

Department of Botany

History

The Department of Botany under St. Edmund's College, Shillong came into existence on the 1st of November, 1949 with the appointment of (L) Prof. N.C. Debroy. The first batch of under-graduate course in Botany started in the year 1962. Prof. D. Choudhury, the current Vice Principal of the college, joined the department as Lecturer in the year 1970 and assumed headship since 1972 and for another 36 long years he steered the department into becoming one of the best departments in the college. He is a legacy to the Department of Botany.

Dr. B. Neogi, currently retired, joined as Lecturer in the year 1981 and served the department till 2007. He is mainly responsible for the vast collection of plant herbaria in the department especially in plants of ethnobotanical importance.

Dr. M.C. Paul, the current Head of the Department, joined the department as Lecturer in the year 1984 and assumed headship since the year 2008 till date. During his headship, and because of his flexibility and innovativeness, the department has undergone a major transformation in infrastructural facilities and laboratory equipments for better teaching and research.

Many others have come and gone and are currently teaching in various universities in India and abroad. The department also remembers (L) Dr. S. Myrthong whose knowledge and contribution in the field of Plant Taxonomy till date is unparalleled.

Dr. S. Goswami, currently a member of the department faculty, joined the department as Lecturer in the year 1999 and is serving the department since then. Mr. D. Syiemiong joined the department as Lecturer in the year 2007, Dr. E.V. Kharshiing joined the department as Lecturer in the year 2008 and finally, Mr. V. Manners joined the department as Assistant Professor in the year 2011. Mr. E. Khonglam joined the department as Laboratory Assistant in the year 2011 after the retirement of Shri. S.C. Paul.

The Department of Botany is one of the science departments in the college receiving funds from the Department of Biotechnology, New Delhi, Ministry of Science & Technology, Govt. of India under the Star College Scheme for potential of excellence.

Courses offered

1. B.Sc. in Botany (Hons).
2. UGC-sponsored one-year career oriented course in mushroom cultivation.



Makhan C. Paul, Ph.D.

Head, Department

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Education

North Eastern Hill University, Shillong, India: Ph.D. (Botany), 1991, under Prof. R.R.Mishra

North Eastern Hill University, Shillong, India: M.Sc. (Botany), 1982.

North Eastern Hill University, Shillong, India: B.Sc. Honours (Botany), 1978

Workshop/Seminar/Conferences organized

1. Member of organizing committee of the "1st Conference of Meghalaya College Teachers in Botany 2013" jointly organised by Depts of Botany, St. Edmund's College and Union Christian College, INDIA – 2013.
2. Member of organizing committee of Regional Workshop on "Community Participation in Bio-resource Management with Special Reference to Traditional Medicine of the Khasis of Meghalaya" organised by Dept of Botany, St. Edmund's College, INDIA – 2011.
3. Member of organizing committee of Workshop on "Fundamental Processes of Living Plants" organised by Dept of Botany, St. Edmund's College, INDIA – 2009.
4. Member of organizing committee of "National Seminar on toxicity of chemicals & their hazards with special reference to heavy metals" organised by Dept of Chemistry, St.Edmund's College, INDIA – 2008.
5. Co-ordinator of the Science Exhibition in St. Edmund's College, 2014.



Sanjiban Goswami, Ph.D.

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Education:

North Eastern Hill University, Shillong, India: Ph.D. (Botany) 2002, under Prof. H. N. Pandey, Head Department of Botany.

North Eastern Hill University, Shillong, India: M.Sc. (Botany) 1993

North Eastern Hill University, Shillong, India: B.Sc. Honours (Botany) 1991

Teaching experience

1998 – Present: Associate Professor, Dept. of Botany.

Project:

Projects1. 2011-2012 University Grants Commission, Seed Biology of *Schima wallichii* and *Schima khasiana*.

Publications:

1. Syiemiong, D. and Goswami, S. (2013). Importance of Actinobacteria, the high G+C Gram-positives. Submitted In: Spectrum:Journal of science and society for sustainable development
2. Goswami, S. and Pandey, A. K. (2012). Development, Structure and Viability of Embryo in *Schima khasiana* Dyer and *Schima wallichii* (DC) Korth. (Theaceae)In: International Journal of Plant Reproductive Biology **4** (1) pp. 61-65
3. Goswami, S. Choudhury, H. and Chowdhury, S. (2011). Conservation of Paleocene-Eocene fossil biota for sustainable development of local community of Mawsynram, Meghalaya In: Spectrum:Journal of science and society for sustainable development **3** (1-4) pp. 70-73

4. Goswami, S. and Pandey, A. K. (2010). Pollen-Pistil Interaction in Two North Eastern Himalayan Tree Species: *Schima wallichii* (DC) Korth. and *Schima khasiana* Dyer (Theaceae) In: International Journal of Plant Reproductive Biology 2 (2) pp. 197-203

Current Research Interests

1. Reproductive Biology of Tree Species.
2. Developmental Biology in plants.

Workshop/Seminar/Conferences organized

1. Convenor of the “1st Conference of Meghalaya College Teachers in Botany 2013” jointly organised by Depts of Botany, St. Edmund’s College and Union Christian College, INDIA –2013
2. Member of organizing committee of Regional Workshop on “Community Participation in Bio-resource Management with Special Reference to Traditional Medicine of the Khasis of Meghalaya” organised by Dept of Botany, St. Edmund’s College, INDIA – 2011
3. Member of organizing committee of Workshop on “Fundamental Processes of Living Plants” organised by Dept of Botany, St. Edmund’s College, INDIA - 2009
4. Member of organizing committee of “National Seminar on toxicity of chemicals & their hazards with special reference to heavy metals” organised by Dept of Chemistry, St. Edmund’s College, INDIA - 2008

Workshop/Seminar/Conferences attended

Paper Presentation

1. Goswami, S. (2013): Enchroachment upon bank of river Wah Umkhray by human population and its effects on environment and biodiversity In: National Seminar on Burning environmental issues: Risk to biodiversity and human health with special reference to North East India, St. Mary’s College, Shillong
2. Goswami, S. (2013): Conservation of water resources and sustainable development In: National Seminar on Politics of Environment, Lady Keane College, Shillong
3. Goswami, S. (2013): Plant Diversity and Seed Habit 2013 In: School level Workshop on Biodiversity, Department of Biotechnology, St. Edmund’s College, Shillong
4. Goswami, S. (2012): Biodiversity and Ecotourism In: Regional Workshop on Environmental service learning, conservation of hotspots of biodiversity and ecotourism, Organised by Bishop Heber College, Tiruchirapalli at St. Anthony’s College, Shillong
5. Goswami, S. (2010): Empty Seeds Occurrence and Separation in *Schima wallichii* and *Schima khasiana* In: Regional Seminar on Biodiversity of North-East – Issues and Concerns, NEHU, Shillong.



Debulman Syiemiong, M.Sc. NET

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Educational Qualification

1. Qualified the ASRB (ICAR) National Eligibility Test (NET) for Lectureship / Asst. Professorship. Feb 2013
2. Qualified the Joint CSIR-UGC National Eligibility Test (NET) for Junior Research Fellowship (JRF) and Lectureship. Dec 2002
3. Jawaharlal Nehru University, New Delhi: M.Sc. (Life Sciences) Jul 2003
4. North Eastern Hill University, Shillong, India: B.Sc. Honours (Botany) Jul 2001

Teaching & Research

1. 2007 – Present; Asst Professor, Department of Botany

2. Currently pursuing Ph.D. in Microbiology & Plant Pathology under the Department of Botany, Gauhati University, Assam.

Publications

1. Syiemiong, D. and Goswami, S. (2013). Importance of Actinobacteria, the high G+C Gram-positives. Submitted In: Spectrum: Journal of science and society for sustainable development

Current Research Interests

1. Biodiversity of actinobacteria in different habitats.
2. Screening of actinobacteria for anti-microbial and plant growth promoting properties.
3. Medicinal plants.

Workshop/Seminar/Conferences organized

1. Member of organizing committee of the “1st Conference of Meghalaya College Teachers in Botany 2013” jointly organised by Depts of Botany, St. Edmund’s College and Union Christian College, INDIA – 2013
2. Member of organizing committee of Regional Workshop on “Community Participation in Bio-resource Management with Special Reference to Traditional Medicine of the Khasis of Meghalaya” organised by Dept of Botany, St. Edmund’s College, INDIA – 2011
3. Member of organizing committee of Workshop on “Fundamental Processes of Living Plants” organised by Dept of Botany, St. Edmund’s College, INDIA - 2009
4. Member of organizing committee of “National Seminar on toxicity of chemicals & their hazards with special reference to heavy metals” organised by Dept of Chemistry, St. Edmund’s College, INDIA - 2008

Conference Posters/Abstracts/Presentation

1. Shilla, U. and Syiemiong, D. (2013) “Teaching and Learning in the 21st Century” In: Book of abstracts of National Seminar on “Education in the North East: Status and Perspective”, Department of Education, North Eastern Hill University, Shillong, 3rd – 4th September, 2013.



Eros Vasil Kharshiing, Ph.D.

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Education

1. University of Hyderabad (Hyderabad, INDIA), Ph.D. (Plant Sciences) 2007 with Prof R P Sharma
2. North Eastern Hill University (Meghalaya, INDIA), M.Sc. (Botany) Jul 2002
3. North Eastern Hill University (Meghalaya, INDIA), B.Sc. Honours (Botany) Jul 2000

Teaching and Research

1. 2008 – Present; Asst Professor, Department of Botany
2. 2012 – 2013; Biotechnology Overseas Associate (DBT) at Institute of Molecular, Cell & Systems Biology, University of Glasgow, UK with Prof John M Christie
3. 2012; Recognition as Joint Supervisor for Ph.D. guidance under School of Life Sciences, North Eastern Hill University, Meghalaya
4. 2012; Science and Engineering Research Board (GoI) Fast Track Scheme for Young Scientists

5. 2007 – 2008; ENEA Annual Research Fellowship award for Post-doctoral training, (ENEA) Rome, Italy with Prof Giuliano Giovanni
6. Apr 2006 – Jul 2006; DST-DAAD Visiting Scholar at Albert-Ludwig Universitat, Freiburg, Germany with Prof Klaus Palme
7. May 2005 – Aug 2005; DST-DAAD Visiting Scholar at Albert-Ludwig Universitat, Freiburg, Germany with Prof Klaus Palme
8. Feb 2005 – Sep 2007; Council of Scientific and Industrial Research (CSIR), New Delhi, India, Senior Research Fellow
9. Feb 2003 – Feb 2005; Council of Scientific and Industrial Research (CSIR), New Delhi, India, Junior Research Fellow
10. Jun 2002; Qualified the Joint CSIR-UGC National Eligibility Test (NET) for Junior Research Fellowship (JRF) and Lectureship

Current Research Interests

1. Photoreceptor function and signaling in adaptive responses of higher plants.
2. Bioactivity of medicinal plant extracts.
3. Other research interest includes documenting the traditional knowledge of tribal groups of Meghalaya with special relevance to medicinal plants.

Research Support

1. University Grants Commission 2011 - 2012
2. Science & Engineering Research Board (Department of Science and Technology) 2012 - 2015

Workshop/Seminar/Conferences organized

1. Convenor of Regional Workshop on “**Community Participation in Bio-resource Management with Special Reference to Traditional Medicine of the Khasis of Meghalaya**” organised by Dept of Botany, St. Edmund’s College, INDIA – 2011
2. Member of organizing committee of Workshop on “**Fundamental Processes of Living Plants**” organised by Dept of Botany, St. Edmund’s College, INDIA - 2009
3. Member of organizing committee of “**National Seminar on toxicity of chemicals & their hazards with special reference to heavy metals**” organised by Dept of Chemistry, St. Edmund’s College, INDIA - 2008

Research Publications

1. **Eros Kharshiing**, Stuart Sullivan and John Christie (2013) Initiation of Phototropic Growth - the Where, the How and the Now. *The Biochemist* 35 (5): 8-12
2. **Eros Kharshiing** (2012) Aqueous Extracts of Dried Fruits of *Zanthoxylum armatum* DC., (Rutaceae) Induce Cellular and Nuclear Damage Coupled with Inhibition of Mitotic Activity In Vivo. *American Journal of Plant Sciences* 3 (11): 1646-1653
3. Negi S, **Kharshiing EV**, Sharma R (2011) NO way! Is Nitric Oxide Level in Tomato Regulated by a Mammalian IKK/NF- κ B like Signaling Pathway? *Plant Signal Behav* 6 (7): 1049-1052
4. **Kharshiing EV**, Kumar GP, Sharma R (2010) PIN it on Auxin: The role of PIN1 and PAT in tomato development. *Plant Signal Behav* 5 (11): 1381-1385
5. Negi S, Santisree P, **Kharshiing EV**, Sharma R (2010) Inhibition of the Ubiquitin-Proteasome Pathway Alters Cellular Levels of Nitric Oxide in Tomato Seedlings. *Molecular Plant* 3: 854-869
6. **Kharshiing EV**, Kumar GP, Ditengou FA, Li X, Palme K, Sharma R (2010) The polycotyledon (pct1-2) Mutant Of Tomato Shows Enhanced Accumulation Of PIN1 Auxin Transport Facilitator Protein. *Plant Biology* 12 (1): 224-228 (Cover page article for that issue)

7. Vankadavath NR, Hussain AJ, Reddaiah B, **Kharshiing E**, Basha PO, Gupta S, Sreelakshmi Y, Sharma R. (2009) Computer Aided Data Acquisition Tool for High throughput Phenotyping of Plant Populations. *Plant Methods* 5:18

Conference Posters/Abstracts (2008 onwards)

1. **Kharshiing E**, Pritchard C, Cloix C, Richter G, Sullivan S, Murphy AS and Christie JM (2013) "Spatial initiation of phototropic growth" In: *Book of abstracts of International Symposium on Plant Photobiology, Edinburgh, Scotland 3-6 June, 2013*

2. Sharma S, Vasuki H, **Kharshiing E**, Sharma R, Sreelakshmi Y (2010) Phototropin1: A new player in regulating the shelf life of tomato fruits" In: *Book of abstracts of the 7th Solanaceae Genome Workshop, Dundee, Scotland 5-9 September, 2010*

3. **Kharshiing EV** (2010) "In vivo mitodepressive activity in aqueous extracts of *Zanthoxylum alatum* Roxb used in traditional herbal medicine" In: *Book of abstracts of 12th Medicinal and Aromatic Plants Seminar, Kuala Lumpur, Malaysia 3-4 August, 2010*

Sharma R, Negi S, Santisree P, **Kharshiing EV** (2008) "Nitric Oxide (NO): Regulation of Tomato Development by NO" In: *Book of abstracts of the 5th Solanaceae Genome Workshop, Cologne, Germany 12-16 October, 2008.*



Dr. Wympher Langstang, Ph.D

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Title of thesis: Embryological studies on *Gaultheria fragrantissima* Wall., an important medicinal plant.

Experience

- i. **Technical Assistant** in Bio Resources Development Centre, Upper Shillong an autonomous society under Planning Department, Govt. of Meghalaya for a period of 4 years.
- ii. **AYUSH Scientific Officer** in AYUSH Drug Testing Laboratory (ISM& H Section), Pasteur Institute, Shillong, Govt. of Meghalaya for a period of 4 years 8 months.
- iii. **Assistant Professor** in Department of Botany, St. Edmund's College, Laitumkhrach, Shillong for a period of 2 months 25 days till date.

1. Publications

- i. Floral biology of *Gaultheria fragrantissima* Wall. (Ericaceae) in Meghalaya, Northeast India. *The International Journal of Plant Reproductive Biology*. 3(1). 23-29. 2011.
- ii. Notes on *Corybas himalaicus* – a recent collected rare orchids from Meghalaya. *NE Biol* 4(2). 34-36. 2013.
- iii. Anther development and microsporogenesis in hermaphrodite and male sterile plants of *Gaultheria fragrantissima* Wall. *Flora* (Communicated).

2. Presentation and Conferences

- i. Attended and participated in oral presentation entitled "**Anther development and microsporogenesis in hermaphrodite and male sterile plants of *Gaultheria fragrantissima* Wall**" in National Symposium on "Himalayan Biodiversity: Prospects and Challenges" held in the Centre of Advanced Studies in Botany, Department of Botany, North Eastern Hill University, Shillong from March 20-21, 2014.
- ii. Attended and participated in poster presentation entitled "***Gaultheria fragrantissima* Wall. :Medicinal and Wintergreen oil yielding plant growing in Meghalaya, North East India**" during the 96th Indian National Science Congress held in North Eastern Hills University during the 3rd – 7th January 2009.
- iii. Attended in National Roving Seminar on "**Traditional Knowledge**" organized by Ministry of Commerce and Industries, Government of India and the World Intellectual

- Property Organization in association with Centre for Environmental Studies, NEHU during 07-08 August, 2008 at Shillong.
- iv. Participated in the Regional Workshop on “**Traditional Knowledge Based Biodiversity Conservation Practices in North East India**” jointly organized by the United States Education Foundation in India, New Delhi and Centre for Environmental Studies, North Eastern Hill University, Shillong during 23-24, March, 2006.
 - v. Attended in “Regional Seminar on “**Biodiversity- Herbal Medicine**” organized by the Internal Quality Assurance Cell, Synod College at Dinam Hall Jaiaw, Shillong on 3rd August, 2006.

3. Workshop and Trainings

- i. Participated in the “**Short Term Training Programme on Analytical Instruments (GCMS, LCMS and HPLC system)**” during 23rd -25th July 2014 held at the Central Analytical Instrumentation Facility(CAIF) Guwahati Biotech Park Incubation Centre, Guwahati, Assam.
- ii. Participated in a national workshop on “**Reproductive biology of flowering plants for their conservation and improvement**” organized by Delhi University Botanical Society, Dept. of Botany, Delhi University. Delhi- 110007.
- iii. Participated in a workshop on “**Basic principles, preparatory methods and application in Transmission Electron Microscopy**” organized by SAIF, NEHU, Shillong.

4. Achievements

- i. Certificate of excellence from St. Edmund’s college for securing 2nd position in the University/ Botany Examination-2002.
- ii. Certificate of caliber for meritorious achievement in the Botany (Hons) Final Examination-2002.

5. Other qualifications/activities

- i. Completed DTP courses in computer.
- ii. MS-DOS and MS Windows short term training.
- iii. Actively involved in sports and games.