



VANASPATI

(A Newsletter of Central Department of Botany, Tribhuvan University)

Issue No. 17

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EDITORIAL

Research is the strength of the department and number of research grants of the faculties, Ph.D. students and list of publications documented in the newsletter is an evident. Research grants both from national and international organizations has strengthen the collaboration with several foreign plant scientists and organizations and at the same time shows the expertise of our faculties and capacities of our students. The academic strength of the department also reflects by the active participation of the colleague in various conferences, seminars, workshops at home and abroad to disseminate their knowledge and research findings.

As in the past, this year also several colleagues have been nominated for different responsibility within the University, Government of Nepal and in international organisations. This shows the recognition of the expertise of our colleagues by both national and international organisations. Different committees reflect the working norms of the departments to fulfil the needs and improve its quality of the department as a team.

Release of the fern postage stamps by the Department of Postal Service of Nepal in collaboration with the department was an honour for the department. Department have also organised several training programs, ceremonies and farewell to retired colleagues and have honoured teachers and staff for their contribution, apart from its research and academic work. Students have been equally active and have organised field trips, farewell and welcome programme, cleaning program, cultural programs, Teej etc.. The new executive body of BOSS (Botanical Student Society) 2018-2019 have been formed.

Editors

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CELEBRATION OF 52nd ANNIVERSARY OF CDB, TU

The Central Department of Botany celebrated its 52nd Anniversary on Mangsir 13, 2074 (November 29, 2017). The program was chaired by Prof. M. Siwakoti (Head, CDB/ TU), and graced by Prof. Dr. Sudha Tripathi, Rector, TU as the Chief Guest and Prof. Dr. Ram Prasad Khatiwada, Dean, Institute of Science and Technology, Tribhuvan University as Guest of Honour. Welcome address was presented by Prof. Dr. M.P. Panthi and Mr. Benup Raj Adhikari (President, BoSS), Mr. Janak Ram Parajuli (Senior Admin. Assistant), Prof. Dr. R.K.P. Yadav



(CDB, TU), Prof. Dr. Ram Prasad Khatiwada, Dean, IoST, and Prof. Dr. Sudha Tripathi, Rector, TU gave away their remarks.

Chief Guest, Prof. Dr. Sudha Tripathi (Rector), released the department Newsletter 'Vanaspati' (Issue 16) and Prospect of the department was released by Prof. Dr. Ram Prasad Khatiwada, Dean, IoST.

Prof. Dr. Ram Deo Tiwari was felicitated on the occasion for his contributions in the field of Botany, and he shared his experience in the program. Dr. S. K. Jha spoke about Prof. Tiwari's contribution to the department and his role as a botanist in the country. Similarly, Mr. Vishnu Thapa (Sr. Lab. Boy) was recognized for his dedicated service in the department.

Ms. Pratikshya Chalise (Topper, M. Sc., 2014-2016 Batch), Mr. Gaurav Shrestha and Ms. Richa Balayar (M. Sc. Botany I Sem.) Ms. Urusha Sinkwal (M. Sc. BEM II Sem.) were awarded with meritorious certificate for their respected batch 2017 Ms. Priyanka Bhatta (M. Sc. Botany I Sem.) were awarded with Narendra Bhatt Memorial Scholarship 2017. The program was conducted by Dr. C.B. Baniya.

FERN POSTAGE STAMP RELEASE

Postal Service Department of Nepal release the first day cover of fern postage stamp at Central Department of Botany, Tribhuvan University Kirtipur, Kathmandu, on December 28, 2017. Prof. M. Siwakoti (Head, CDB/TU), chaired the program, and Mr. Rajan Paudel, Acting Director General, Postal Service Department of Nepal was the chief guest. Dr. S. K. Ghimire gave away the welcome address and information about six fern species regarding its name, its important uses and brief description was given by Prof. Dr. Sangeeta Rajbhandary. The photos of the stamp and its description was provided by Prof. Dr. S. Rajbhandary and Dr. D.R. Pant. The program was conducted by Dr. C.B. Baniya.



The postage stamp covered six fern species (*Lycopodium japonicum*, *Dryopteris cochleata*, *Cyathea spinulosa*, *Drynaria propinqua*, *Nephrolepis cordifolia*, *Tectaria coadunata*). The ferns were selected on their importance of their use and one kept in the CITES list.



GIS TRAINING

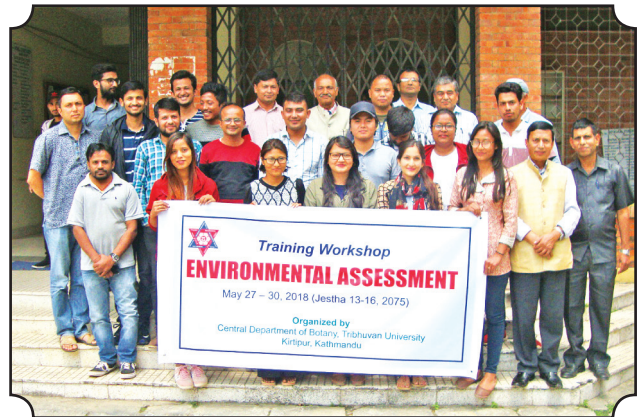
A training workshop on Remote Sensing (RS) and Geographic Information System (GIS) was organized for the students of M.Sc. Biodiversity and Environmental Management (4th semester), M. Sc. Botany (3rd Semester) and PhD Scholars from May 6-8, 2018. Altogether 20



students participated the workshop. Dr. Niti Bhusan Mishra from the Department of Geography and Earth Science, University of Wisconsin-La Crosse, WI, USA was the resource person for the workshop. Dr. Mishra was supported by his graduate student Mr. Jackson Radenz. During the workshop, Dr. Mishra also demonstrated the use of drone for image capture and data processing.

EIA TRAINING

The Central Department of Botany organised Environmental Assessment training workshop for M.Sc. Biodiversity and Environmental Management (BEM)



fourth year students from May 27-30, 2018. Mr. Batu Krishna Uprety (former Joint Secretary), Prof. Bhanu Timalina, Mr. Nranjan Shrestha, Mr. Ajay Bhakta Mathema, Prof. Mukesh K. Chettri, Prof. Tej Thapa, and Mr. Surendra Raj Pant were the Resource Persons for the program.

INCEPTION WORKSHOP OF BIFA PROJECT

An inception workshop of the Biodiversity Information Fund for Asia (BIFA) program of the Global Biodiversity Information Facility (GBIF) funded project (Mobilizing



occurrence data of alien and endemic plant species of Nepal) project was organized on July 6, 2018 at the Department of Plant Resources, Thapathali, Kathmandu. The project is being implemented jointly by the Central Department of Botany (TU) and the Department of Plant Resources (Ministry of Forest and Environment) in collaboration with the Royal Botanic Garden Edinburgh, UK.

The inaugural session was chaired by Prof. Mohan Siwakoti and the technical session by Prof. Mohan Prasad Panthi. There were four technical papers presented during the workshop by Dr. Bharat Babu Shrestha (CDB, TU), Mr. Tirtha Raj Pandey (KATH, Godawari), Dr. Suresh Kumar Ghimire (CDB, TU) and Dr. Nakul Chettri (ICIMOD). Prof. Ram N Jha (Assistant Dean, IOST, TU), Dr. Deepak Kharal (Director General, Department of Forest Research and Survey), Mr. Sanjeek K Rai (Director General, Department of Plant Resources), and other participants expressed their opinion during the workshop.

The workshop was participated by 53 participants from Ministry of Forest and Environment, Ministry of Agriculture, Department of Forest Research and Survey, Department of National Park and Wildlife Reserve, Department of Forests, Central Departments of Tribhuvan University Botany, Zoology, Environment, Natural History Museum of Tribhuvan University, Nepal Academy of Science and Technology, National Gene Bank, IUCN Nepal, ICIMOD, Biodiversity International, Forest Action, etc.

AWARENESS PROGRAM

Mikania removal program

About 25 students of M.Sc. botany participated Mikania removal program organized on Biodiversity day (Dec.

29, 2017) at Baireni, Dhading. The main objective of the program was to make communities aware of the future consequences of the spread of noxious invasive weed like *Mikania micrantha* (mile-a-minute). Dr. B. B. Shrestha led the students and they interacted with official of the forest range post, local people and secondary level students.



DEPARTMENTAL COMMITTEES

To fulfil the need of the department and improve its quality following committees were formed:

INTERNAL QUALITY ASSURANCE COMMITTEE

- Prof. Dr. Mohan Siwakoti
- Prof. Dr. Mohan Panthi
- Prof. Dr. Sangeeta Rajbhandary
- Prof. Dr. Ram Kailash Prasad Yadav
- Prof. Dr. Bijaya Pant
- Dr. Suresh Kumar Ghimire

STUDENT SCHOLARSHIP COMMITTEE

Prof. Dr. Mohan Siwakoti
Prof. Dr. Mohan Prasad Panthi
Prof. Dr. Sangeeta Rajbhandary
Mr. Prakash Krishna Karmacharya (Account officer)
Mr. Min Bahadur Khatri (Section Officer)
Mr. Janak Parajuli (Senior Administrative Assistant)
Mr. Benup Raj Adhikari (BOSS President -student representative).

EXAMINATION COMMITTEE

Prof. Dr. Mohan Siwakoti
Dr. Sanjay Kumar Jha
Mr. Mukti Ram Paudel

EDUCATION INFORMATION MANAGEMENT SYSTEM COMMITTEE

Prof. Dr. Mohan Siwakoti
Dr. Lal Bahadur Thapa
Dr. Narayan Prasad Ghimire
Ms Radha Sharma

STUDENTS CARRIER COUNSELLING COMMITTEE

Prof. Dr. Bijaya Pant
Prof. Dr. Haridatta Bhattarai
Dr. Bharat Babu Shrestha

DEPARTMENT PHYSICAL PROPERTIES SAMPARICHHYAN COMMITTEE

Prof. Dr. Mohan Siwakoti
Prof. Dr. Mohan Panthi
Mr. Prakash Krishna Karmacharya (Account officer)
Mr. Min Bahadur Khatri (Section Officer)
Mr. Janak Ram Parajuli (Administration section)

PROCUREMENT COMMITTEE FOR PURCHASE OF CHEMICALS AND SCIENTIFIC EQUIPMENT

Prof. Dr. Mohan Siwakoti
Dr. Bharat Babu Shrestha
Dr. Sanjay Kumar Jha
Dr. Giri Prasad Joshi
Mr. Prakash Krishna Karmacharya
Mr. Min Bahadur Khatri
Mr. Shailendra Kumar Singh

NOMINATION

Dr. S.K. Jha has been nominated as an Editorial Board member in January 28, 2017 for an International Journal of Tropical Plant Research, India.

Prof. Dr. M.P. Panthi has been appointed as a member of Executive Council, Tribhuvan University among the University Professors, on Baishak 5. 2075 and his

appointment was approved from TU Senate under the Chairmanship of Chancellor Hon. PM K.P. Sharma Oli on Ashwin 2, 2075.

Prof. Dr. Bijaya Pant has been nominated as Vice president, Species Survival Commission (SSC), IUCN, Nepal, 2018. Prof. Pant has also been nominated as Board Member of Science and Technology, refinement of system and planning. Ministry of education, Science and technology, Government of Nepal, 2018.

RESEARCH GRANTS/PROJECTS

“**Strengthening capacities for implementation of the Nagoya Protocol in Nepal**”(2017-2018). A project for the documentation of Plant Biodiversity and related Traditional knowledge in Kaski and Dolkha districts, Nepal. Collaboration between Ministry of Forests and Environment, IUCN Nepal and Central Department of Nepal. Team: Prof. Dr. Mohan Siwakoti (Co-ordinator), members. Prof. Dr. Mohan Prasad Panthi, Prof. Dr. Sangeeta Rajbhandary, Dr. Suresh Kumar Ghimire and students Ashis Prakriti Dhital, Bijaya Khadka, Dhurba Khakurel, and Sangram Karki.

Educational Testing Service (ETS): The Central Department of Botany was provided sub-award from The Open University, UK as a part of research project ‘Researching English academic reading demands in content courses in two contrasting English-medium university domains (Nepal and Sweden) with reference to the potential role of TOEFL iBT reading tests’ funded by Educational Testing Service, USA. The project accessed English academic readings of MSc (Kirtipur) and BBS (Public Youth Campus) students of Tribhuvan University. **Dr. Bharat Babu Shrestha** coordinated the project activities in Nepal.

“**Mobilizing occurrence data of alien and endemic plant species of Nepal**” Funded by Biodiversity Information Fund for Asia (BIFA) program of the Global Biodiversity Information Facility (GBIF), Denmark. Team: PI – **Prof. Mohan Siwakoti**, Co-PI – Sanjeev K Rai, Coordinator – **Dr. Bharat B Shrestha**, members – Dr. **Suresh K Ghimire**, Kalpana Sharma-Dhakal, Tirtha R Pandey, Dr. Bhaskar Adhikari and Dr. Mark Watson. Research assistants: Yagya Raj Paneru and Ganesh Dutt Joshi.

“**Phytochemical Screening and Evaluation of Antioxidant and Antimicrobial Efficacy of Termitophilous Fungi**”. Funding Agency: University Grants Commission, Sanathimi, Bhaktapur, Nepal. Team Leader: Dr. H.P. Aryal and A.P. Joshi (2018-2020).

Botany Museum: Funded by B.P. Koirala Memorial Planetarium Observatory and Science Museum, Kirtipur, Kathmandu, Government of Nepal-2075. Team Leader- **Dr. Hari Prasad Aryal** and **Dr. Lal Bhadur Thapa**.

Faculty Research Grants 2074/075: Alien Plant Invasion in Nepal: Mechanisms, Impacts and Solutions. Funding

Agency: University Grants Commission, Sanothimi, Bhaktapur, Nepal. Team: PI: Dr. **Lal B Thapa**.

Faculty Research Grants 2074/075: Species colonization pattern along glacier forelands of Bhimtang Area, Manang, Central Nepal, funded by UGC Faculty Research Grants 2073-74 (Award No. FRG-73/74-S & T-03). PI: **Dr. Chitra B Baniya**, co-investigator Mr Pitamber Pant, Lecturer, Trichandra Multiple college.

Prof Dr Hari Datta Bhattarai has been awarded by Research Renew Stay fellowship of University of Tuebingen, Germany, from 15/08/2018 to 14/11/2018. The fellowship is funded by Alexander von Humboldt Foundation, Germany.

IFS Grants: Ms. Anju Sharma, PhD scholar of this Department has received a research grant from the International Foundation for Science (IFS), Sweden to work on 'Functional plant traits of *Ageratina adenophora* (Asteraceae) along environmental gradients and their response to simulated warming'. Ms. Sharma is working under the supervision of Dr. Bharat Babu Shrestha and Prof. Pramod Kumar Jha.

IPMIL-USAID, USA Funding Project entitled "Assessment of Invasive Alien Species Distribution in the Chitwan-Annapurna-Landscape (CHAL) Region, Nepal with the Application of Satellite Imageries" with objectives to (i) map the habitat distribution of the major IAS over the time between 1990 and 2017, (ii) to identify the high potential spatial location for most common IAS through Geo-Information-based multi-criteria analysis and (iii) to draw a trend of distribution of IAS over the time and develop the linkage of IAS distribution and climate change as a proxy indicator. Prof. P.K. Jha is Principal Investigator and Project Coordinator. The project is supporting five PhD students and five M. Sc. Students (Sita Gyawali, Shrijana Poudel, Himal Younzan, Sandeep Dhakal and Abhishek Singh). Prof. P.K. Jha, Prof. M. Siwakoti, Prof. K.P. Poudel, Dr. B.B. Shrestha, Dr. A. Devkota and Dr. N.P. Ghimire are involved as Supervisors and Co-Supervisors.

RESEARCH GRANTS FOR STUDENTS (2017-2018)

University Grants Commission for PhD students

Sunita Shrestha: Systematic study of the genus *Aster* L. (Asteraceae) of Nepal. (2018-2021) (Supervisor: Prof. Dr. S. Rajbhandary and Co-supervisor: Dr. G.P. Joshi).

University Grants Commission for M.Sc. students

Menuka Paudel: Floristic composition and diversity of bryophytes along an altitudinal gradient in Kailali, west Nepal. (2018-2019) (Supervisors: Prof. Dr. S. Rajbhandary and Dr. G.P. Joshi).

Illina Bajracharya: Vascular plant colonization along the Gangapurna Glacier Foreland Manang, Nepal. (2018-2019) (Supervisor: Dr. C.B. Baniya).

Priyanka Shah: Study of mushroom diversity and ethnomycology in Chitlang. (2018-2019) (Supervisor: Dr. H.P. Aryal).

Mamita Shakya: Soil development and microbial colonization pattern along the Gangapurna Glacier Foreland Manang, Nepal. (2018-2019) (Supervisor: Dr. C.B. Baniya).

Laxmi Dhakal: Bioprospecting of different species of *Arisaema* from Kathmandu Nepal. (2018-2019) (Supervisors: Dr. D.R. Pant and Dr. G.P. Joshi).

Srijana Adhikari: Antioxidant activity of tissue culture raised *Dendrobium amoemum* Wall.ex Lindl. (2018-2019) (Supervisor: Mr. M.R. Poudel).

Global Taxonomic Initiative Grant (GTI) and M.Sc. Thesis Grant on Research of *Swertia* from Department of Plant Resources

Hira Shova Shrestha: Floristic study of fern and fern allies in altitudinal gradient from Besishahar to lower Manang, western Nepal. (2017) (Supervisor: Prof. Dr. S. Rajbhandary).

Sunita Shrestha: Taxonomic study of the genus *Aster* L. (Asteraceae) of Nepal. (2017) (Supervisor: Prof. Dr. S. Rajbhandary and Co-supervisor: Dr. M.B. Rokaya).

Manju Neupane: Taxonomic study of the genus *Thalictrum* L. (Ranunculaceae) in Nepal. (2017) (Supervisor: Prof. Dr. S. Rajbhandary).

Anjana Kharbuja: Grass flora along altitudinal gradient of the Phulchoki hill, Central Nepal. (2018) (Supervisors: Prof. Dr. S. Rajbhandary and Dr. K.R. Rajbhandari).

Puja Joshi: Taxonomy of the genus *Setaria* P. Beauv. and *Pennisetum* Rich. (Poaceae) of Nepal. (2018) (Supervisors: Prof. Dr. S. Rajbhandary and Dr. G.P. Joshi).

Kisha Thapa Chhetri: Taxonomic Study of the Genus *Hoya* R.Br. (Apocynaceae) in Nepal: (2018) (Supervisor: Prof. Dr. S. Rajbhandary).

Sirjana Khatri: Taxonomic study of the genus *Swertia* L.(Gentianaceae) in Nepal. (2017-2018) (Supervisor: Prof. Dr. S. Rajbhandary).

Chinese Academy of Sciences Grant

Subash Nyaupane: Taxonomy of two Grass Genera *Digitaria* Haller and *Paspalum* L. (Poaceae) of Nepal. (2017-2018) (Supervisor: Prof. Dr. S. Rajbhandary and Co-supervisor: Dr. K.R. Rajbhandari).

IUCN-ABS Project

Ashish P. Dhital: Exploration of traditional knowledge of plant used by Tamang community of Jugu, Dolakha district. (2017-2018) (Supervisor: Prof. Dr. M. Siwakoti and Co-supervisor: Mr. Dhananjaya Lamichhane)

Bijay Khadka: Exploration of traditional knowledge associated with medicinal plants use in Lwangghalel, Kaski district, Nepal. (2017-2018) (Supervisor: Prof. Dr. M. Panthi and Co-supervisor: Mr. Sagar Rimal)

Dhruba Khakurel: Documentation of plant biodiversity and related traditional knowledge in Parche VDC, Madi Rural Municipality of Kaski district, Nepal. (2017-2018) (Supervisor: Prof. Dr. S. Rajbhandary and Co-supervisor: Dr. Yadav Uprety).

Sangram Karki: Documentation of traditional knowledge related to plant use in Jirel communities in Gaurishankar Rural Municipality of Dolakha district, Central Nepal. (2017-2018) (Supervisor: Dr. S.K. Ghimire and Co-supervisor: Ms. Madhu Ghimire).

Institute for Social and Environmental Transition (ISET) – Nepal Grant

Seema Baniya: People's perception on climate change and drought tolerance in rice landraces of Gorkha District, Nepal: Role of proline and fungal colonization. (2017-2018) (Supervisor: Dr. L.B. Thapa).

Jiban Sapkota: Invasion mechanisms of alien plant species in the Kalika Community Forest of Kailali District. (2018-2019) (Supervisor: Dr. L.B. Thapa).

Hariyo Ban Ph.D. Research Grant from WWF Nepal

Hom Pathak: Impacts of invasive alien plant species on ecosystem services of the lake cluster of Pokhara valley, Nepal. (2018-2019) (Supervisor: Dr. B.B. Shrestha and Co-Supervisor: Dr. Dinesh Raj Bhujju).

Hariyo Ban M.Sc. Research Grant from WWF Nepal

Suneeta Bhatt: Distribution mapping and impact assessment of invasive plant species in Bardia National Park, west Nepal. (2018) (Supervisor: Dr. B.B. Shrestha).

Prativa Paneru: Effect of Grazing exclusion on soil properties and vegetation characteristics in *Parthenium hysterophorus* invaded grassland of Hetauda, Central Nepal. (2018) (Supervisor: Dr. A. Devkota).

Chure-Terai Madesh Conservation Development, M.Sc. Research Grant from President Chure-Terai Madesh Conservation Development Board, GoN

Ashika Bhusal: Physico-chemical characteristics and macrophytes of lakes of Chitwan National Park, Central Nepal. (2017-2018) (Supervisor: Dr. A. Devkota).

Shova Raut: Dispersal, impacts and mitigation measures of invasive species giant African land snail *Achatina fulica* (Férussac, 1821) in Dang valley, Nepal. (2017-2018) (Supervisor: Dr. Prem Buddha and Co-Supervisor: Dr. B.B. Shrestha).

Bishna Sharma: Ecology and Management of Ghodaghodi Lake, Far-West, Kailali, Nepal. (2017-2018) (Supervisor: Dr. A. Devkota).

FIELD EXCURSIONS

Field Trip of M.Sc. (Botany) students



M.Sc. II semester students went for botanical excursion to Mustang Valley from May 2-10, 2018. The objective of the field trip was to teach the students the techniques of plant collection, herbarium preparation for higher plants and analysis of the vegetational biodiversity and ecology. Another objectives was also to make the students understand the plant diversity of temperate to alpine region in natural condition and make them feel the difference in the vegetation pattern and topography of the place. The team was accompanied by Dr. S.K. Ghimire, Dr. C.B. Baniya, Dr. N.P. Ghimire and Mr. K.R. Subedi (Gardener).

M.Sc. first semester students visited Shimbhanjang, Daman through Chitlang to Thankot, Central Nepal from July 8-12, 2017 (Ashar 24-28, 2075). The trip was mainly focus to teach the students to make them understand the plant diversity of lower group of plants (algae, mushroom, bryophytes, and pteridophytes) of subtropical to temperate region in natural condition. They were taught, the technique of plant collection and preparing herbarium specimens for ferns and fern allies, bryophytes and mushrooms. The students collected species of bryophytes, pteridophytes and mushrooms. The trip was led by Dr. S.K. Jha along with Dr. L.B. Thapa and plant collector Mr. S.R. Bista.



TALK PROGRAM

Prof. Dr. Krishna K. Shrestha former Head of the department delivered a talk on the topic 'Flora of Nepal:

Explorations to Publication’, and also introduced his book entitled “Handbook of Flowering Plants of Nepal” on April 3rd, 2018 (Chaitra 3, 2075).

Dr. K.V. Sankaran, Former Director of Kerala Forest Research Institute, India delivered a lecture on ‘Management options for invasive alien plants in Indian forests’ on July 20, 2018 (Srawan 4, 2075).

Prof. Anil Shrestha of the Department of Plant Science, California State University, USA delivered a talk on ‘Chemical warfare on weeds: Who is winning the battle?’ on August 3, 2018 (Srawan 18, 2075).

Dr. Bandan Chakraborty from Wageningen University, The Netherlands, delivered a talk on ‘Microtubule of dynamics in realistically shaped plant cells’ on September 7, 2018 (Bhadra 22, 2075).

Dr. Uttam Babu Shrestha, a Research Fellow at the University of Southern Queensland, Australia delivered a talk on “Global change at our doorstep: How climate, forests, species and cities are changing in Nepal?” on November 18, 2018 (Mangsir 2, 2075).

Dr. M.C. Kharkwal, former Principal Scientist of ICAR, New Delhi and President of Indian Society of Genetics and Plant Breeding delivered a talk on “Origin of Agriculture and Global Status of GM crops” on November 18, 2018 (Mangsir 2, 2075).

VISITS

Prof. Dr. Mohan Siwakoti and Prof. Emiratus Dr. Pramod Kumar Jha joined the team of Prof. Dr. Tirth Raj Khaniya (vice chancellor, TU) on March 11-14, 2018 for visiting the Jawaharlal Nehru University, New Delhi to discuss the academic collaboration and identify the areas of cooperation. A meeting was held between the Vice-Chancellor of Tribhuvan University and Jawaharlal Nehru University. The Vice-Chancellor led team also visited the South Asian University, New Delhi and met the university authorities and Nepali students.



VISITING RESEARCH SCHOLAR

With the invitation of Central Department of Botany, Tribhuvan University (CDBTU) Dr. Shinji MIYAMOTO, Associate Professor, Department of Biosphere-Geosphere

Science, Faculty of Biosphere-Geosphere Science, Okayama University of Science, Japan served as a Visiting Research Scholar at CDBTU from May 1 to August 31, 2018.



WORKSHOP/SEMINAR/ CONFERENCE ATTENDED (2017-2018)

Dr. H.P. Aryal, Dr. L.B. Thapa, Mr. M. R. Paudel attended the “International Conference on Wild Harvest, Governance and Livelihood in Asia” from Nov. 30 - Dec 2, 2017, Kathmandu, Nepal and presented their papers entitled.

Dr. H.P. Aryal: “Some wild mushrooms of Udaypur District, East Nepal”.

Dr. L.B. Thapa: “Wild edible and medicinal plants for livelihood of Raji indigenous people in western Nepal”.

Mr. M. R. Paudel: “Exploration of Orchid Diversity and Conservation Status in Selected Community Forests of Makawanpur District, Central Nepal”.

Dr. B. B. Shrestha participated as Resource person in a “Training Workshop on Scientific Methodology and Scientific Proposal Writing” from December 4-8, 2017. The program was organized by International Foundation for Science (IFS), Sweden and Nepal Center for Contemporary Research (NCCR) in Kathmandu Nepal

Prof. Dr. S. Rajbhandary Attended the 30th Anniversary of Institute of Science and technology, Tribhuvan University at Memorial Hall, TU on January 3th, 2018.

Dr. B. B. Shrestha participated a mid-term review meeting of Darwin Initiative project (Science-based Interventions Reversing Negative Impacts of Invasive Plants in Nepal) from January 17-18, 2018 in Kathmandu and presented a paper on ‘Diversity and Distribution of Invasive Alien Plant Species in Nepal: Darwin Project Update’.

Dr. B. B. Shrestha presented a paper on ‘Management of Invasive alien plants in Nepal: Challenges and opportunities’ during a workshop organized for local communities in Bardia (Baniyabhar village) by Nepal Academy of Science and Technology and supported by Darwin Initiative Project from January 22-24, 2018.

Prof. Dr. M. Siwakoti and **Prof. Dr. S. Rajbhandary** attended the “Policy review and gap analysis related to Access and Benefit Sharing of Genetic Resources (ABS) in Nepal” on 26 January, 2018 (Magh 12, 2074) to share and discuss policy review related with ABS. The program was organized by Biodiversity and Environment Division, Ministry of Forests and Soil Conservation (MoFSC).

Prof. Dr. S. Rajbhandary attended the program on “Global Taxonomic Initiative Program for supporting

the Universities” on January 29, 2018. The program was organized by Department of Plant Resources, Thapathali.

Prof. Dr. S. Rajbhandary attended the International Winter School Lecture Series “Biodiversity, Ethnoecology and Bioprospecting in Nepal Himalaya” from January 29 – February 8, 2018 organized by Research Centre for Applied Science & Technology (RECAST), Tribhuvan University, Kirtipur, Kathmandu and Department of Agronomy, Food, Natural Resource and Environment (DAFNE), and Padova University, Italy and presented the paper entitled “Ethnobotany of Nepal: trends and perspectives” on January 30, 2018.

Prof. Dr. M. Siwakoti and **Mr. M. R. Paudel** attended the 7th International Botanical Conference at Dhaka on February 3, 2018 and presented papers on:

Prof. Dr. M. Siwakoti: “Distribution status of Invasive Alien Plant Species in Central Nepal”.

Mr. M. R. Paudel: “Antibacterial and Cytotoxic activities of four *Dendrobium*”.

Prof. Dr. S. Rajbhandary attended the “Orientation Program for PhD students” on February 18, 2018. The program was organised by Institute of Science and technology, Tribhuvan University.

Dr. S.K. Jha have participated the International training workshop on “Integrated pest management from March 4-23, 2018 at MASAV, ISRAEL and presented a paper entitle “Present Status of Integrated Pest Management in Nepal”.

Prof. Dr. B. Pant attended the 3rd International Orchid Symposium (IOS2018), Seoul Korea, from March 7-9, 2018. And presented a paper entitled “Various culture techniques for mass propagation of medicinal orchids of Nepal”.

Prof. Dr. S. Rajbhandary attended the “Citizen Scientist Training at Sikles-1 (Parche)” organised by IUCN from March 18 – 21, 2018. Paper entitled “Biodiversity, NTFP, Traditional Knowledge and Documentation” was presented in the program on March 18, 2018.

Prof. Dr. M. Siwakoti and **Prof. Dr. S. Rajbhandary** attended the “Book Launching Program of Department of Plant Resources” in Kathmandu on March 23, 2018 and reviewed the book entitled “Plants of Ramapithecus Botanical Garden”.

Prof. Dr. S. Rajbhandary attended the 19th Plant Resources Day 2074 and 58th Anniversary of Department of Plant Resources (DPR), National Herbarium and Plant Laboratories, Godawari on April 9, 2018 (Chaitra 26, 2074) and delivered a paper “Taxonomic Revision”

Prof. Dr. S. Rajbhandary attended the program “Strengthening capacities for implementation of the Nagoya Protocol in Nepal” Training of Trainers on “Access and Benefit Sharing from Genetic Resources and Associated Traditional Knowledge” from April 24-27, 2018 (Baishak 11-14, 2075). The program is organized by Ministry of Forest and Environmentm IUCN and Gef. Paper entitled

“Biological and genetic resources, and associated traditional knowledge; bioprospecting and biopiracy” was presented in the program on April 25, 2018.

Prof. Dr. B. Pant presented a paper entitled ‘ Prospect of Plant Biotechnology’, on April 24, 2018, at Nepal Academy of Science and technology on DNA Day.

Prof. Dr. R.K.P. Yadav and **Dr. C. P. Pokhrel** attended the “2018 Seminar on Green Development under the Belt & Road Initiative” sponsored by the Ministry of Commerce, P.R. China and organized by the Academy for International Business Officials, MOFCOM, P.R. China from May 11 – 31, 2018 in Beijing, P.R. China.

Prof. Dr. S. Rajbhandary and **Dr. L.B. Thapa** participated in a workshop on “**Impact Assessment of Invasive Alien Plant Species of Nepal**” held on May 17-18, 2018 in Kathmandu, organized by Nepal Academy of Science and Technology, Khumaltar, Lalitpur, Nepal and Darwin Initiative Project on Invasive Plants, Royal Botanic Garden Edinburgh, UK.

Dr. C.B. Baniya participated as a resources person in a “Training Workshop’ organized by Central Department of Environmental sciences on Biostatistics through package R for University Teachers held from May 24-29, 2018.

Prof. Dr. S. Rajbhandary attended the program “Strengthening capacities for implementation of the Nagoya Protocol in Nepal” Training of Trainers on “Access and Benefit Sharing from Genetic Resources and Associated Traditional Knowledge” from May 28-31, 2018 (Jestha 14-17, 2075). The program is organized by Ministry of Forest and Environmentm IUCN and Gef. Paper entitled “Biological and genetic resources, and associated traditional knowledge; bioprospecting and biopiracy” was presented in the program on May 29, 2018.

Prof. Dr. P.K. Jha, Principal Investigator and Project Coordinator of research project entitled “Assessment of Invasive Alien Species Distribution in the Chitwan-Annapurna-Landscape (CHAL) Region, Nepal with the Application of Satellite Imageries” attended the Project Technical Committee meeting at PhonmPenh, Cambodia on May 28-30, 2018 and presented the progress and planned activities of the project to PTC and Project Advisory Committee (PAC) members.

Dr. B. B. Shrestha participated ‘Biodiversity Information Fund for Asia (BIFA) Data Mobilization Workshop’ from June 4-8, 2018. The program was organized by Global Biodiversity Information Facility GBIF) at the Institute of Botany, Chinese Academy of Science in Beijing, China

Dr. L.B. Thapa participated in “The 2018 Summer Course on Climate Model Simulations” held from June 17-30, 2018 in Beijing, China. The program was organized by Third Pole Environment (TPE) Institute of Tibetan Plateau Research, Chinese Academy of Sciences, Beijing, China.

Dr. C.B. Baniya participated as a resources person in a ‘Training on Experimental Design and Data Analysis in Plant

Sciences’, organized by Department of Plant Resources on June 19, 2018.

Prof. Dr. B. Pant participate in a “Workshop on Teaching and Research Methodologies” and delivered a lecture entitled “Thesis and report writing” on June 23rd, 2018 in RECAST, Kathmandu.

Dr. C.B. Baniya participated as a resources person in a ‘Training Workshop’ organized by RECAST, TU, on Scientific Writing on June 25, 2018.

Dr. S. Pradhan participate in a workshop on “Invention, Patenting and Product Marketing” from June 26-27, 2018. The program was organized by Research Centre for Applied Science and Technology (RECAST), Tribhuvan University and Department of Industry (DOI), Government of Nepal.

Prof. Dr. S. Rajbhandary attended the “9th National Symposium and the 8th Asia-Pacific Forum on Ethnobotany” from July 13-15, 2018 held in Kunming, Yunnan, China. The meeting was organized by Chinese Association of Ethnobotany (CAE), Kunming Institute of Botany (KIB), Chinese Academy of Sciences (CAS), China. Paper entitled “Ethnobotany and Medicinal Plants of Nepal” was presented.

Prof. Dr. M. Panthi attended a seminar on “Botanical Research and Education in Nepal” on July 13, 2018. The program was jointly organized by Natural History Museum and Institute for Social and Environmental Research Nepal at the NHM, Swayambhu. Prof. Panthi presented a paper entitled ‘Brief history of botany education and its development in Nepal and highlighted on present status of botanical research in TU and DPR’.

Prof. Dr. R.K.P. Yadav and **Dr. C. P. Pokhrel** participated in the training program on “Item Writing Training” organized by the National Examination Board (NEB), Nepal in collaboration with the World Bank, Kathmandu from July 18 – 22, 2018.

Prof. Dr. S. Rajbhandary attended the program “Refresher Workshop on Teaching and Research Methodology” from August 31 – September 1, 2018 (Bhadra 15-16, 2075). The program was organized by Institute of Science and Technology (IoST-TU), RECAST-TU and Kathmandu Centre for Research and Education (KCRE), Chinese Academy of Sciences (CAS-TU). Paper entitled “Preparation of Research Proposal” was presented in the program on September 1, 2018.

Dr. B. B. Shrestha participated and presented a paper (Mobilizing occurrence data of alien and endemic plant species of Nepal) during ‘2018 Global Biodiversity Information Facility (GBIF) Asia Regional Node Meeting’ organized by GBIF, International Center for Integrated Mountain Development (ICIMOD) and Ministry of Forest and Environment (Government of Nepal) from September 17-18, 2018 in Kathmandu.

Prof. Dr. P.K. Jha attended the ‘International Conference on Biological Control’, held at Bengaluru, India on September 27-29, 2018. He presented a paper entitled “Invasive Plant

Species in Nepal” and also chaired a technical session in the conference on November 28.

Dr. B. B. Shrestha presented a paper on ‘Invasive alien species in Nepal: Agendas for research and management’ in a symposium on ‘Biological Invasion in a Changing World’ organized during a third international conference on ‘Mountain in a Changing World’ from October 9-10, 2018 in Kathmandu. Dr. Shrestha was also Co-convenor of the Symposium.

PH. D. ACTIVITIES

Ph.D. (Botany) Degree awarded (2018)

Bhattarai, K.P. (2018) Decomposition nutrient release in leaf litter and N-mineralization in selected sal forest of eastern Nepal (Supervisor: Prof. Dr. T.N. Mandal). (Date of registration: **2068-9-13**).

Ph.D. Submission

Rai, S.K. Ecological modelling of vascular plant diversity under different climate and land use change scenarios in Nepalese Himalaya (Supervisors: Prof. Dr. K. K. Shrestha, and Prof. Dr. Christoph Scheidegger). (Date of registration: **2068-3-3**).

Poudel, M.R. Biological activities of in-vivo and in-vitro plant materials of some *Dendrobium* species. (Supervisor: Prof. Dr. B. Pant). (Date of registration: 2070-03-16)

Ph.D. Students

Shrestha, R. Phytochemical analysis and biological screening of *Asparagus* species (Asparagaceae) along the elevation gradients of Nepal (Supervisor: Prof. Dr. K.K. Shrestha). (Date of registration: **2067-7-17**).

Pradhan, B.M. Taxonomy of subtribe *Dendrobiinae* Lindley (Orchidaceae) of Nepal Himalaya (Supervisor: Prof. Dr. D.M. Bajracharya). (Date of registration: **2068-3-16**). Re-registration.

Mallick, B.D. Seed biology of some weeds of winter crops in Kathmandu Valley (Supervisor: Prof. Dr. B. Acharya and Co-supervisor Prof. M. Saquib). (Date of registration: **2068-11-18**).

Basnet, B.K. *Dendrobium* species in Nepal: Diversity, trade and economic significance. (Supervisor: Prof. Dr. M. Siwakoti). (Date of registration: **2069-12-09**)

Chand, D. B. Timing of phenological shifts affected to the water stress in some tree species under varying disturbance level in western Nepal. (Supervisor: Prof. Dr. Kanta Rijal and Co-Supervisor Prof. Dr. P.K. Jha). (Date of registration: **2070-07-12**).

Hamal, J.P. Assessment of trees in Kathmandu valley for their air pollution tolerance index and heavy metal bio-monitoring ability. (Supervisor: Prof. Dr. M.K. Chhetri). (Date of registration: **2070-07-24**).

Sangroula, M. Floristics study and vegetative analysis of Panchthar District, East Nepal. (Supervisor: Prof. Dr. M. Siwakoti and Co-Supervisor Dr. C.B. Baniya) (Date of registration: **2070-11-26**).

Pokharel, B. Ecophysiology of the 'Greater Duckweed' *Spirodela ptyrhiza* (L.) Schleiden. (Supervisor: Prof. Dr. S.N. Jha). (Date of registration: **2071-3-12**).

Shrestha, B. Trees outside forest Kathmandu valley. (Supervisor: Prof. Dr. R.K.P. Yadav and Co-Supervisor Dr. B.K. Sharma). (Date of registration: **2071-5-15**).

Nemkul, C.M. Ethnobotany and antimicrobial study of selected medicinal plants of Magar community in Nawalparasi district, Nepal. (Supervisor: Dr. I. Shrestha and Co-Supervisor: Dr. G. B. Bajracharya). (Date of registration: **2071-09-01**).

Chapagain, D.J. Population ecology and harvesting sustainability of some important medicinal and aromatic plants in Annapurna Manaslu Landscape of Nepal Himalaya. (Supervisor: Dr. S.K. Ghimire, and Co-Supervisor: Dr. Henreik Meilby and Dr. C.B. Baniya) (Date of registration: **2071-9-18**).

Paudel, M.R. Population ecology and harvesting sustainability of some important medicinal and aromatic plants species in Langtang National Park, Central Nepal. (Supervisor: Dr. S.K. Ghimire, Co-Supervisor: Dr. Henreik Meilby and Dr. B.B. Shrestha) (Date of registration: 2071-9-18).

Karmacharya, N. Study of lichen diversity of ascertain some lichens as bioindicators of heavy pollution. (Supervisor: Prof. Dr. M. K. Chettri) (Date of registration: **2072-5-17**).

Shah, S. Isolation and identification of endophytic fungi from three *Dendrobium* species and study their plant growth activities and biological activities. (Supervisor: Prof. Dr. B. Pant). (Date of registration: **2072-8-15**).

Shrestha, S.D. Effects of air pollution on selected plants along roadsides in Kathmandu valley. (Supervisor: Dr. A. Devkota and Co-supervisor: Prof. Dr. P.K. Jha). (Date of registration: **2073-01-31**).

Luitel, D.R. Impact of climate change on distribution, production and cropping pattern of Finger millet and Buckwheat along altitudinal gradient in Chitwan-Annapurna Landscape, Nepal (Supervisor: Prof. M. Siwakoti and Co-supervisors: Prof. P.K. Jha and Dr. Ajay Jha) (Date of registration: **2073-2-7**).

Maharjan, S. Ecology and management of *Parthenium hysterophorus* through biological methods in Central Nepal (Supervisor: Dr. A. Devkota and Co-Supervisors: Prof. P.K. Jha and Dr. Jose Anadon) (Date of registration: **2073-2-7**).

Poudel, A. Ecology and impact of an invasive species *Ageratina adenophora* in Chitwan and Annapurna Landscape, Nepal (Supervisor: Dr. B.B Shrestha and Co-supervisor: Prof. P.K. Jha and Dr. David Lohman) (Date of registration: **2073-3-1**).

Shrestha, S.S. Phytochemical analysis and bioactive compounds of some selected medicinal plants of Nepal. (Supervisor: Prof. Dr. S. Rajbhandary and Co-supervisor: Dr. D.R. Pant). (Date of registration: **2073-4-09**).

Phuyal, N. Ecology and Phytochemistry of *Zanthoxylum armatum* DC. (Supervisor: Prof. Dr. S. Rajbhandary and Co-supervisor: Prof. Dr. P.K. Jha and Dr. P.P. Ratauri). (Date of registration: **2073-7-24**).

Pandey, S. In vitro mass propagation and enhancement strategies for the production of bioactive metabolite from *Tinospora cordifolia* (Willd.) Hook.f.& Thoms and *Sinopodophyllum hexandrum* (Royle) T.S.Ying. (Supervisor: Prof. Dr. B. Pant). (Date of registration: **2073-11-1**).

Nepali, B.R. Species richness pattern in Arghakhachi and adjoining area Nepal. (Supervisor: Dr. C. B. Baniya and Co-Supervisor: Dr. John Skartveit) (Date of registration: **2073-12-15**).

Gautam, B. Vegetation composition, structural and patterns of diversity in Barandabhar forest of Chitwan District in different management regimes. (Supervisor: Prof. Dr. R. K.P. Yadav and Co-supervisor: Dr. B.K. Sharma). (Date of registration: **2074-02-17**).

Pathak, H. Diversity, distribution and impacts of invasive alien plant species in Lake Cluster and Associated Landscape in Pokhara valley, Nepal. (Supervisor: Dr. B.B. Shrestha and Co-supervisor: Dr. D. Bhujju). (Date of registration: **2074-10-28**).

Shrestha, S. Systematic Revision of the Genus *Aster* L. (Asteraceae) of Nepal. (Supervisor: Prof. Dr. S. Rajbhandary and Co-supervisor: Dr. G.P. Joshi). (Date of registration: **2074-11-02**).

RESEARCH PUBLICATIONS 2017 – 2018

Aryal, H.P. 2017. Macrofungi diversity and ethnomycological study in Palpa District of Nepal. Report submitted to University Grants Commission, Sanothimi, Bhaktapur, Nepal.

Aryal, H.P. 2017. Plant breeding. *Bouddhik Uddhyan*. Bhairahawa Multiple Campus, Tribhuvan University, Nepal. December, 2017 (Poush, 2074 BS). 7, 5-9.

Aryal, H.P. 2018. Disease and post harvest management practices of mushrooms, Nepal. *Ban Sanchar*. August, 2018 (Bhadra, 2075 BS). 2(3), 9-13.

Balami, S. and **L.B. Thapa**. 2017. Herbivory damage in native *Alnus nepalensis* and invasive *Ageratina adenophora*. *Botanica Orientalis* **10**: 7–11.

Balami, S., **L.B. Thapa**, **S.K. Jha**. 2017. Effect of invasive *Ageratina adenophora* on species richness and composition of saprotrophic and pathogenic soil fungi. *Biotropia*, **24**(3): 212–219. DOI:10.11598/btb. 2017. 24.3.702

Balami, S., **L.B. Thapa**, **S.K. Jha**. 2017. Sterilization effect of *Ageratina adenophora* invaded and un-invaded soils on

- seedling growth and development of native *Schima wallichii* in Nepal. *Physiological Ecology and Environmental Science*, **8**(1 & 2): 23-30.
- Baniya, R.K., **C.B. Baniya**, P. Mou and J. Ge. 2017. Prey selection by tiger (*Panthera tigris*) in Shuklaphanta Wildlife Reserve Nepal. *International Journal of Sciences*, 6:90-99.
- Bhandari, B. and **S.K. Jha**. 2017. Comparative study of macro fungi in different patches of Boshan Community Forest in Kathmandu, Central Nepal. *Botanica Orientalis* **11**: 43-48.
- Chongbang, T. B., C. Keller, M. Nobis, C. Scheidegger and **C. B. Baniya**. 2018. From natural forest to cultivated land: Lichen species diversity along land-use gradients in Kanchenjunga, Eastern Nepal. *Eco.mont*, **10**(1): 46-60.
- Chongbang, T.B., C. Keller, M. Nobis, C.Scheidegger and **C.B. Baniya**. 2018. From natural forest to cultivated land: Lichen species diversity along land-use gradients in Kanchenjunga, Eastern Nepal. *Eco.Mont– Journal on Protected Mountain Areas Research and Management*, **10** (1): 46-60.
- Das A.K., Oli B.N., Smith-Hall C., Rayamajhi S., **Ghimire S.** and Dhakal S.P. **2018** (eds.). *Wild Harvests, Governance, and Livelihoods in Asia: Proceedings from the International Conference held in Kathmandu 30 November to 2 December 2017*. Transiting to Green Growth Natural Resources in Nepal (TGGN), Kathmandu, Nepal.
- Devkota, A.** and A. Sahu. 2018. Assessment of antifungal activities of some invasive alien species of Aster family. *CIBTech Journal of Microbiology*, **7**(1): 15-24.
- Devkota, A.** and P.K. Jha. 2017. Genetic diversity in different populations of *Centella asiatica* (L.) urban growing in Nepal, based on morphological and RAPD markers. *Physiological Ecology and Environmental Science*, **8**(1&2): 1-11.
- Everard, M., N. Gupta, P.S. Chapagain, **B.B. Shrestha**, G. Preston and P. Tiwari. 2018. Can control of invasive vegetation improve water and rural livelihood security in Nepal? *Ecosystem Services*, **32**:125-133.
- Jha, S.K.** **2018**. Major diseases of mango in Nepal and their management. *Hamro Kalpabrichha*, **29**(325): 8-13.
- Jha, S.K.** and **L.B. Thapa**. 2018. Microfungi isolated from water hyacinth (*Eichhornia crassipes*) compost. *Bio Bulletin*, **4**(1): 43-47.
- Kafle G., I. Bhattarai-Sharma, **M. Siwakoti** and A.K. Shrestha. 2018. Demand, end-uses, and conservation of alpine medicinal plant *Neopicrorhiza scrophulariiflora* (Pennell) D. Y. Hong in Central Himalaya. *Hindawi Evidence-Based Complementary and Alternative Medicine*, Vol. 2018, Article ID 6024263, <https://doi.org/10.1155/2018/6024263>.
- Kafle, G., I. Bhattarai, A.K. Shrestha and **M. Siwakoti**. 2018. Consumers Caring Health with End Products (Ayurvedic Medicines) Containing *Neopicrorhiza scrophulariiflora* in Nepal. *International Journal of Ayurvedic Medicine*, **9**(2): 123-132.
- Kafle, G., I. Bhattarai (Sharma), **M. Siwakoti**, and A.K. Shrestha, 2018. In the search of end products of commercially important Medicinal Plants: A case study of yarsagumba (*Ophiocordyceps sinensis*) and bish (*Aconitum spicatum*). *Journal of Agriculture and Forestry University*, **2**: 231-239. Chitwan.
- Kunwar Chhetri, D. and **C.B. Baniya**. 2017. Floodplain succession pattern along Budhi-Rapti River bank, Chitwan, Nepal. *Botanica Orientalis – Journal of Plant Science*, **11**:12–26.
- Luitel, D.R., M. Siwakoti, and P.K. Jha. 2018. Relationship between climatic variables and Finger millet yield in Syangja, Central Nepal. *Journal of Forest and Livelihood*, **18**(1): 1-13.
- Mishra, N.B., K.P. Mainali, **B.B. Shrestha**, J. Radenz and D. Karki. 2018. Species-level vegetation mapping in a Himalayan treeline ecotone using unmanned aerial system (UAS) imagery. *Int. J. Geo-Inf.*, **7**, 445; doi:10.3390/ijgi7110445
- Moonlight, P.W. W. H. Ardi, L. A. Padilla, **S. Rajbhandary**, et.al. 2018. Dividing and conquering the fastest growing genus: Towards a natural sectional classification of the megadiverse genus *Begonia* (Begoniaceae). *Taxon*, **67** (2): 267–323.
- Pandey, B. and **A. Devkota**. 2017. Evaluation of bacteriological parameters and heavy metal contents on water of Tinau River, Butwal, Rupandehi, Nepal. *Our Nature*, **15**(1-2): 1-6. DOI: <http://dx.doi.org/10.3126/on.v15i1-2.18787>.
- Pant B., **Paudel M.R.**, Chand M.B., S. Pradhan, B.B. Malla and B.B. Raskoti. 2018. Orchid diversity in two community forests of Makawanpur district, central Nepal. *Journal of Threatened Taxa*, **10**: 12523-12530.
- Pant, K.K.** 2018. Neglected vegetables of Nepal: Status and need for further research and utilization. *Indian journal of plant sciences*, **7**(1): 18-21.
- Pant, K.K.** and S.D. Joshi. 2017. *In vitro* morphogenesis of shoot induced callus of *Asparagus racemosus* Willd. into somatic embryoids. *International Journal of Technical Research and Science*. **2**(X): 637-641
- Pant, K.K.** and S.D. Joshi. 2018. *In vitro* bud induction from the nodes of *Asparagus racemosus* Willd. and their germination behaviors. *International Journal of Technical research and Science*. **3**(II): 47-50.
- Paudel, G., T. K. Shrestha, **C. B. Baniya**, R. P. Lamsal, S. R. Baral, D. L. Kandel, B. B. Kalikote, M. Shrestha, A. Parajuli. 2018. Local criteria and indicators for non-timber forest products certification in Nepal. *International Journal of Forestry and Horticulture* **4** (3): 25-32.
- Paudel, M. R.**, M.B. Chand, B. Pant, and **B. Pant**, 2018. Antioxidant and cytotoxic activities of *Dendrobium moniliforme* extracts and the detection of related compounds by GC-MS. *BMC Complement. & Altern. Med.* **18** (1): 134...

- Paudel, M. R.**, N. Rajbanshi, A. Saha, S. Acharya, B. Pant, and **B. Pant**. 2018. Antibacterial activity of selected *Dendrobium* species against clinically isolated multiple drug resistant bacteria. *African Journal of Microbiology Research*. **12**(18) : 426-432.
- Paudel, M.R.**, M.B. Chand, and **B. Pant**. 2017. Cytotoxic activity of crude extracts of *Dendrobium amoenum* and detection of compounds by GC-MS. *Botanica orientalis*, **11**: 38-42.
- Phuyal, N., P.K. Jha, P.P. Raturi, **S. Rajbhandary**. 2018. *Zanthoxylum armatum* DC: Current knowledge, gaps and opportunities in Nepal. *Journal of Ethnopharmacology*; <https://doi.org/10.1016/j.jep.2018.08.010>
- Pokharel, K. K., K. B. Basnet, T. C. Majupuria and **C. B. Baniya**. 2018. Correlations between fish assemblage structure and environment variables of the Seti Gandaki River Basin, Nepal. *Journal of Freshwater ecology*, **33**(1): 31-43, DOI:10.1080/02705060.2017.1399170.
- Pokharel, K. K., K. B. Basnet, T. C. Majupuria and **C. B. Baniya**. 2018. Environmental variables of the Seti Gandaki river basin, Pokhara, Nepal. *Journal of Institute of Science and Technology*, **22**(2): 129-139.
- Pokharel, K.K., K.B. Basnet, T.C. Majupuria and **C.B. Baniya**. 2018. Correlations between fish assemblage structure and environment variables of the Seti Gandaki River Basin, Nepal. *Journal of Freshwater ecology*, **33**(1): 31-43, DOI:10.1080/02705060.2017.1399170.
- Pokharel, K.K., K.B. Basnet, T.C. Majupuria and **C.B. Baniya**. 2018. Environmental variables of the Seti Gandaki river basin, Pokhara, Nepal. *Journal of Institute of Science and Technology*, **22**(2): 129-139.
- Rana, H.K., H. Sun, A. Paudel and **S. K. Ghimire**. 2018. *Saussurea ramchaudharyi* (Asteraceae), a new species from Nepal. *Phytotaxa*, **340** (3): 271–276.
- Regmi, S. and **S.K. Jha** 2018. Antifungal activity of plant essential oils against *Fusarium oxysporum* schlecht. and *Aspergillus niger* Vantiegh. from papaya. *International Journal of Current Trends in Science and Technology*, **8**(1):20196-20204. DOI: <http://currentsciences.info/10.15520/ctst.v8i01.233.pdf>
- Sharma, M. and **A. Devkota**. 2018. Allelopathic influences of *Artemisia dubia* Wall. ex. Besser on seed germination and seedling vigor of *Parthenium hysterophorus* L. *Journal of Institute of Science and Technology*, **22**(2): 117-128.
- Shrestha R., S. Shah and **B. Pant**. 2018. Identification of endophytic fungi from roots of two *Dendrobium* species and evaluation of their antibacterial property. *African Journal of Microbiology Research* **12**(29): 697-704.
- Shrestha, B.B.**, S. Joshi-Rijal, N. Bisht, S. Yi, R. Kotru, R.P. Chaudhary and N. Wu. 2018. Inventory and impact assessment of invasive alien plant species in Kailash Sacred Landscape. ICIMOD Working Paper 2018/2. Kathmandu: International Center for Integrated Mountain Development (ICIMOD), Kathmandu.
- Shrestha, B.B.**, U.B. Shrestha, K.P. Sharma, R.B. Thapa Parajuli, **A. Devkota**, and **M. Siwakoti**. 2018. Community perception and prioritization of invasive alien plants in Chitwan-Annapurna Landscape, Nepal. *Journal of Environmental Management*, **229**:38-47. <https://doi.org/10.1016/j.jenvman.2018.06.034>
- Shrestha, U.B., K.P. Sharma, **A. Devkota**, **M. Siwakoti** and **B.B. Shrestha**. 2018. Potential impact of climate change on the distribution of six invasive alien plants in Nepal. *Ecological Indicators*, **95**: 99-107. <https://doi.org/10.1016/j.ecolind.2018.07.009>
- Smith-Hall, C, M. Pouliot, D. Pyakurel, N. Fold, A. Chapagain, **S.K. Ghimire**, H. Meilby, L. Kmoch, D.J. Chapagain, A. Das, H. Jun, K. Nepal, M.R. Poudeyal, G. Kafle and H.O. Larsen. 2018. *Data Collection Instruments and Procedures for Investigating National-Level Trade in Medicinal and Aromatic Plants: The Case of Nepal*. Department of Food and Resource Economics, University of Copenhagen, IFRO Documentation, No. 2018/2. https://curis.ku.dk/ws/files/196408842/IFRO_Documentation_2018_2.pdf.
- Subedi C.K., Gurung J., **Ghimire S.K.**, Chettri N., Pasakhala B., Bhandari P. and Chaudhary R.P. **2018**. Variation in structure and composition of two pine forests in Kailash Sacred Landscape, Nepal. *BankoJankari*, **28**(1): 26–36.
- Thakur, C. and **S. Rajbhandary**. 2018. Fern and fern allies of Panchase Protected Forest, Central Nepal. *Journal of Plant Resources*, **16** (1): 39-45.
- Thapa, S., V. Chitale, S.J. Rijal, N. Bisht and **B.B. Shrestha**. 2018. Understanding the dynamics in distribution of invasive alien plant species under predicted climate change in Western Himalaya. *PLoS ONE*, **13**(4):e0195752. <https://doi.org/10.1371/journal.pone.0195752>
- Tiwari, A. and P.K. Jha. 2018. An overview of tree line response to environmental changes in Nepal Himalaya. *Tropical Ecology*, **59**(2):273-286.

MASTER THESES (2017-2018)

- Acharya, L. 2018. Microflora on black gram (*Vigna mungo* (L.) Hepper) seeds from different storage condition. (Supervisor: Dr. S.K. Jha).
- Adhikari, P. 2018. Phytochemical analysis of leaf and root of *Nelumbo nucifera* found in Nepal. (Supervisor: Prof. Dr. B. Pant).
- Baniya, S. 2018. People's perception on climate change and drought tolerance in rice landraces of Gorkha District, Nepal: Role of proline and fungal colonization. (Supervisor: Dr. L.B. Thapa).
- Barali, S. 2018. Organogenesis of Sweet potato (*Ipomoea batatas* (L.) Lam.) through node and shoot tip culture (Batch: 2071/73). (Supervisor: Dr. S. Pradhan).
- Basnet, S. 2018. Fodder plants, livestock production and livelihood in Chhayanth Rara Municipality, Muhu, Nepal. (Supervisor: Dr. G.P. Joshi).

- Bhatt, B. 2018. Taxonomy of *Panicum* L. (Poaceae) in Nepal (Supervisors: Prof. Dr. Mohan Siwakoti and Dr. Giri Prasad Joshi).
- Bhattarai, D.R. 2018. Native vs. naturalized plants: Diversity and biomass production in grasslands of Siwalik region, Nepal. (Supervisor: Dr. B.B. Shrestha).
- Bhattarai, P.D. 2018. Antifungal activity of some medicinal plants extracts, against important seed borne pathogens of maize.” (Supervisor: Dr. H.P. Aryal).
- Bhusal, A. 2018. Physico-chemical characteristics and macrophytes of lakes of Chitwan National Park, Central Nepal. (Supervisor: Dr A. Devkota).
- Bhusal, S. 2018. Nutritional and Physico-chemical properties of selective wild edible fruits from Gaurishankar Conservation Area, Central Nepal. (Supervisor: Dr. D.R. Pant and Co-supervisor: Dr. G.P. Joshi).
- Bista, U. 2018. Evaluation of post harvest loss of mango and its management using essential oil. (Supervisor: Dr. H.P. Aryal).
- Bista P. Soil Organic Carbon and fungal diversity under different land management practices in Kirtipur, Kathmandu. (Supervisor: Dr. C.P. Pokhrel and Co-supervisor: Dr. L.B. Thapa).
- Dangol, P. 2018. Change in functional traits of invasive alien weed *Lantana camara* along elevation gradient in central Nepal. (Supervisors: Dr. B.B. Shrestha and Prof. P.K. Jha).
- Ghimire, P. 2017 (BEM). Plant species diversity and tree carbon stock in Danphe Community Forest, Kuirepani, Dang, Nepal. (Supervisor: Dr. C.B. Baniya).
- Joshi, P. 2018. Taxonomy of the genus *Setaria* P. Beauv. and *Pennisetum* Rich. (Poaceae) of Nepal. (Supervisor: Prof. Dr. S. Rajbhandary, Dr. K.R. Rajbhandari and Dr. G.P. Joshi).
- Karki, S. 2018. Tree community structure and carbon stock of forest under different forest management regimes in Bara district of Central Nepal. (Supervisors: Dr A. Devkota and Dr B.B. Shrestha).
- Kharbuja, A. 2018. Grass flora along altitudinal gradient of the Phulchoki hill, Central Nepal. (Supervisor: Prof. Dr. S. Rajbhandary and Dr. K.R. Rajbhandari).
- Maharjan, R. 2018. Development of mutation inducing wheat-*Thnopyrum elongatum* disomic addition lines possessing a gametocidal chromosome 2C. (Supervisor: Dr. G.P. Joshi and Co-supervisor: Dr. D.R. Pant).
- Maharjan, S. 2018. In vitro culture of *Dendrobium chryseum* Rolfe. and *Vanda pumila* Hook.f. through different culture techniques. (Supervisor: Prof. Dr. B. Pant, Co-supervisor: Dr. S. Pradhan).
- Neupane A. 2018. Evaluation of conservation status of *Rauwolfia serpentina* (L.) Benth. ex Kurz in Jalthal Forest, Jhapa, Nepal (Supervisor: Dr. S.K. Ghimire)
- Neupane, M. 2018. Taxonomic study of the genus *Thalictrum* L. (Ranunculaceae) in Nepal. (Supervisor: Prof. Dr. S. Rajbhandary).
- Nyaupane, S. 2018. Taxonomy of two grass genera *Digitaria* Haller and *Paspalum* L. (Poaceae) of Nepal. (Supervisor: Prof. Dr. S. Rajbhandary and Dr. K.R. Rajbhandari).
- Pandey, D. 2018 (BEM). Floristic diversity and vegetation Patterns along land use types of community managed forests in Gaurishankar Conservation Area, Dolakha, Nepal. (Supervisor: Dr. C.B. Baniya).
- Panthi, Y. 2018 (BEM). Diversity of Invasive Alien Plant Species and their Impacts on the Provisioning Ecosystem Services in a village of Lamjung District, Nepal. MSc BEM Program (Supervisors: Dr B.B. Shrestha and Prof. P.K. Jha).
- Pokharel, R. 2018. In vitro culture of large cardamom *Amomum subulatum* by shoot tip culture. (Supervisor: Prof. Dr B. Pant).
- Pujara, S. 2018. Tree species diversity and carbon stock in forests of Tarai, Siwalik and Middle Mountains of Central Nepal (Supervisors: Dr A. Devkota and Dr B.B. Shrestha)
- Pun, D. 2018. Antioxidant antimicrobial and antidiabetic activities of methanolic extracts different species of *Hyedychium* from Nepal. (Supervisor: Dr. D.R. Pant and Co-supervisor: Dr. G.P. Joshi).
- Sah, A. 2017 (BEM). Population status and diurnal behaviour of the red-headed vulture (*Sarcogyps calvus*) at Anbu Khaireni, Tanahun, Nepal, (Supervisor: Dr. C.B. Baniya).
- Sharma, S. 2018. Bryoflora and its diversity along an altitudinal gradient of Phulchoki Hill, Central Nepal.– (Supervisor: Prof. Dr. S. Rajbhandary and Dr. G.P. Joshi).
- Shrestha, A. (2018) (BEM). Socio-Ecological Resilience to Earthquake Disaster in Barpak (Gorkha) and Tauthali (Sindhupalchok), Nepal. (Supervisor: Prof. Dr. K. P. Paudel and Co-supervisor: Dr. C.B. Baniya).
- Shrestha, B.M. 2018 (BEM). Climate change and its impacts on natural resources utilization by small holder farmers in three VDCs in Chitwan Annapurna Landscape Area, Nepal (Supervisors: Prof. Dr. Pramod Kumar Jha and Prof. Dr. Mohan Siwakoti).
- Thakur, C. 2018. Pteridophytes of Panchase Protected Forest, Central Nepal. (Supervisor: Prof. Dr. S. Rajbhandary).
- Wasti, A. 2018. *In vitro* induction and morphogenesis of callus from the node and leaves of *Piper longum* L. (Supervisor: Dr Krishna K Pant)

FACULTY MEMBERS

- Dr. Mohan Siwakoti (Professor and Head)
 Dr. Mohan Prasad Panthi (Professor)
 Dr. Sangeeta Rajbhandary (Professor)
 Dr. Ram Kailash P. Yadav (Professor)
 Dr. Bijaya Datta Pant (Professor)
 Dr. Hari Bhattarai (Professor)
 Dr. Suresh Kumar Ghimire (Reader)
 Dr. Chitra Bahadur Baniya (Reader)
 Dr. Deepak Raj Pant (Reader)

Dr. Krishna Kumar Pant (Reader)
 Dr. Sanjaya Kumar Jha (Reader)
 Dr. Anjana Devkota (Reader)
 Dr. Bharat Babu Shrestha (Reader)
 Dr. Chandra Prasad Pokhrel (Reader)
 Dr. Giri Prasad Joshi (Lecturer)
 Dr. Hari Prasad Aryal (Lecturer)
 Dr. Lal B. Thapa (Lecturer)
 Dr. Shreeti Pradhan (Lecturer)
 Dr. Narayan Prasad Ghimire (Lecturer)
 Mr. Mukti Ram Paudel (Lecturer)

Supporting staff

Mr. Prakash Krishna Karmacharya (Account Officer)
 Mr. Min Bahadur Khatri (Section Officer)
 Mr. Shailendra Kumar Singh (Lab. Officer)
 Mr. Janak Ram Parajuli (Senior Admin. Assistant)
 Mr. Ganga Thapa (Sr. Lab. Boy)
 Mr. Vishnu Thapa (Sr. Lab. Boy)
 Ms. Radha Sharma (Asst. Store Keeper)
 Ms. Sita Khanal (Asst. Store Keeper)
 Mr. Sambhu R Bista (Off. Assistant/Plant Collector)
 Ms. Sobha Maharjan (Office Assistant)
 Ms. Janaki Basnet (Office Assistant)
 Ms. Iswori Bista (Gardener)
 Ms. Laxmi Shrestha (Gardener)
 Ms. Rukumani Maharjan (Gardener)
 Mr. Kashi Ram Subedi (Gardener)
 Mr. Dil Man Poda (Sweeper)

BOTANICAL STUDENT SOCIETY (BOSS)

The executive body was elected on November 25, 2017 (2074.8.10) by the students of M.Sc. Ist and IIIrd year.

Executive members of BOSS (2018/2019)

President: Achut Parajuli
Vice-President: Manisha Nagarkoti
Secretary: Kiran Panthi
Joint Secretary: Sarita Chaulagain
Treasurer: Gaurav Shrestha
Members: Sita Gyawali
 Ashish Dhama
 Bijay K. Chaudhari
 Bijula Neupane
 Krishna Bahadur Budathoki

STUDENT ACTIVITIES

Orientation program for first semester student of BEM and botany

An orientation program for the M.Sc. first semester Botany students (2018-2020) was organised on April 17, 2018 (Baishak 4, 2075) in the department. Prof. Dr. M.P. Panthi gave the welcome address. A profile of the department was presented by Prof. Dr. B. Pant, and advice and guidelines by Prof. Dr. S. Rajbhandary. Mr. Min B.

Khatri (Section Officer) gave his remarks and the program was concluded by Prof. Dr. M. Siwakoti (Head, CDB). The program was conducted by Ms. S. Pradhan and the program was attended by all members of the department.

Students Welcome and Farewell

Botanical Students' Society (BOSS) organized a welcome program for the new M.Sc. Botany and BEM first semester students (2017-2019) and farewell to M.Sc. fourth year (2016-2018) and M.Sc. BEM (2016-2018) on July 27, 2018. The program was chaired by Mr. Benup Adhikari (President, BOSS), and Prof. Dr. M. Siwakoti (Head CDB) was the Chief Guest.

As it was *Gurupurnima* all the teachers were felicitated in the program. The organisers expressed their affection to the new comers and good wishes for their future to the seniors. Certificate to the winning team was also handed to the student players standing first and second in Inter-Semester Futsal Competition 2075. Mr. Suman Paudel gave the welcome address. Mr. Subash Nyaupane (Former President, BOSS), Ms. Pratikchy Chalise, Mr. Janak Ram Parajuli, Prof. M.P. Panthi, Prof. M. Siwakoti and gave their remarks. The students organised cultural program including dance, song and drama in between the program. All the teachers, administrative staff and students from the department attended the program.



Teej Program

On September 10, 2018 (Bhadra 25, 2075), BOSS, M. Sc. III Sem. Botany and BEM III Semester student's organized Teej program at Central Department of Botany, TU. During the program Mr. Suman Poudel (Secretary, BOSS), Prof. Dr. M. Siwakoti (Head, CDB) gave their best



wishes for the Teej a auspicious Hindu Monsoon Festival/ Dedicated to Goddess Parvati. All female teachers were gifted by the students in that occasion. Students performed songs, poem and at the end of the program, dance and food. The program was attended by teachers, staff and students.

M. Sc. BIODIVERSITY and ENVIRONMENTAL MANAGEMENT STUDENTS 2016-2020

M.Sc. BEM Ist Semester Student (2018-2020)

Adarsha Subede	Lamjung
Ananda adhikari	Gorkha
Binod B.C	Accham
Jenisha Napit	Kirtipur
Madan Dulal	Panchthar
Nabin Nepali	Bhaktapur
Prashant lamichhane	Gorkha
Sarita Chaulagain	Kavre
Shanker Bhandari	Bardiya

M.Sc. BEM IIIrd Semester Student (2016-2018)

Abhishek Singh	Dang
Anuradha Poudel	Kathmandu
Babita Ghimire	Lamjung
Chanu Thapa	Gorkha
Hira Kaji Dangol	Lalitpur
Namita Ganesh	Jhapa
Pooja Pandey	Kathmandu
Sharmila Thapa	Kaski
Thakur Prasad Aryal	Rasuwa
Urusha Sinkwal	Bhaktapur

M.Sc. BOTANY STUDENTS 2018-2020

Yogendra Bikram Paudel	Kapilbastu
Puja Bhatta	Kailali
Dinesh Binadi	Kailali
Kamala Shahi	Surkhet
Tulasa Chaudhary	Dang
Krishna Bahadur Budathoki	Salyan
Arati Chanda	Baitadi
Kalpana Joshi	Kailali
Tejral Chaudhary	Kailali
Archana Bhatt	Kailali
Binita Shrestha	Kathmandu
Ram Krishna Gautam	Dhankuta
Binod Gautam	Makwanpur
Laxmi Thapa	Banglung
Sunita Limbu	Dhankuta
Aditya Dhital	Makwanpur
Pratigya Sharma	Banglung
Rasika Kaffle	Sinduli
Bamdev Oli	Dang
Niruta Marpa	Lalitpur
Sadikchya Thapa	Dang
Nita Kumari Joshi	Kanchanpur
Sarita Sapkota	Nawalparasi
Chandra ku. Paudel	Makwanpur
Sujata Sharma	Rupendehi
Shital Aryal	Rupendehi

Gauri Lama	Kathmandu
Kiran Panthi	Gulmi
Manisha Nagarkoti	Lalitpur
Punam Pun	Banglung
Bijula Neupane	Dang
Binod Malla	Dang
Muna Baral	Kailali
Shasi Shrestha	Maygdi
Gyan Bahadur Yadav	Dang

M. Sc. IInd year (2017-2019)

Plant Biotechnology and Biochemistry

Arun Nagarkoti	Lalitpur
Gaurav Shrestha	Kathmandu
Manju Kanu Baniya	Butwal
Mina KC	Dang
Santoshi Khatri	Makwanpur
Sujan Dahal	
Banepa	

Plant Pathology and Applied Mycology

Pralhad Karki	Dhading
Madhu Bilash Ghimire	Kanchanpur
Bipana Shiwakoti	Dholkha
Nimble Giri	Bhaktapur
Rabindra Thapa	Bhaktapur
Achut Parajuli	Parvat
Renu Chaudhary	Kailali
Bijay K. Chaudhari	Saptari

Plant Systematics and Biodiversity

Ashish Dhami	Biratnagar
Kajol Basukala	Bhaktapur
Lesar Unat Basukala	Bhaktapur
Manisha Timilsina	Parsa
Richa Balayar	Kailali
Santosh Parajuli	Udayapur
Rojina Basi	Bhaktapur
Roshan BC	Nepalgunj
Suman Poudel	Chitwan

Ecology and Resource Management

Alina Shrestha	Doti
Himal Yonjon	Ramechhap
Kanchan Devi Upadhyay	Bajura
Oshin Shrestha	Makwanpur
Priyanka Bhatta	
Mahendranagar	
Sabita Chhengutala	Bhaktapur
Sandeep Dhakal	Rupendehi
Sita Gyawali	Syangja
Srijana Paudel	Lamjung
Sujita Khadka	Dang

