



Dr. Gaurav Kumar Mishra

Dr. Gaurav Kumar Mishra is well known for his research on lichen taxonomy, biodiversity and biomonitoring studies. Dr. Mishra after obtaining master's degree in botany from C.S.J.M. University, Kanpur, perused Ph.D. from a premier research institute CSIR-NBRI, Lucknow under the guidance of Dr. D.K. Upreti, which was awarded by Kumaun University, Nainital. Later, Dr. Mishra served CSIR-NBRI as Young Scientist, Research Associate and National Post-doctoral Fellow

(N-PDF). Currently, he is working as Scientist at the same institute. Dr. Mishra has discovered five lichen species as new to science together with addition of 25 lichen species as new records to the country. He has published more than 30 research papers in reputed national and international journals and authored and co-authored four books, five book chapters and five research articles. In his career he received several awards such as Best Innovative Paper Award (2011), Young Scientist Award in National Conference at Rewa (2013) and Young Scientist Award in International Seminar at Bareilly (2019). For his outstanding contribution in the field of lichenology he was awarded the prestigious Dr. Dharani Awasthi Award by International Association for Lichenology (IAL) in the 8th IAL Symposium held at Helsinki, Finland (2016).



Dr. Siljo Joseph*

Dr. Siljo Joseph, is a DST-INSA INSPIRE Faculty at Lichenology Laboratory, CSIR-NBRI, Lucknow. Dr. Joseph completed his post-graduation from Bharathiar University, Coimbatore. He started his research on lichens in 2009 with his master's dissertation on lichen flora of the Nilgiri hills. Later he joined Botanical Survey of India as JRF in "Flora of India Project" under the guidance of Dr. G.P. Sinha. He was awarded Ph.D. degree from Bharathiar University for revision of the

lichen genus *Opegrapha sensu lato* in India under the guidance of Prof. V.S. Ramachandran. He continued as SRF at BSI and then joined CSIR-NBRI as National Postdoctoral Fellowship (N-PDF). Dr. Joseph's main research interests are on biogeography, phylogeny, systematics and e-monography of the lichen group Arthoniales in India. He also developed web-based applications and programs on the identification of lichens. Considering Dr. Joseph's contributions on the lichen genus *Synarthonia*, a group of scientists from Belgium and Norway named a new species discovered from Madagascar as "*Synarthonia josephiana*". He has published one book, 38 research articles in various international and national journals, nine new species, two new combinations and several new records to the country and different states. Dr. Joseph is felicitated with prestigious Dharni Awasthi Award by International Association for Lichenology during the year 2021.

*While this brochure was under finalization, Dr. S. Joseph was appointed as Scientist at Kerala Forest Research Institute, Peechi.

Lichens are fungi that have discovered agriculture
- Trevor Goward

Organizing committee

From ILS

- Dr. D.K. Upreti, President, ILS
- Dr. Gaurav K. Mishra, Secretary, ILS
- Dr. Sanjeeva Nayaka, Managing Editor, CBA
- Dr. Siljo Joseph, Website Manager, ILS
- Dr. Komal K. Ingle, Treasurer, ILS

From UFRI

- Shri. Sanjiv Chaturvedi, Conservator of Forests (Research)
- Shri. Kundan Kumar, Dy. Conservator of Forests (Research)



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A field-based training on lichens in forestry

3 – 6th May 2022

Jointly organized by

Indian Lichenological Society, Lucknow
And
Uttarakhand Forest Research Institute
Haldwani

Venue

Uttarakhand Forest Research Institute
Rampur Bypass Rd, Rampur, Haldwani – 263139



A field-based training on lichens in forestry

Preamble

The lichens are symbiotic association between a fungus and an alga or cyanobacteria (sometimes both). In the recent times it is observed that several other microorganisms are closely associated with lichens making them a micro-ecosystem. In the world more than 20000 species of lichens are known to occur. India has rich diversity of lichens amount up to 3000 species while Uttarakhand state records about 1200 species. The lichens are important component of biodiversity and with innumerable ecosystem services. While lichens are consumed by man as spice and medicine, they are food and camouflaging background for small invertebrates, initiator of soil formation and nitrogen fixers. The lichens are reservoirs of pharmaceutically important biomolecules. They are sensitive indicators of air pollution and climate change. The bioindicator qualities of lichens can be utilized for understanding health of the forest and planning management strategies. However, it is necessary to understand the basic biology of lichens before employing them in forestry. Therefore, the current training program will focus on studying the lichens directly in the field, identify them under the microscope and learn to utilize them in forest study as well as in other aspects. The following topics will be dealt during the training,

- An overview and systematics of lichens
- Techniques in collection, segregation and preservation of lichens
- Identification of different growth forms (crustose, foliose and fruticose) of lichens
- General uses of lichens
- Utilization of lichens for monitoring forest health
- Utilization of lichens in biomonitoring and biodeterioration studies
- Utilization of lichens for bioprospecting studies
- Phylogeny and phylogeography aspects of lichens
- Lichen physiology and mycobiont culture
- Distribution and mapping of lichens
- Writing scientific papers, reports and project proposal

Indian Lichenological Society (ILS)

ILS is a non-government, non-profit organization of lichen enthusiasts established for the promotion of lichen research in India. The society is registered under Society Registration Act 1860 at Lucknow in 2014. The society regularly organizes seminars, symposia, conferences, workshops and training programmes to spread awareness about lichens among general public. In the recent times the society has expanded its scope to promote academic activities in other cryptogam groups such as algae, fungi, bryophytes and pteridophytes. For this purpose, the society brings out a bi-annual journal 'Cryptogam Biodiversity and Assessment' (www.cbaj.in). ILS also publishes annual newsletter 'ILS eLetter' for communicating overall activities of the society and to publish interesting articles on lichens.

Membership of ILS: The society offers membership to any interested cryptogam researcher with 'Life Membership' fee of Rs. 3500 and 'Ordinary (Annual) Membership' for Rs. 1000. For more information please visit the society's website - www.indianlichenology.com

Uttarakhand Forest Research Institute

Uttarakhand Forest Research Institute was established in the year 2018 under the name 'Centre for Research, Development and Conservation of Himalayan Forestry Resources'. It is a research wing of Uttarakhand Forest Department, but an autonomous body and a first of its own for research. The institute is headquartered in Haldwani and advises the state forest department in determination of the policies for conservation of rare, endangered and threatened species found in the Himalayan region. It also intends to develop a reliable database of the forestry resources of the state and undertake the assessment and impact of climate change in the Himalayan region. The mission of the institute is to "conduct research activities for the scientific management and conservation of forests, and to improve the livelihood of the forest-dependent communities, so as to resolve challenges related to demand-supply of forest produce, environmental imbalance, human-wildlife conflicts".

Audience

The workshop is being organised especially for the research scholars and staff of Uttarakhand Forest Research Institute, Haldwani.

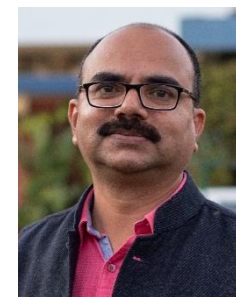
Resource persons



Dr. Dalip Kumar Upreti

Dr. Dalip Kumar Upreti is an internationally acclaimed lichenologist who has made outstanding contribution to the knowledge of lichens in India. He was born at Pithoragarh district of the state Uttarakhand, completed his graduation and Post-Graduation from Kumaun University, Nainital and joined Lucknow University for his Ph.D. in the year 1979. Dr. Upreti initiated his career in the field of Lichenology under the guidance of Dr. D. D. Awasthi at Lucknow University,

Lucknow, in the eighties of the last century. Dr. Upreti served as scientist in CSIR-National Botanical Research Institute, Lucknow for more than 30 years and after superannuation he is continuing in the same institute as Emeritus Scientist. During the course of his service Dr. Upreti had discovered more than hundred taxa of lichens new to science together with addition of more than 250 lichens as new records to the Indian lichen flora. His contributions, collaboration and capacity building in the field of lichenology in India earned him reputed fellowships of the academies i.e. FNA and FNAsc. together with Prof. B.A. Razi Medal (2006), Prof. K.S. Thind Medal (2012) of association for Taxonomy. He is also recipient of Prof. E.K. Janaki Amal National Award 2015 of Ministry of Environment, Forest and Climate Change, New Delhi. He has also awarded Excellence in Science and Technology Award 2019 of state of Uttarakhand. Dr. Upreti has published more than 350 research papers and 10 books on different aspects of lichenology. Most of the research papers are published in SCI journals with high impact factor.



Dr. Sanjeeva Nayaka

Dr. Sanjeeva Nayaka is a well-known lichenologist in India. He hails from Koppa, a small town located in the heart of Western Ghats in Karnataka. After completing his masters from Mangalore University in 1998, Dr. Nayaka joined CSIR-NBRI, Lucknow as Project Assistant and later appointed as Scientist B in the same institute in 2001. He was awarded Ph.D. degree by Dr. RML Awadh University, Faizabad in 2005 for his revisionary studies on lichen genus *Lecanora*

under the supervision of Dr. Upreti. He is currently working as Senior Principal Scientist at CSIR-NBRI. As a lichen taxonomist, Dr. Nayaka has described 28 new species and reported 109 new records to India. He is one of the pioneers to initiate air pollution study with lichens in Bangalore City. Dr. Nayaka has authored three books and more than 200 research papers in peer reviewed journals. Dr. Nayaka has widely travelled in India for collection of lichens and also visited Antarctica. Dr. Nayaka is engaged in popularizing lichen research in India through popular writing popular articles, delivering talks, organizing conferences and workshops. He has trained more than 50 scholars in lichen research from all over the country. He was felicitated with 'Best Scientist Award' for year 2004 by Nature Science Foundation, Coimbatore.