



VANASPATI

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

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EDITORIAL

After celebrating its Fifty years of establishment, Central Department of Botany has started fresh again this year by organizing an International Conference on “Biodiversity, Climate Change Assessment and Impacts on Livelihood from January 10-12, 2017 and several training workshops/talk programs for M.Sc. and PhD students in different fields and orientation program for faculties.

Farewell program have been organized by the department for colleagues who have achieved superannuation recently and felicitated teachers and staff on its ‘Department Day’ for their contribution.

Research is one of the major component of the department and number of publications in the newsletter is an evident. Some of the department colleagues have completed their projects and some have been successful in competing grants for research from various national and international organizations to strengthen the relationship with several foreign plant scientists. Several colleagues have also actively participated in various conferences, seminars, workshops organized in different institutes to disseminate their research findings.

Achievements of the departmental colleagues also highlights through their nomination in different institutions, work responsibilities and their awards.

Students of Botany and Biodiversity and Environmental Management were equally active and have organized students’ welfare activities, field trips, farewell and welcome, interaction and several other programs to improve the academic environment of the department.

With these small achievement, we believe the department will further continue to progress and our colleagues, administrative staffs, students, as well as well-wishers will contribute much more in research and academic development in the coming years

Editors

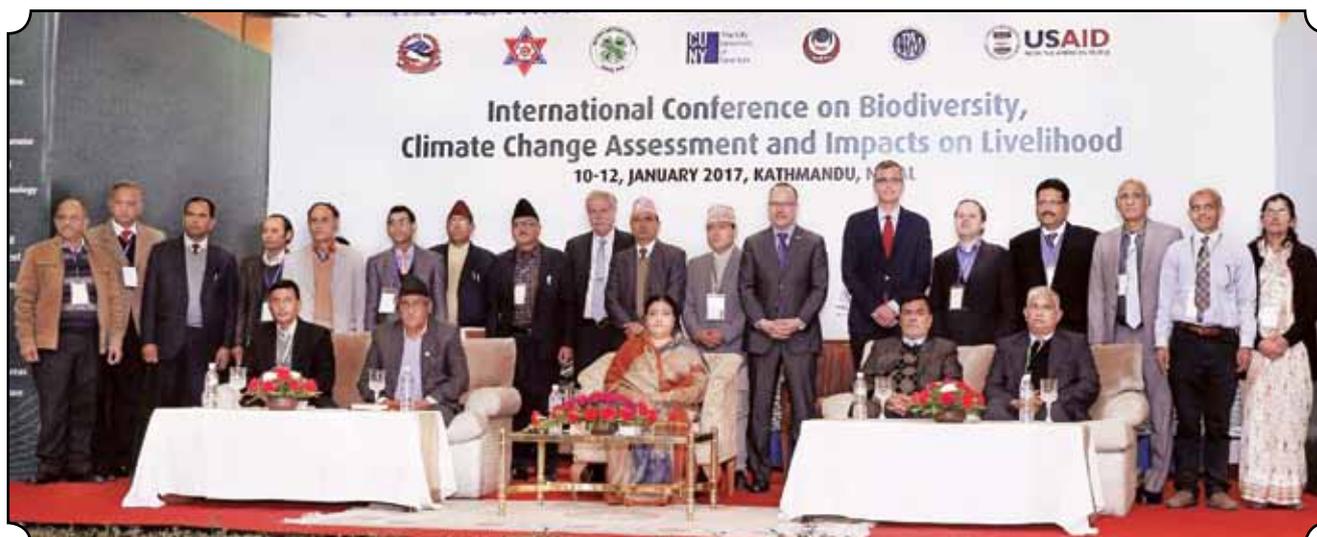
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INTERNATIONAL CONFERENCE ON BIODIVERSITY CLIMATE CHANGE ASSESSMENT AND IMPACTS ON LIVELIHOOD (January 10-12, 2017)



An International Conference on “Biodiversity, Livelihood and Climate Change Assessment and Impacts on Livelihood” was organized in Kathmandu, Nepal from from January 10-12, 2017. The conference was inaugurated by the Chief Guest, Rt. Honourable President, Ms. Bidya Devi Bhandari. The inaugural session was chaired by Prof. Dr. Tirth Raj Khaniya, the Vice-Chancellor of Tribhuvan University and Mr. Jay Dev Joshi, Honorable Minister of Population and Environment as Guest of Honour. The Chief Guest for the closing ceremony was Honorable Minister of Education Mr. Dhani Ram Poudel and the session was chaired by Prof. Dr. Mohan Siwakoti, Head, Central Department of Botany. About 400 participants, including over 100 participants from abroad actively participated in the conference. The conference was jointly organized by Tribhuvan University, Central Department of Botany; Agriculture and Forestry University, Rampur; City College—CUNY, New York; Institute of Global Agriculture and Technology Transfer (IGATT), USA; IPM Innovation Lab, USA and four ministries of the Government of Nepal, namely Ministry

of Population and Environment, Ministry of Science and Technology, Ministry of Agriculture Development, and Ministry of Forest and Soil Conservation.

The conference was supported by European Union; University Grants Commission, Nepal (UGC); International Centre for Integrated Mountain Development (ICIMOD); Nepal Academy of Science and Technology (NAST); World Wildlife Fund Nepal (WWF); International Development Enterprise; National Trust for Nature Conservation; Alternative Energy Promotion Centre; Food and Agriculture Organization of the United Nations; Ministry of Livestock Development, GoN; United Nations Development Program, Nepal; Agriculture Research Council (NARC), Nepal; Department of Plant Resources, Nepal; Adaptation for Small holders in Hilly Areas(ASHA); President Chure-Tarai Madhesh Conservation Development Board, Nepal; Asia Network for Sustainable Agriculture and Bio-resources (ANSAB), Nepal; and Prime Minister Agriculture Modernization Project. United States Agency for International Development (USAID) was the promoter of the conference.

CELEBRATION OF 51st ANNIVERSARY OF CDB, TU

The Central Department of Botany celebrated its 51st Anniversary on Mangsir 13, 2071 (November 28, 2016). 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 Mr. Dilli Ram Upreti, Registrar, TU as Guest of Honour. Welcome address was presented by Prof. Dr. M.P. Panthi and Mr. Subash Nyaupane (President, BoSS), Mr. M.B. Khatri (Section Officer), Prof. Dr. B. Pant (CDB, TU), Prof. Sanu Devi Joshi (Former Head, CDB TU), Mr. Dilli Ram Upreti, Registrar, TU and Prof. Dr. Sudha Tripathi, Rector, TU gave away their remarks.

Prof. Dr. Usha Budathoki was felicitated on the occasion for her contributions in the field of Botany, and she shared her experience in the program. Prof. Dr. R.K.P. Yadav spoke about Prof. Budathoki’s contribution to the department and

her role as botanist in the country. Similarly, Ms. Laxmi Shrestha (Gardener) was recognised for her dedicated service in the department.



Book entitled ‘A Treasure Trove of Orchids in Central Nepal’ was released by Chief Guest, Prof. Dr. Sudha Tripathi (Rector), department Newsletter ‘Vanapati’ (Issue 16) was released by Guest of Honour, Mr. Dilli Ram Upreti (Registrar). Review of the book was presented by Dr. Kamal Krishna Joshi (former Vice-Chancellor, TU and former Chairman, UGC).

The training workshop for ‘The identification of grasses’ was also inaugurated on the same program by Dr. Kamal Krishna Joshi (former Vice-Chancellor and former Chairman UGC) by opening the banner of the workshop. Highlight of the training program was given by Dr. S.K. Ghimire.



Mr. Prabin Bhandari and Mr. Sujan Balami (Topper, M. Sc., 2015), Ms. Neelam Pandey and Mr. Dhurba Khakurel (M. Sc. Botany I Sem.); Ms. Bidhya Maya Shrestha and Prakash Basyal (M.Sc. BEM IV Sem.) and Ms. Shobha Rawat and Satiz Chandra Poudel (M.Sc. BEM I Sem.) were awarded with meritorious certificate for their respected batch 2016; and Mr. Ganesh Datta Joshi (2015) and Ms. Neelam Pandey (2016) were awarded with Narendra Bhatt Memorial Scholarship. The program was conducted by Dr. B.B. Shrestha.

TRAINING PROGRAM

Training Workshop for the Identification of Grasses

To increase the expertise of plant identification especially for grass Central Department of Botany, Tribhuvan University, organized a “Training workshop for the identification of grasses” from November 27- December 2, 2016 (Mangsir 12-17, 2073) for students from Plant systematic and Biodiversity Conservation Unit and Ecology and Resource Management Unit. Two participants from National Herbarium and



Plant Laboratories, Godawari and one lecturer from Amrit Science Campus also attended the workshop including faculty members from the department. The program was Co-ordinated by Prof. Dr. S. Rajbhandary.

The resource person for the workshop was Dr. Keshab Raj Rajbhandari (Former Scientific Officer of Department of Plant Resources) and one lecture on the classification of grasses was given by Prof. Dr. M. Siwakoti, Head, CDB, TU.

Training Workshop on Pen and Ink for Taxonomists

The Central Department of Botany, Tribhuvan University and Royal Botanic garden Edinburgh jointly organised one day ‘Training workshop on Botanical Illustration’ on April 13, 2017 (Chaitra 31, 2073). The main objective of this training was to make the participant to be familiar with the importance of the scientific illustrations of plants. The training was focused mainly on line drawings for taxonomic study, to let the student understand how to draw and scale, lay out a botanical plate and achieve excellent drawing and inking techniques from the artists Claire Banks and Jacqui Pestell from Royal Botanic Garden Edinburgh.



Thirteen students - Bijay Khadka, Bishna Joshi, Dhruva Khakurel, Laxmi Dhakal, Mahendra Gahatraj, Menuka Paudel, Neelam Pandey, Prithivi Raj Gurung, Priti Dhakal, Sangram Karki, Seeta Pathak, Sirjana Khatri, Suneeta Bhatta, and Surya Prakash Sharma from Second semester participated the workshop.

Prof. Dr. M. Siwakoti, Head of the department handed over the Token of Appreciation for both the artists on behalf of the department. The program was Co-ordinated by Prof. Dr. S. Rajbhandary.

Training Workshop on Research Methodology

The Central Department of Botany organised a six day training Programme for Ph.D. scholars from June 20-26, 2017 (Ashad 6-12, 2074) at the department. The programme was inaugurated by Chief Guest, Prof. Dr. Ram Prasad Khatiwada, Dean, Institute of Science and Technology, Tribhuvan University after unfolding the banner of the program. The welcome speech was delivered by Prof. Dr. Ram Kailash Prasad Yadav. Highlights and justification of the program was delivered by Dr. Chitra Bahadur Baniya, the Co-ordinator of this training program. The program was chaired by Prof. Dr. Mohan Prasad Panthi, Acting Head. The faculty members, staff and participants attended the inauguration program.



Twenty four Ph.D. scholars registered at the Central Department of Botany and Research Centre for Applied Science and Technology (RECAST) attended the program. The program was funded by University Grants Commission, Nepal.

Following papers were presented in a weeklong program by distinguished experts:

1. Research and data analysis (Prof. R.K.P. Yadav)
2. Why “R” (Dr. C.B. Baniya)
3. Biological data analysis an overview (Dr. S.K. Ghimire)
4. Effective oral presentation (Prof. S. Rajbhandary)
5. Effective poster presentation (Prof. S. Rajbhandary)
6. Thesis writing (Dr. B.B. Shrestha)

Orientation Program

An orientation for M. Sc. Botany was organised from Ashar 19-21, 2017 at the department. M. Sc. Botany courses have been running in Amrit Science Campus, Biratnagar Post Graduate Campus and Central Department Botany, TU, Kirtipur. The main objective of the program was for maintaining uniformity in teaching M. Sc. Botany first semester amended course in all three campuses. The program was financially support by University Grants Commission, Nepal.

The inaugural session of the program was chaired by Prof. M.P. Panthi (Acting Head, Central Department of Botany, TU). Mr. Suman Lal Shrestha (Assist. Dean, IOST) was invited as the Chief Guest of the inaugural session. Welcome speech was delivered by Prof. S. Rajbhandary and Program Co-ordinator, Dr. Sanjaya Jha gave the highlights of the program. Mr. Suman Shrestha (Asst. Dean, IOST) presented his remarks, and with the concluding remark the program was concluded by the Chair, Prof. M.P. Panthi (Acting Head). The program was conducted by Dr. B.B. Shrestha.

Following papers were presented by the distinguished experts:

Diversity and Evolution of Virus, Bacteria, Fungi and Lichen (theory + practical) (Bot 502): Dr. C.P. Pokhrel, Dr. S.K. Jha, and Dr. L.B. Thapa.

Diversity and Evolution of Non-Vascular Plants: Algae and Bryophytes (theory + practical) (Bot 504): Algae: Dr C.B. Baniya; Bryophytes: Dr G.P. Joshi

Diversity and Evolution of Vascular Plants I: Pteridophytes and Gymnosperms (theory + practical) (Bot 506): Pteridophytes: Dr. D.R. Pant; Gymnosperm: Dr A. Devkota.

Diversity and Evolution of Vascular Plants (508): Dr. S.K. Ghimire.

Field work (techniques of specimen collection, preservation and curation) and seminar (Bot 509): Field work: Prof. S. Rajbhandary; Seminar: Dr. G.P. Joshi; Term paper: Prof Dr B. Pant.

Model question was presented by Dr D.R. Pant. Vigorous discussion was done in model question among the participants and finally Prof. Dr. M.K. Chhetri finalized the model questions for new revised M.Sc. first semester syllabus.

Altogether 25 participants (Lecturer, Associate Professor and Professors) participated in the three days orientation program. The participants were from Amrit Science Campus (Prof. M.K. Chhetri and Prof. Kanta Paudyal), Post Graduate Campus, Biratnagar (Dr. Indramani Bhagat) and faculties from Central Department of Botany, TU.



BOTANY SUBJECT COMMITTEE

The Dean, IOST/TU constituent the Botany Subject Committee on Ashad 2074 as follows:

- Prof. Dr. Mohan Siwakoti (Chairman)
- Prof. Dr. Mohan Prasad Panthi (CDB, TU)
- Prof. Dr. Mukesh Kumar Chhetri (ASCOL)
- Prof. Dr. Sangeeta Rajbhandary (CDB, TU)
- Prof. Dr. Kanta Poudel (ASCOL)
- Prof. Dr. Ram Kailash Prasad Yadav (CDB, TU)
- Prof. Dr. Bijaya Pant (CDB, TU)
- Dr. Suresh Kumar Ghimire (CDB, TU)
- Dr. Chitra Bahadur Baniya (CDB, TU)
- Head, Botany Department (PG Campus, Biratnagar)
- Head, Botany Department (SS Campus, Mahendranagar)
- Head, Botany Department (Tri-Chandra M Campus, Kath.)
- Head, Botany Department (Patan M Campus, Lalitpur)
- Head, Botany Department (PN Campus, Pokhara)
- Head, Botany Department (Butwal M Campus, Butwal)
- Head, Botany Department (Thakur Ram Campus, Birgunj)
- Dr. Bisho Nath Oli (Secretary, MoPE)
- Dr. Maheshwor Dhakal (Joint Secretary, MoFSC)
- Director General (DPR, Kathmandu)
- Prof. Dr. Sidhi Bir Karmacharya (Khopa College)

STANDING COMMITTEE

The Standing Committee of Botany Subject Committee is as follows:

- Prof. Dr. Mohan Siwakoti (Chairman)
- Prof. Dr. Mohan Prasad Panthi (Member)

Prof. Dr. Mukesh Kumar Chettri (Member)
Prof. Dr. Sangeeta Rajbhandary (Member)
Prof. Dr. Ram Kailash Prasad Yadav (Member)

RESEARCH COMMITTEE (CDRC)

The Central Department Research Committee constituted in 2074 is as follows:

Prof. Dr. Mohan Siwakoti (Chairman)
Prof. Dr. Mukesh Kumar Chettri (Member)
Prof. Dr. Sangeeta Rajbhandary (Member)
Prof. Dr. Bijaya Pant (Member)
Dr. Suresh Kumar Ghimire (Member)

BOTANY SUBJECT COMMITTEE MEETING

Full Body Botany Subject Committee meeting was held on November 15-16, 2017 to endorse the revised M.Sc. new courses for the students completing four year B.Sc. The meeting was attended by the Botany Subject Committee members, faculties from the department, and invited B. Sc. teachers from different campuses, senior retired professors (Prof. of Emeritus R.P. Chaudhary Prof. of Emeritus P.K. Jha, Prof. H.D. Lekhak, Prof. R.D. Tiwari) were invited as experts. Prof. Ram Prasad Khatiwada (Dean, IoST) and Mr. R.N. Jha (Assistant Dean), and Mr. Suman Lal Shrestha (Assistant Dean), also attended the meeting and shared their views as well.

The complete course and the structure of M.Sc. Botany was presented by Dr. Suresh K. Ghimire and discussed by Subject Committee members and experts to get some suggestion and feedbacks.



On the second day, November 16, 2017, complete course and the structure of M.Sc. Biodiversity and Environmental Management (BEM) was presented by Prof. S. Rajbhandary and discussed by Subject Committee Members and experts to get some suggestion and feedbacks.

FAREWELL AND FELICITATION TO PROF. DR. P. K. JHA AND MR. S.R. UPADHYAYA

Farewell to Prof. Dr. Pramod K. Jha (Former Head), who retired from the Central Department of Botany after a long, glorious teaching career, and Mr. Sita Ram Upadhyaya (Deputy Administrator, CDB TU) also retired from his administrative work, was organized in the Central Department of Botany on April 10, 2017 (Chaitra 28, 2073).

Welcome address was delivered by Prof. Dr. M.P. Panthi, and contribution of Prof. Jha and Mr. Upadhyaya was highlighted by Prof. Dr. B. Pant and Mr. Min Bahadur Khatri (Section Officer). Similarly, Prof. Dr. Govinda P.S. Ghimire (Former Head), Prof. Dr. H.D. Lekhak, Mr. A.P. Dhital (Secretary BOSS) and Prof. Ram P. Khatiwada (Dean, IoST) also spoke about Prof. Jha's contribution to the department and his role as botanist in the country. Prof. Jha and Mr. Upadhyaya shared their long experience with the department.

Prof. Jha received Scarf and bouquet from Prof. Ram K.P. Yadav and Dr. A. Devkota, Doshalla from Prof. Ram P. Khatiwada (Dean, IoST), Tamra Patra (letter of Appreciation) from Prof. M. Siwakoti (Head, CDB) and Gift from the department by Prof. S. Rajbhandary as a token of respect and a personal gift from Dr. Keshab R. Rajbhandari.



Similarly, Mr. Upadhyaya received Scarf and bouquet from Dr. G.P. Joshi and Dr. A. Devkota, Doshalla from Prof. Ram P. Khatiwada (Dean, IoST), and Tamra Patra (Letter of Appreciation) from Prof. M. Siwakoti (Head, CDB).

The program was attended by Prof. Dr. Govinda P S Ghimire (Former Head), Prof. Dr. V.N.P. Gupta, Prof. Dr. H.D. Lekhak, Dr. K.R. Rajbhandari, Prof. Dr. U. Budathoki, Dr. L. Manandhar, Prof. Dr. K.K. Shrestha (Former Head), PhD students, Master's students and whole department family. The program was chaired by Prof. M. Siwakoti (Head, CDB) and the program was conducted by Ms. S. Pradhan.

DEPARTMENTAL PROJECT ACTIVITIES

Climate Change in the High Himalaya: Effects on Alpine Vegetation and Ethnobotany

Activities: Since 2009, researchers at CDB/TU, in collaboration with Missouri Botanical Garden, USA and regional partners from China and Bhutan, and funding from National Geographic Society, USA, are undertaking long-term studies to assess alpine vegetation responses to climate change. Using methodology of the Global Observational Research Initiative in Alpine environments (GLORIA) the team resampled alpine plots at Langtang National Park, Central Nepal (4054-4784 m) and Mei Li Shui, Tibetan China (4556-4819 m) in 2016, and Kangchenjunga Conservation Area (3900-4900 m) in 2017.

These three target regions represent the Central Himalayan and Hengduan Mountains along 1,500 km transect of sites across the Eastern Himalaya. At each target region they



retrieved temperature monitors and resurveyed vegetation at the four elevationally-graded summits that were established in 2009 (in Langtang and Mei Li Shui) and 2010 (in Kangchenjunga), assessed dynamics of ethnobotanical traditions in the closest villages, and provided trainings to the young graduate students on GLORIA protocol and resampling methods.



The main researchers included Dr. Suresh K. Ghimire, Associate Professor, CDB/TU; Dr. Robbie Hart, Assistant Curator, William L. Brown Centre, Missouri Botanical Garden, USA; Dr. Fang Zhendong, Director of the Shangri-La Alpine Botanical Garden, China; Mr. James Leucas, Ph.D. student, USA; and M.Sc. students of CDB/TU. In Nepal GLORIA sites in Kangchenjunga Conservation Area, which was revisited recently in October 2017, the M.Sc. students of CDB/TU involved in the resurvey were Bandana Awasthi, Yagya Raj Paneru, Bikram Gyawali, Ashis Dhama, Santoshi Khatri, Suman Paudel and Sita Gewali.

Transiting to Green Growth - Natural Resources in Nepal (TGG-N)

Activities: Since 2014, CDB/TU has been involved in a long-term project “Transiting to green growth – natural resources in Nepal” (TGG-NRN) focusing on harvesting sustainability of high-value medicinal and aromatic plants (MAPs) in collaboration with Agriculture and Forestry University (AFU), Nepal; Federation of Community Forestry Users, Nepal (FECOFUN); Kunming Institute of Botany, China; and University of Copenhagen, Denmark with funding from Danida Fellowship Centre, Denmark. As a major component of this project from CDB/TU side, Ms. Deep Jyoti Chapagain and Mr. Mukti Ram Paudeyal are working for their Ph.D. under the supervision of Dr. Suresh Kumar Ghimire.

The team is mainly focusing on population ecology and harvesting sustainability of five major MAPs: *Aconitum spicatum*, *Allium wallichii*, *Dactylorhiza hatagirea*, *Neopicrorhiza scrophulariiflora* and *Meconopsis napaulensis*.



In 2017, the team has successfully monitored the demography and reproductive performances of these MAPs in Annapurna Conservation Areas (ACA), Langtang National park (LNP), and Annapurna Conservation Area (ACA). In addition, two M.Sc. students, Ms. Bandana Awasthi and Mr. Santosh Thapa were also partially supported through this project to complete their M.Sc. dissertation in Botany.

APN project Activities

The workshop under the project activity of “Scientific Capacity Development to Strengthen Informed Decision Making for Improved Climate Policy Formulation and Implantation in Nepal” (an Asia Pacific Network for research funded project) was jointly organized by the Central Department of Botany and the Ministry of Population and Environment on January 5, 2017 in Kathmandu. Honorable Minister, Mr. Jay Dev Joshi inaugurated the workshop. Prof. Dr. M. Siwakoti (Head, CDB), Dr. Bishow Nah Oli (Secretary, MoPE) and Mr. Ganesh Sah (Former Minister) gave the remarks on climate change policy. Prof. Dr. P.K. Jha (Former Head and Co-ordinator of the project) and Dr. Ram Prasad Lamsal (Joint Secretary) respectively presented papers on overview of impacts of climate change in Nepal and climate change policy implementation status in Nepal.

The second workshop under the project was held in Janakpur on Feb. 3, 2017. The program was chaired by Prof. Dr. M. Siwakoti and Prof. Dr. P.K. Jha and Dr. Ram A. Mandal presented their papers. The workshop was jointly organized by the Central Department of Botany, Dr. Tony Hagen Foundation and Mithila Institute of Technology of Janakpur. Local media persons, academicians, students participated the workshop. Similarly, the third workshop was jointly organized by the Central Department of Botany and the Ministry of Population and Environment at Mahendranagar, Kanchanpur District on March 4, 2017 and in Siddhanath Science Campus on March 5, 2017. Prof. Dr. M. Siwakoti and Prof. Dr. P.K. Jha were the resource persons for the workshop.

Departmental Project Activity: Darwin Initiative Project

The Department is implementing a research project ‘Science based intervention reversing negative impacts of invasive plants in Nepal’ in collaboration with Royal Botanic Garden Edinburgh (UK), and other partner organizations in Nepal. In this project the Department is working to analyze diversity and distribution of naturalized and invasive alien plant species in three districts viz. Kailali, Nawalparasi and Makawanpur. Three MSc IV semester students (Ganesh D Joshi, Rasmi Paudel and Bhawani Nyaupane) are working on these topics for their MSc thesis. In September 2017, they completed sampling different vegetation and land use

types in these three districts. Dr. Bharat Babu Shrestha, key contact person of the project at the Department, led the field work and other 12 MSc students provided assistance in data collection. Similarly, to fill gap in distribution data of invasive alien plant species Dr. Bharat Babu Shrestha and Mr. Ganesh D Joshi travelled Pyuthan, Rolpa, Salyan, Rukum and Jagarkot districts from October 9-16, 2017 for roadside mapping of invasive alien plants.

ORIENTATION PROGRAM FOR FIRST SEMESTER STUDENT OF BEM AND BOTANY

An orientation program to the M.Sc. first semester Botany students (2017) was organised on April 28, 2017 (Baishak 15, 2074) 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.

FIELD EXCURSIONS/VISITS

Field Trip of M.Sc. (Botany) students

M.Sc. II semester students went for botanical excursion to Manang Valley from May 25 - June 1, 2017. The objectives of the field trip were to make the students understand the plant diversity of tropical to alpine region in natural condition. The techniques of plant collection, herbarium preparation for higher plants and analysis of the vegetational biodiversity and ecology were taught. The team was accompanied by Dr. C.B. Baniya, Mr. G.P. Joshi and plant collector Mr. S. R. Bista.



M.Sc. first semester students visited Panchase Central Nepal from September 13-19, 2017. The trip was mainly focus to teach the students to make them understand the



plant diversity 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. D.R. Pant along with Dr G.P. Joshi, Dr. H.P. Aryal and plant collector Mr. S.R. Bista.

APPOINTMENT/NOMINATION

Prof. P.K. Jha has been appointed as Professor of Emeritus by Tribhuvan University at Central Department of Botany.

Prof. B. Pant appointed as Board Member of Ayurveda and Complementary Medicine Committee, Nepal, Health Research Council, Ministry of Health, GoN, 2017.

Dr. G.P. Joshi has been nominated as a Member of the Editorial Board for *Tropical Plant Research, an International Journal*, India, 2017.

Dr. G.P. Joshi has been nominated as a Member of the Subject Expert-Technical Committee, Ministry of Science and Technology, Government of Nepal, 2017.

Dr. H.P. Aryal has been nominated as a Member of Advisory Board of Asian Mycological Association for 2016-2017 on Asian Mycological Congress 2015, held on 7-10 October 2015 Goa University, Goa, India.

Dr. D.R. Pant and **Dr. G.P. Joshi** have been nominated as Member of Biotechnology Subject Committee (2016-2019).

Prof. Dr. S. Rajbhandary has been appointed as a Committee Member of the Doctoral Program Committee by Institute of Science and Technology, Tribhuvan University, 2017.

AWARD

Dr. H.P. Aryal has received Nabil Science and Technology Award on December 5, 2016 from the Prime-Minister on the "34th Anniversary of Nepal Academy of Science and Technology (NAST).



Dr. H.P. Aryal and Dr. L.B. Thapa, received *Nepal Bidya Bhusan* "Ka" (Gold Medal) by Mrs. Vidya Devi Bhandari the honourable president of Nepal on the occasion of National Education Day, September 8, 2017 (Bhadra 23, 2074).

RESEARCH GRANTS

Dr. Deepak Raj Pant received funding from Nepal Academy of Science and Technology for the project entitled “Antioxidant, antimicrobial and antidiabetic activities of plant extract of selected species of *Berberis* of Nepal (2017-2018).

Prof. Dr. B. Pant received funding from University Grants Commission, Nepal for the project entitled “Evaluation of anticancer properties of some medicinal orchids of Nepal and mass scale propagation of identified species. (2017-2018).

Prof. Dr. M. Siwakoti, Co-ordinator for the collaborative project “Strengthening capacities for implementation of the Nagoya Protocol in Nepal” (2017-2018). The team members are Prof. Dr. M.P. Panthi, Prof. Dr. S. Rajbhandary, Dr. S.K. Ghimire and students Ashis Prakriti Dhital, Bijaya Khadka, Dhurba Khakurel, and Sangram Karki.

TALK PROGRAM

Dr. Keshab Raj Rajbhandari Former Scientific Officer of Department of Plant Resources delivered a talk on the topic “History of botanical exploration of Nepal” on March 15, 2017.

Dr. Niti B. Mishra, Associate Professor, Department of Geography and Earth Science, University of Wisconsin-I a Crosse, USA delivered a talk on the topic “Using Unmanned Aerial vehicles (UAVs) for monitoring Himalayan vegetation: Opportunities and challenges” on June 21, 2017.

Prof. Dr. M. Imadatul Hoque, Dean of Biological Science, University of Dhaka, Bangladesh delivered a talk on the topic “Improvement of two legumes through Agrobacterium mediated genetic transformation” on August 21, 2017.

VISITS (2017)

Prof. Dr. M. Siwakoti, Prof. Dr. P.K. Jha and **Prof. Dr. S. Rajbhandari** visited Dabur Nepal Pvt. Ltd on August 3, 2017. The team discussed about academic activities and research projects with Dr. Pankaj Prasad Raturi and visited the nursery and the laboratory for future collaboration.



Prof. Dr. M. Siwakoti and **Dr. B.B. Shrestha** and three students (Mr. G.D. Joshi, Ms. R. Paudel, Ms. B. Nyaupane) from the department and Dr. B. Adhikari from Royal Botanic Garden Edinburgh visited Central National

Herbarium, Calcutta from November 7-11, 2017 to identify plant specimens as a part of the project ‘Science-based interventions reversing negative impacts of invasive plants in Nepal’ funded by Darwin Initiative, UK. They had meeting with Dr Paramjit Singh, Director of Botanical Survey of India, Dr. P. Prasanna, In-charge of National Herbarium, Calcutta (CAL), Dr. A Pramanik, In-charge of Botanical Garden and Dr. V.P. Prasad, Scientist of Calcutta National Herbarium and discussed about the Memorandum of Agreement for mutual collaboration between Central National Herbarium Calcutta and Central Department of Botany, Kathmandu.



Dr. B.B. Shrestha delivered a talk on the topic “Invasive alien plants of Nepal: Diversity, distribution and management”. About 50 scientists of Botanical Society of India (BSI) attended the program on November 9, 2017.

Prof. Dr. M.P. Panthi visited the New Horizon Campus, in Butwal, Nepal on November 2-3, 2017 and delivered a talk on the topic entitled “Biodiversity of Nepal and its present status and herbarium techniques and its role in plant research”.

WORKSHOP/SEMINAR/PROGRAM CONFERENCE ATTENDED (2016-2017)

Prof. B. Pant and **Dr. S. Pradhan** attended 8th International Conference on Plant Tissue Culture and Biotechnology, from Dec. 3-5, 2016 in Dhaka, Bangladesh and presented their papers entitled

Prof. B. Pant: “Plant tissue culture: Totipotency, research, development and beyond”, and

Dr. S. Pradhan: “Mass propagation of *Cymbidium aloifolium* (L.) Sw. through different *in vitro* culture techniques and its genetic fidelity”

Prof. M.P. Panthi, Prof. B. Pant, Dr. S.K. Ghimire, Dr. C.B. Baniya, Dr. S.K. Jha, Dr. A. Devkota, Dr. B.B. Shrestha, Dr. H.P. Aryal, Dr. L.B. Thapa, Dr. S. Pradhan, M.R. Paudel attended International Conference on Biodiversity, Climate Change Assessment and Impacts on Livelihood Kathmandu, Nepal, from January 10-12, 2017 organized by Tribhuvan University (Central Department of Botany, Kathmandu), Agriculture and Forestry University (Nepal), City University of New York (USA), and Institute for Agriculture and Technology Transfer (USA). Each one of them presented papers entitled:

Prof. B. Pant: Orchids: “Important components of biodiversity and livelihood and their conservation practice in some community forests of Nepal”.

Dr. S.K. Ghimire: “Monitoring response of alpine vegetation to climate change in the Nepal Himalaya”.

Dr. C.B. Baniya: “Species area relationship in Annapurna Conservation Area (ACA), Nepal”.

Dr. A. Devkota: “Allelopathic influences of *Artemisia dubia* wall. ex. Besser on seed germination and seedling vigor of *Parthenium hysterophorus* L. and phenotypic plasticity of *Centella asiatica* (Linn) Urban growing in different habitats of Nepal”.

Dr. B.B. Shrestha: “Invasion everywhere, management nowhere: a case of policy and practice for the management of invasive alien species in Nepal”.

Dr. H.P. Aryal: “Nutrients of *Termitophilous* mushrooms in Nepal: An ethnomycological approach”.

Dr. L.B. Thapa: “Invasion mechanism of an alien species *Ageratina adenophora* in Nepal”.

Dr. S. Pradhan: “*Ex situ* conservation of a threatened medicinal orchid, *Cymbidium aloifolium* (L.) Sw. through artificial seed technology”.

Mr. M.R. Paudel: “Biological activities of *Dendrobium crepidatum* Lindl. & Paxton”.

Prof. Dr. M. Siwakoti, and Prof. Dr. S. Rajbhandary, attended the “Seventh International Editorial Meeting of the Flora of Nepal” and technical session on January 19, 2017 (Margh 6, 2073) held at Nepal Academy of Science and Technology (NAST) Khumaltar, Lalitpur, Nepal.



Dr. B.B. Shrestha presented a paper on “Regeneration of subalpine tree species: some measurements and field observations in Nepal Himalaya” during a *Symposium on Himalayan Treeline* on March 4, 2017 in Kathmandu, Nepal. The symposium was organized by Tree Ring Society of Nepal and Resources Himalaya Foundation, Kathmandu.

Prof. Dr. B. Pant, Dr. S. Pradhan and M.R. Paudel attended *South Asian Biotechnology Conference*, from March 16-18, 2017, Kathmandu, Nepal and presented their papers entitled.

Prof. Dr. B. Pant: “Tissue culture technology for the enhancement of plants and plant products”.

Dr. S. Pradhan: “Marker based analysis to establish genetic fidelity on *in vitro* regenerated plantlets of *Cymbidium aloifolium* (L.) Sw”.

Mr. M.R. Paudel: “Biological activities of antioxidant-rich *Dendrobium amoenum* and *Dendrobium moniliforme* stem extracts”.

Dr. H.P. Aryal presented paper entitled “Optimization of culture media for mycelia growth of *Termitomyces albuminosus* (Berk.) R. Heim” on March 16-18, 2017 in 3rd *International Conference SABC-2017*, Kathmandu Nepal.

Prof. Dr. S. Rajbhandary attended the “A short course on - *Natural Products: Identification, Characterization and Utilization*” on April 26-27, 2017 at Tribhuvan University, Kathmandu. The program was organized by Research Centre for Applied Science and Technology (RECAST). Paper entitled “Ethnobotany of Nepal: Trends and perspectives” was presented in the program on April 26, 2017.

Prof. Dr. B. Pant attended the A short course on - *Natural Products: Identification, Characterization and Utilization*” on April 26-27, 2017 at Tribhuvan University, Kathmandu. The program was organized by Research Centre for Applied Science and Technology (RECAST). Paper delivered entitled “*In vitro* technology for the production of plants and plant products” was presented in the program on April 26, 2017.

Dr B.B. Shrestha presented a poster on “Invasive alien plant species: Diversity, distribution and management in Nepal” during *Second National Workshop on Conservation and Utilization of Agriculture Genetic Resources* organized by National Genebank, NARC; Fruit Development Directorate; Department of Agriculture; and Ministry of Agricultural Development from May 22-23, 2017, Dhulikhel, Kavre, Nepal.

Prof. Dr. S. Rajbhandary attended the program on “Global Taxonomic Initiative Program for supporting the Universities” on June 12, 2017. The program was organized by Department of Plant Resources, Thapathali.

Dr. B.B. Shrestha presented a paper on “Biological invasion: Understanding global patterns to address national challenges” on July 14, 2017 as a invited speaker for Pralad Yonzon Conservation Forum Series LXIV at Resources Himalaya Foundation, Sanepa, Lalitpur.

Prof. Dr. M.P. Panthi attended a *National Consultative meeting on Ayurveda, Traditional Medicine, Medicinal Plants and other related resources for its applied approach* (Networking and Collaboration) on June 11, 2017 and presented a paper entitled “Present status of research on medicinal plants in Central Department of Botany, TU”. The program was organised by National Ayurveda Research and Training Centre, Kritipur, Ministry of Health, Government of Nepal.

Dr. C.B. Baniya attended a seminar on *Know Nepal through its history, culture, Society and biodiversity* and delivered guest lecture on “Plants and people of Nepal” on August 19, 2017 in Kathmandu. The seminar was organized by Kathmandu Institute of Applied Sciences (KIAS) and HIGO Program, Kumamoto University, Kumamoto, Japan.

Prof. Dr. B. Pant presented a paper entitled “Prospects of biological teaching in high school in Nepal” on September 12th, 2017. The program was organized by Ministry of Science and Technology, NAST, Kathmandu, Nepal.

Prof. Dr. M. Siwakoti, Prof. Dr. S. Rajbhandary and Prof. Dr. B. Pant attended the program 5th National Science day organized by Ministry of Science and technology on September 17, 2017, at Nepal Staff College, Lalitpur Nepal.

Prof. Dr. B. Pant attended the program *International Symposium on Food Security and Sustainable Development*

2017(ISFS2017), from Nov. 22- 24, 2017 in Vietnam and presented a paper entitled “*In vitro* technology for medicinal plants, their products and beyond”. The program was organized by Industrial University of Ho Chi Minh City, Ho Chi Minh City, Vietnam.

Ph.D. ACTIVITIES

Ph.D. (Botany) Degree awarded (2017)

Pradhan, S. (2017). Micro-propagation and *ex-situ* conservation of *Cymbidium aloifolium* (L.) Sw., a threatened medicinal orchids of Nepal through artificial seed technology (Supervisor: Prof. Dr. B. Pant).

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**).

Bhattarai, K.P. 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. 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**).

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**)

Poudel, M.R. Tissue culture, phytochemistry and pharmacological evaluation of some medicinal *Dendrobium*. (Supervisor: Prof. Dr. B. Pant). (Date of registration: **2070-03-16**)

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**)

RESEARCH PUBLICATIONS 2017

Adhikari, H.S. and **Jha, S.K.** 2017. Postharvest microbial contamination in oyster mushroom and their management using plant essential oils. *Bio Bulletin*, **3**(1): 104-108.

Aryal, H.P. 2017. Some pteridophytes of medicinal importance from Dang District of West Nepal. *Gantayabya*. **1**(7): 33-38. ISSN: 2565- 4764.

Aryal, H.P. 2017. A protocol on *in-vitro* propagation of Arbuscular Mycorrhizal Fungi using root organ culture technique. *Tribhuvan University Journal*. **31**(1&2), ISSN: 2091-0916.

Aryal, H.P. and Budhathoki, U. 2016. *Termitomyces* R. Heim from Rupandehi District, Nepal. *Journal of Indian Phytopathology*. **69**(4): 407- 410.

Aryal, H.P. and Budhathoki, U. 2016. *Termitophilous* fungi in relation to different ethnic groups in Nepal. *The Journal of University Grants Commission Nepal*, ISSN: 2350-8566. **5**(1): 53-58.

Aryal, H.P. and Budhathoki, U. 2017. New report of *Termitophilic* fungi from Nepal. *Journal of Basic and Applied Plant Sciences*. **1**(1): 104. Open Access.

Baniya, R. K., **Baniya, C. B.**, Mou P. and Ge. J. 2017. Prey selection by tiger (*Panthera tigris tigris*) in Shuklaphanta Wildlife Reserve Nepal. *International Journal of Sciences*, **6**: 90-99.

Bhattacharjee, A., Anadón, J.D., Lohman, D.J., Doleck, T., Lakhankar, T., **Shrestha, B.B.**, Thapa, P., Devkota, D., Tiwari, S., Jha, A., **Siwakoti, M.**, Devkota, N.R., Jha, P.K. and Krakauer, N.Y., 2017. The impact of climate change on biodiversity in Nepal: current knowledge, lacunae, and opportunities. *Climate*, **5**(4): 80. doi:10.3390/cli5040080.

Bhattarai, S. and **Rajbhandary, S.** 2017. Pteridophyte flora of Manaslu Conservation Area, Central Nepal. *American Journal of Plant Sciences*, **8**: 680-687. <https://doi.org/10.4236/ajps.2017.84047>

Chacón J., **Siwakoti, M.**, Hilger, H.H. and Weigend, M. 2017. Dwarves on the roof of the world: A taxonomic revision of the Himalayan Lasiocaryeae Weigend (Boraginaceae). *Phytotaxa*, **297** (1): 001-014. <https://doi.org/10.11646/phytotaxa.297.1.1>.

Chand M.B., **Paudel, M.R.** and **Pant, B.** 2016. The antioxidant activity of selected wild orchids of Nepal. *Journal of Coastal Life Medicine* **4**: 731-736.

Chapagain A., Chaudhary R.P. and **Ghimire S.K.** 2017. Variation in leaf biomass and fruit output of *Juniperus indica* along an elevation gradient in north-central Nepal. *Banko Jankari*, **27**(1): 3-10.

Devkota A. and Jha, P.K. 2016. Variation in growths and yield of *Centella asiatica* (L.) from different eco-regions of Nepal. *Physiological Ecology and Environmental Science*, **7**(1&2): 28-28.

Devkota A and Sahu, A. 2017. Assessment of phytochemical screening and antifungal activity of *Parthenium hysterophours* L. *Biological Forum – An International Journal*, **9**(1): 14-19.

Ghimire S.K. 2017. Monitoring responses of alpine vegetation to climate change using the GLORIA methodology in the Nepal Himalaya. In: *Regional Orientation on Long Term Environmental and Socio-ecological Monitoring, 14–18 November 2016, Pokhara, Nepal* (ICIMOD), pp. 29-31. ICIMOD Workshop Report. ICIMOD, Kathmandu, Nepal.

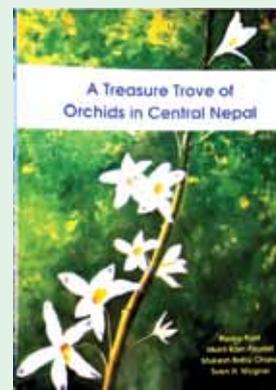
Jha, S. K. and Balami, S. 2016. Nutritive value of some wild edible macro-fungi from Devdaha, Rupandehi District, Nepal. *J. Biodiversity Conservation Bioresource Management*, **2**(2): 19-26.

Jha, S.K. 2017. Management of diseases in Sissoo (*Dalbergia sisso*Roxb.) and their economic importance-A Review. *Ban Sanchar* **2**(4): 53-57.

Jha, S.K. 2017. Today's requirements of integrated pest management. *Revoscience*, **6** (8): 20– 21.

Luitel, D.R., **Siwakoti, M.**, Jha, P.K., Jha, A.K. and Krakauer, N. 2017. An overview: distribution, production, and diversity of local landraces of buckwheat in Nepal. *Advances in Agriculture*, 2017: Article ID 2738045, 6 pages <https://doi.org/10.1155/2017/2738045>.

Luitel, D.R., **Siwakoti, M.**, Jha, P.K., Jha, A.K. and Krakauer, N. 2017. Climate, distribution and cropping pattern of finger millet in Nepal: A Review. *International Journal of Agriculture and Environmental Research*, ISSN: 2455-6939, **3**(5): 3854-3868.



Pant, B., M.R. Paudel, M.B. Chand, S.H. Wagner. 2016. *A Treasure Trove of Orchids in Central Nepal*. Central Department of Botany, Tribhuvan University, Kathmandu, Nepal.

Orchids are one of the most beautiful plant species in nature and most popular for local traditional medicine, horticulture and international trade. The book highlights the various dimensions of orchids, such as general introduction, socio-environmental impacts, threats, efforts and methods to conserve the orchid diversity. The book will be useful to researchers, students, naturalists, orchid lovers, policy makers and common people.

Pathak, R.P. and **Baniya, C.B.** 2016. Species diversity and tree carbon stock pattern in a community-managed tropical *Shorea* forest in Nawalparasi, Nepal. *International Journal of Ecology and Environmental Sciences*, **42** (S): 3-17.

Paudel, M.R., Chand, M.B., and **Pant, B.** 2017. Cytotoxic activity of antioxidant- riched *Dendrobium longicornu*. *Pharmacogn J.* **9** (4): 499-503.

Rana H.K., Rana S.K. and **Ghimire S.K.** 2017. Distribution pattern and species richness of Liliaceae in the Nepal Himalaya. *Our Nature*, **14** (1): 22-29.

Rana S.K., Rana H.K., **Ghimire S.K.**, Shrestha K.K. and Ranjitkar S. 2017. Predicting the impact of climate change on the distribution of two threatened Himalayan medicinal plants of Liliaceae in Nepal. *Journal of Mountain Science*, **14**(3): 558-570.

Regmi, T., **Pradhan, S.** and **Pant, B.** 2017. *In vitro* mass propagation of an epiphytic orchid, *Cymbidium aloifolium* (L.) Sw., through protocorm culture. *Plant Biotechnology Journal International*, **19**(1): 1-6. DOI: 10.9734/BJI/2017/34891.

Sah, A.K., **Baniya, C.B.**, Baral, H. S. and Mandal, R.A. 2017. Population status and diurnal behaviour of the Red-Headed Vulture (*Sarcogyps calvus*) in Anbu Khaireni, Tanahu, Nepal. *International Journal of Research Studies in Zoology (IJRSZ)*, **3**(2): 56-65.

Shrestha, B.B., Ranjit, J.D. and **Siwakoti, M.** 2017. Status of invasive alien plants in Nepal. In: *Proceedings of Second National Workshop on Conservation and Utilization of Agriculture Plant Genetic Resources in Nepal*, Joshi BK, KC HB, Acharya AK (eds.). National Agriculture Genetic Resources Center (NAGRC), Fruit Development Directorate (FDD), Department of Agriculture (DoA) and Ministry of Agriculture Development (MoAD), Kathmandu, p 446-452.

Shrestha, B.B., Budha, P.B., Pagad, S. and Wong, L.J. 2017. Global register of introduced and invasive species Nepal. Invasive Species Specialist Group ISSG. Checklist Dataset <https://doi.org/10.15468/4r0kkr> accessed via GBIF.org (also available on: <http://griis.org/>).

Tamrakar, P., Shakya, S.K., **Baniya, C.** and Pant, B.R. 2017. Water quality management in Kathmandu Valley. In *Proceedings of the seminar on Waste water*, B.R. Pant, A.B. Basnet Chhetri and B. Acharya (Eds). Organizer: Nepal Academy of Science and Technology, Khumaltar, Lalitpur, pp. 13-22.

Tamrakar, P., Shakya, S.K., **Baniya, C.** 2017. Physico-chemical and bacteriological composition in a metropolitan drinking water distribution system in Kathmandu. *Journal of Institute of Science and Technology*, **22**(1): 159-164.

Thapa, L.B., Kaewchumnong, K., Sinkkonen, A. and Sridith, K. 2016. Impacts of invasive *Chromolaena odorata* on species richness, composition and seedling recruitment of *Shorea robusta* in a tropical Sal forest, Nepal. *Songklanakarin Journal of Science & Technology*, **38**(6): 683-689.

Thapa, L.B., Kaewchumnong, K., Sinkkonen, A. and Sridith, K. 2017. Plant invasiveness and target plant density: high densities of native *Schima wallichii* seedlings reduce negative effects of invasive *Ageratina adenophora*. *Weed Research*, **57**(2): 72-80.

Tiwari, R.M., **Shrestha, B.B.** and Kohyama, T.S.. 2017. Topographic and anthropogenic factors shaping subalpine

Abies spectabilis forest in Langtang National Park, Eastern Himalaya. *Eurasian Journal of Forest Research* **20**:1-9.

MASTER THESES 2017

Adhikari, H.S. 2017. Postharvest loss in culinary mushroom and their management using plant essential oils. (Supervisor: Dr. S.K. Jha)

Awal, R. 2017. Effect of altitudinal gradient in the biological activities of *Berberis aristata* and *Berberis asiatica*. (Supervisor: Dr. G.P. Joshi and Co-supervisor: Dr. D.R. Pant).

Awasthi B. 2017. Exploitation of caterpillar fungus in Upper Chameliya valley, Darchula, Nepal: Harvesting trend and its impact on population ecology of alpine medicinal and aromatic plants. (Supervisor: Dr. S.K. Ghimire).

Banjade, S. 2017. Naturalized plant species in Modi watershed of Annapurna Conservation Area, Nepal. (Supervisors: Prof. Dr. M. Siwakoti and Dr. B.B. Shrestha).

BC, S.B. 2017. Comparative study of mushrooms cultivation in Kathmandu valley. (Supervisor: Dr. C.P. Pokhrel).

Bhandari, B. 2017. Comparative study of macro-fungi in different forest types of Boshan Community Forest, Kathmandu, Central Nepal. (Supervisor: Dr. S.K. Jha)

Chalise P. 2017. Distribution of vascular plants and variation in plant functional traits along a subalpine-alpine gradient in Manang, Central Nepal. (Supervisor: Dr. S.K. Ghimire).

Chataut, G. 2017. Diversity of naturalized plant species across forest types in mid-hills of Central Nepal. (Supervisors: Prof. Dr. M. Siwakoti and Dr. B.B. Shrestha).

Dhakal, S. 2017. Diversity of naturalized plant species across vegetation types in Tarai and Siwalik regions of Central Nepal. (Supervisor: Dr. B.B. Shrestha).

Dhungana, S. 2017. Study on nutritional values of *Moringa oleifera* L. leaves and pods from three different places of Nepal (Supervisor: Prof. Dr. B. Pant)

Dhungel, S. 2017. Nutritional and phytochemical profiling of fruit extracts of selected *Berberis* from Nepal. (Supervisor: Dr. D.R. Pant and Co-supervisor: Dr. G.P. Joshi).

Dumre, T. K. 2017. Community structure and regeneration status of community managed sal (*Shorea robusta* Gaertn.) forests in Rupandehi District, Western Nepal. (Supervisor: Dr. A. Devkota).

Ghimire, P. 2017. Plant species diversity and tree carbon stock in Daphne Community Forest, Kuirepani, Dang, Nepal. (Supervisor: Dr. C.B. Baniya).

Joshi, P.R. 2017. Alpha amylase inhibitory assay and cytotoxic activity of selected wild orchids of Nepal. (Supervisor: Prof. Dr. B. Pant).

Karki N. 2017. In vitro seed germination and seedling development of *Dendrobium crepidatum* Griff. and *Dendrobium longicornu* Lindl. (Supervisor: Prof. Dr. B. Pant).

Khadka, A. 2017. Climatic trends, farmers' perception on climate change and its impact on agro-ecosystem services in organic and conventional tomato farms in Salyan, Nepal. (Supervisor: Dr. G.P. Joshi and Co-supervisor: Dr. C.P. Pokhrel).

- Khaniya, L. 2017. Status of invasive alien plant species in Community Managed Forests: A case of Sundari and Dhuseri Community Forests of Nawalparasi District, Central Nepal. M.Sc. BEM, TU. (Supervisor: Dr B.B. Shrestha).
- Khatiwada, H. 2017. Karyomorphological characterization of wheat hybrid lines carrying chromosomes of *Thinopyrum elongatum* (EE) and *Aegilops cylindrica* (2C). (Supervisor: Dr. G.P. Joshi and Co-supervisor: Dr. D.R. Pant).
- Kumal, K. 2017. Preliminary phytochemical screening and antibacterial activities of methanolic extracts of selected *Mistletoes* from Kathmandu valley. (Supervisor: Dr. G.P. Joshi and Co-supervisor: Dr. D.R. Pant).
- Maharjan, S. and Sundas R. 2017. Qualifications of heavy metal deposition in Lichens of Kathmandu valley. Joint thesis submitted to Kantipur Valley College, affiliated to Purwanchal University. (Supervisor: N. Munakarmi and Co-supervisor: Dr. C.B. Baniya).
- Paneru, S.R. 2017. Post-harvest loss of wheat and its impact on food security: A study of Raikwar VDC Kanchanpur, Nepal. (Supervisor: Dr. C.P. Pokhrel and Co-supervisor: Dr. G.P. Joshi).
- Pokhrel, B. 2017. Mushroom diversity of Amrit Community Forest Kapilvastu. (Supervisor: Dr. C.P. Pokhrel).
- Poudel, P. 2017. Carbon stock and tree regeneration of *Shorea robusta* in community managed forest in Tanahun District. (Supervisor: Dr. A. Devkota).
- Pudasaini, S. 2017. In vitro production and germination of artificial seed of *Vanda tessellata* (Roxb.) Hook. ex G. Don. (Supervisor: Dr. S. Pradhan).
- Raut, S. 2017. Preliminary phytochemical studies on plant extracts of selected *Hypericum* species from Nepal. (Supervisor: Dr. D.R. Pant and Co-supervisor: Dr. G.P. Joshi).
- Rawal, D. 2017. Mushrooms of Nubri valley, Manaslu Conservation Area, Gorkha District, Nepal. (Supervisor: Dr. C.P. Pokhrel).
- Regmi, S. 2017. Antifungal properties of plant essential oils against *Fusarium oxysporum* Schlecht. and *Aspergillus niger* van Tiegh. from papaya. (Supervisor: Dr. S.K. Jha).
- Rijal, B. 2017. Characterization of some plants of Dhading District, Central Nepal to harness the bio-energy. (Supervisor: Prof. Dr. K.K. Shrestha).
- Sah, A. 2017. Population status and diurnal behaviour of the red-headed vulture (*Sarcogyps calvus*) at Anbu Khaireni, Tanahun, Nepal. M. Sc. BEM, TU. (Supervisor: Dr. C.B. Baniya).
- Sharma, P. 2017. Evaluation of antioxidant and antimicrobial activities of leaf extracts of different species of *Rubus* L. from Kathmandu valley. (Supervisor: Dr. D.R. Pant and Co-supervisor: Dr. G.P. Joshi).
- Sharma, S. 2017. Traditional knowledge and uses of medicinal plants in Belahari VDC of Banke District. M. Sc. Thesis by College of Applied Sciences, Nepal (Affiliated to Tribhuvan University), Kathmandu, Nepal. Supervisor: Prof. Dr. M.P. Panthi).
- Shrees, K. 2017. Tree Carbon stock of Mountain Forest in Central Nepal. (Supervisors: Dr. A. Devkota and Dr. B.B. Shrestha).
- Shrestha, H. S. 2017. Floristic study of fern and fern allies in altitudinal gradient from Besishahar to lower Manang, western Nepal. (Supervisor: Prof. Dr. S. Rajbhandary).
- Shrestha, R. 2017. Identification of endophytic fungi from roots of wild *Dendrobium moniliforme* and *D. transparens*. (Supervisor: Prof. Dr. B. Pant).
- Shrestha, S. 2017. Seed mycoflora, pathogenicity and control of spinach. (Supervisor: Dr. C.P. Pokhrel).
- Shrestha, S. 2017. Taxonomic study of *Aster* L. (Asteraceae) of Nepal. (Supervisor: Prof. Dr. S. Rajbhandary and Co-supervisor: Dr. M.B. Rokaya).
- Subedi, R. 2017. Ethnobotanical study of Panchase protected forest, Kaski District, Central Nepal. (Supervisor: Dr. S.K. Ghimire).
- Thagunna, K. 2017. Bee flora of Khumal Tar Agricultural Research Station, Lalitpur, Nepal. (Supervisor: Dr. C.B. Baniya).
- Thapa Magar, S. 2017. Richness and distribution pattern of palatable and unpalatable plant species in Subalpine-Nival gradient in Chameliya valley, North west Nepal. (Supervisor: Dr. S.K. Ghimire).
- Thapa, S. 2017. Naturalized plant species in Marsyangdi River Valley, Central Nepal. (Supervisors: Prof. Dr. M. Siwakoti and Dr. B.B. Shrestha).

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 Pant (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. 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)
 Dr. Chandra Prasad Pokhrel (Teaching Assistant)

Supporting staff

Mr. Prakash Krishna Karmacharya (Account Officer)
 Mr. Min Bahadur Khatri (Section Officer)
 Mr. Shailendra Kumar Singh (Lab. Officer)
 Mr. Bhakta Kumar Pradhan (Section Officer)
 Mr. Janak Ram Parajuli (Senior Admin. Assistant)
 Mr. Shiva Pandey (Lab. Assistant)
 Mr. Ganga Thapa (Sr. Lab. Boy)
 Mr. Vishnu Thapa (Sr. Lab. Boy)
 Ms. Radha Sharma (Asst. Store Keeper)
 Mr. Hari Krishna Thapa (Senior, Office Assistant)
 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 Pode (Sweeper)

BOTANICAL STUDENT SOCIETY (BOSS)

The executive body was elected on November 25, 2016 (2073.8.10) by the students of M.Sc. Ist and IIIrd year.

Executive members of BOSS (2016/2017)

President: Subash Nyaupane (III Sem.)
Vice-President: Bishna K. Joshi Sharma (II Sem.)
Secretary: Ashis Prakriti Dhital (II Sem.)
Joint Secretary: Prativa Paneru (III Sem.)
Treasurer: Bikram Jnawali (III Sem.)
Members: Sushila Sharma (III Sem.)
 Krishna Chand (III Sem.)
 Seema Baniya (III Sem.)
 Nirjan Oli (I Sem.)
 Tek Bdr. Darji (I Sem.)
 Benup Adhikari (I Sem.)

STUDENT ACTIVITIES

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. old second year students (2017-2019) on May 21, 2017. The program was chaired by Mr. Subash Nyaupane (President, BOSS), and Prof. Dr. M. Siwakoti (Head CDB) was the Chief Guest.



The organisers expressed their affection to the new comers and good wishes for their future to the seniors. Mr. Vikram Gewali gave the welcome address. Mr. Suresh Paeru (Former President, BOSS), Ms. Pratikchy Chalise, Mr. Janak Ram Parajuli, Prof. M.P. Panthi, Prof. M. Siwakoti and Mr. S. Nyaupane gave their remarks. The students organised cultural program including dance, song and drama in between the program.

A short interaction program among 1st, 2nd and 4th sem. students was held in CDB on June 28, 2017. The interaction program was held between teachers, students and staff, everyone fully cooperated in the program.

BOSS organised plant tagging programme at Central Department of Botany on July 7, 2017. Most of the plant present at the premises of Central department of Botany was tagged and list of orchids found in the department is listed on a board. The plant tagging was done by Prof. Dr. M.P. Panthi (Acting Head). All the teachers, administrative staff and students from the department attended the program.

BOSS organised *Gurupurnima* (Teachers day celebration) at Central Department of Botany on July 9, 2017. All the teachers attended the program. Students recited poems and cake was cut to mark the day.



BOSS, M. Sc. II Sem. Botany and BEM III Semester student's organized Teej program on August 21, 2017 (Bhadra 5, 2074) at Central Department of Botany, TU. During the program Mr. Subash Nyaupane (President, BOSS) chaired the program and Prof. Dr. M. Siwakoti (Head, CDB) was the Chief Guest. Prof. Dr. M. Imadatul Hoque, Dean of Biological Science, University of Dhaka, Bangladesh also attended the program and had opportunity to learn about the culture of our country. 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.



Students Welcome and Farewell

Third Semester student's M. Sc. BEM students organized "Welcome and Farewell Program" for new M. Sc. BEM first semester and fourth semester students on August 20, 2017 (Bhadra 4, 2074) at Central Department of Botany, TU. Ms. Sabina Basnet chaired the program and Prof. Dr. M. Siwakoti (Head CDB) was the Chief Guest in the program. Basu Dev Poudel gave the welcome address and cited a poem as to welcome the new batch.

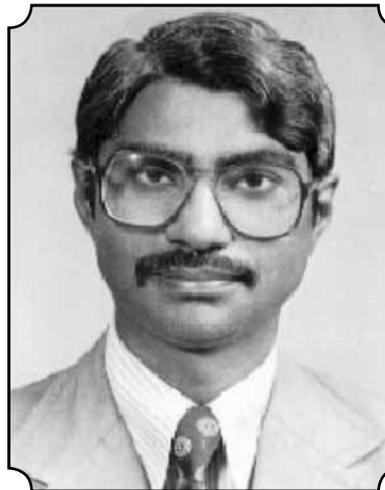


First semester students Sharmila Thapa, and from the outgoing batch Devendra Pandey shared their experience and gave their remarks. Subash Nyaupane (President, BOSS), Prof. Dr. B. Pant, Prof. Dr. S. Rajbhandary, Prof. Dr. P.K. Jha, and Prof. Dr. M. Siwakoti gave their remarks and the program was concluded by Ms. Sabina Basnet with a concluding remark.

During the program Prof. Dr. M. Siwakoti and Prof. Dr. S. Rajbhandary were also felicitated by the students. The program was conducted by Rabindra Bhattarai and Kalpana Dangol. After the welcome, program the students organised a cultural program.

OBITUARY

Prof. Dr. Braj Nandan Prasad (1950-2017)



Prof. Dr. Braj Nandan Prasad was one of the senior members of the Central Department of Botany, TU. Ever since he joined Tribhuvan University as a Lecturer in 1973, Prof. Prasad had been actively involved in various study related activities at the Central Department of Botany besides

carrying out his personal research.

Born in Sakhuwa, Rautahat in 1950, Prof. Prasad graduated from Bihar University, India in 1969 and completed his M.Sc. from Tribhuvan University in 1973. He later obtained the Ph.D. degree from India in 1981. He was promoted to Professor of Botany in 1997.

A specialist in plant physiology and plant biotechnology, Prof. Prasad had published more than 50 research papers in national and international journals. He had successfully carried out several research projects. He had supervised five Ph. D. scholars and more three dozen M.Sc. students for their dissertation work.

Prof. Prasad had visited following countries: India, Bangladesh, Pakistan, Thailand, China, Hong Kong, U.K., USA, Germany, The Netherlands, Singapore, Switzerland, Japan, Brazil, Italy, France, and Chile, as a visiting scientist or participated in conferences.

Prof. Prasad was the General Secretary of Nepal Biotechnology Association; an associate member of Third World Academy of Sciences, Italy; vice-president of Association of Plant Physiologists of SAARC (APPSC) since 1997 and Nepal Botanical Society since 1995. He was the joint secretary of APPSC (1988-97), the member secretary of APINMAP (1993-97), and president of Tribhuvan University Botanical Society (1991-93). He was also a member of Indian Society for Plant Physiology and Indian Botanical Society.

As an outcome of his long experience, Prof. Prasad had edited a number of publications like "Modern Approach to Botany", "Role of Biotechnology in Agriculture", and "Biotechnology and Biodiversity in Agriculture/Forestry". Prof. Prasad had also been awarded Fellow of Botanical Society by Indian Botanical Society in 1984.

Prof. Prasad took early retirement from the department in 2006.

M.Sc. BIODIVERSITY and ENVIRONMENTAL MANAGEMENT STUDENTS 2016-2019

M.Sc. BEM Ist Semester Student (2017-2019)

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

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

Satiz chandra Poudel	Chitwan
Rabindra Bhattarai	Nawalparasi
Shobha Rawat	Dang
Basu Dev Poudel	Chitwan
Shikhar Rai	Bhojpur
Sabina Basnet	Rautahat
Bikram Ghimire	Biratnagar
Subash oli	Dang
Jeewan Sapkota	Dhangadi
Sangam Acharya	Dang
Sujan Shrestha	Bhaktapur
Yoshoda Panthy	Lamjung
Kalpna Dangol	Nuwakot
Mahesh Raj Bist	Darchula
Ranjan Gurung	Dhading

M.Sc. BOTANY STUDENTS 2017-2019

Gaurav Shrestha	Kathmandu
Ashish Dharmi	Biratnagar
Richa Balayar	Kailali
Santosh Parajuli	Udayapur
Srijana Paudel	Lamjung
Pralhad Karki	Dhading
Suman Poudel	Chitwan
Lesar Unat Basukala	Bhaktapur
Kajol Basukala	Bhaktapur
Madhu Bilash Ghimire	Kanchanpur
Priyanka Bhatta	Mahendranagar
Bipana Shiwakoti	Dhokha
Rojina Basi	Bhaktapur
Nimble Giri	Bhaktapur
Rabindra Thapa	Bhaktapur
Sandeep Dhakal	Rupendehi
Sujita Khadka	Dang
Roshan BC	Nepalgunj
Himal Yonjon	Ramechhap
Sita Gyawali	Syangja
Sujan Dahal	Banepa
Arun Nagarkoti	Lalitpur
Oshin Shrestha	Makwanpur
Manju Kanu Baniya	Butwal
Manisha Dhakal	Panchthar

Achut Parajuli	Parvat
Alina Shrestha	Doti
Kanchan Devi Upadhyay	Bajura
Renu Chaudhary	Kailali
Bijay K. Chaudhari	Saptari
Manisha Timilsina	Parsa
Santoshi Khatri	Makwanpur
Sabita Chhengutala	Bhaktapur
Mina K.C.	Dang

M.Sc. Botany IIIrd Semester Student (2016-2016)

Plant Biotechnology and Biochemistry

Anu Shrestha	Lalitpur
Bir Bahadur Thapa	Kailali
Laxmi Dhakal	Surkhet
Prithivi Raj Gurung	Hetauda
Purna Bahadur Oli	Salyan
Shrijana Adhikari	Lamjung
Sirjana Adhikari	Palpa
Subhash Kafle	Nawalparasi

Plant Pathology and Applied Mycology

Anita Kumari Tharu	Bardiya
Laxmi Khanal	Dankuta
Nirjan Oli	Dang
Priyanka Shah	Dhangadi
Puspa Bhandari KC	Lamjung
Reetu Deuba	Dhangadi
Seeta Pathak	Syangja
Sita Lamichhane	Lamjung
Tej Bahadur Darji	Tanahu

Plant Systematics and Biodiversity

Ashis Prakriti Dhital	Ruku
Bijay Khadka	Bhaktapur
Dhurba Khakurel	Kabre
Kisha Thapa Chhetri	Gorkha
Menuka Poudel	Dhangadi
Neelam Pandey	Baitadi
Sabita Aryal	Butwal
Sangram Karki	Dolakha
Shrijana Khatri	Gorkha

Ecology and Resource Management

Benup Raj Adhikari	Ilam
Bishna K Joshi Sharma	Dhangadi
Deepa Roka	Chitwan
Mahendra Gahatraj	Palpa
Prativa Budhathoki	Hetauda
Priti Dhakal	Morang
Sajita Pokharel	Dang
Suneeta Bhatta	Mahendranagar
Surya Prakash Sharma	Parvat

