj Talukdar
Dr. Dhanju Mani Pathak

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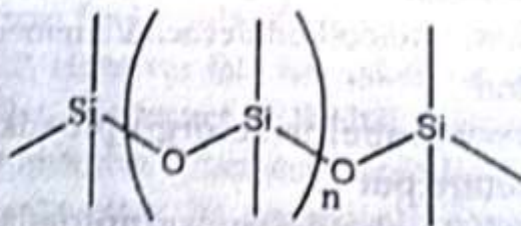
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Inorganic polymer and their impact on environments

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Silicones are polymers that include any inert, synthetic compound made up of repeating units of siloxane, which is a chain of alternating silicone atoms and oxygen atoms, frequently combined with carbon and/or hydrogen. They are typically heat-resistant and rubber-like, and are used in sealants, adhesives, lubricants, medicines, cooking utensils, and thermal and electrical insulations. Some common forms include silicone oil, silicone grease, silicone rubber, silicon resin, and silicone caulk.



Chemical structure of the silicone polydimethylsiloxane (PDMS)

More precisely called polymerised siloxanes or polysiloxanes, silicone consists of an inorganic silicone-oxygen backbone chain (...-Si-O-Si-O-Si-...) with organic side groups attached to the silicone atoms. These silicone atoms are tetravalent, so, silicones are polymers