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Notes on the First Sino-Nepal Joint Botanical Expedition to Bajhang, West Nepal

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Abstract

As part of Flora of Pan-Himalaya project, the first-ever Sino-Nepal Joint Botanical Expedition was carried out in Bajhang district of West Nepal. Here we summarize the objectives and achievements of this collaborative venture. This joint work included field visit in West Nepal supplemented by herbarium consultation in Nepal and China. During the fieldwork, herbarium specimens of 625 species were collected.The specimens are preserved at National Herbarium and Plant Laboratories (KATH) and Chinese National Herbarium (PE). Of the total collection, a list of 503 species is presented here.*Itea nutans* Royle (Iteaceae), collected during the expedition, is reported as a new generic and family record for the flora of Nepal. The description, distribution notes and collection details of the newly reported taxon are provided.

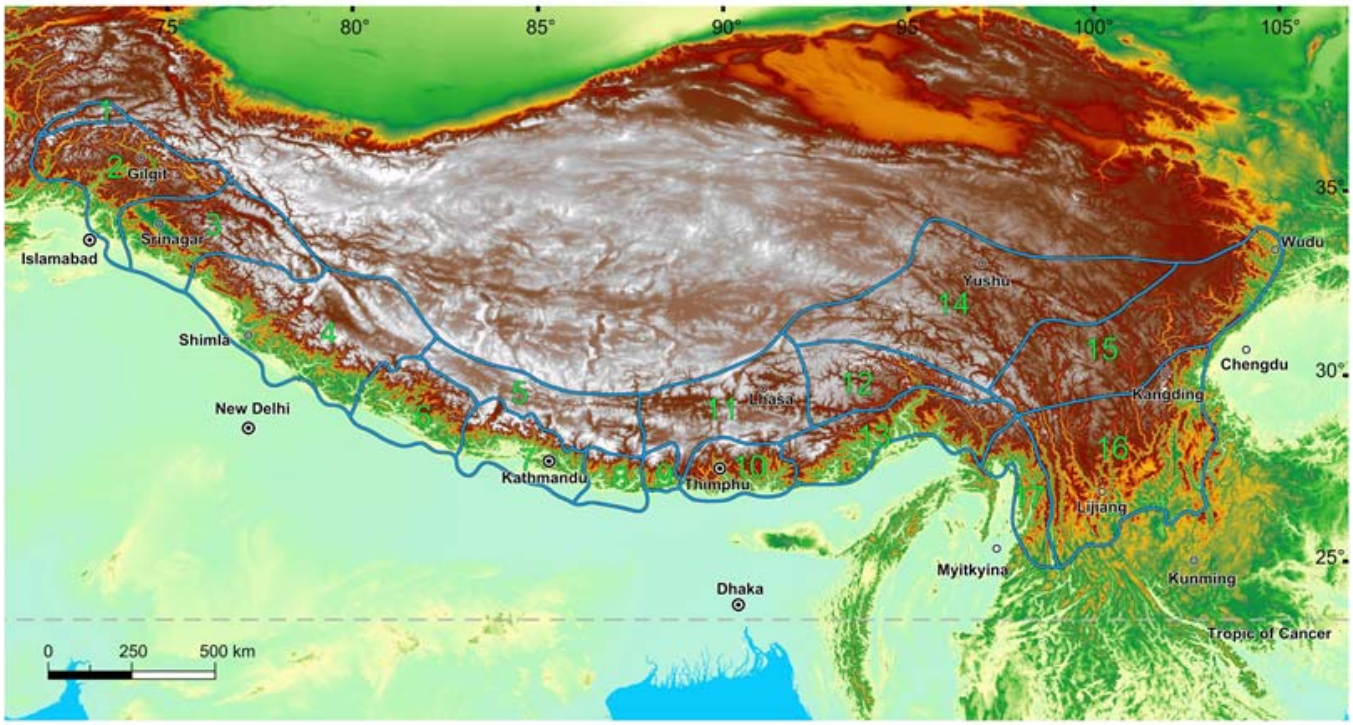
Keywords: Pan-Himalaya,Flora, *Itea nutans*, New record

Introduction

The Himalaya is one of the most extensive, beautiful and revered ranges on earth, and its plants are equally as enchanting as the ranges themselves. The Pan-Himalaya (the Himalaya and adjacent regions) forms a natural geographic unit, which includes the northeastern corner of Afghanistan, northern Pakistan, northern India, Nepal, Bhutan, northern Myanmar, and southwest China (Hong, 2015). Plants of some of the countries are reasonably well known, while those of the others are poorly known, and the historical efforts to bring the available information together and improve its quality by trans-boundary cooperation are equally important. To fill the knowledge gap and to usher in an era of close cooperation among the stakeholders, The Flora of Pan-Himalaya (FLPH) project was initiated; it is an international collaboration project to document the plant biodiversity within this region. The mission of FLPH is to better understand plant diversity in the Pan-Himalaya and toconserve the rich and precious plant diversity in this region. Coordinated by Chinese botanists, it was started in the year 2011 and intends to be a long term project. The flora will cover ca. 20,000 species of vascular plants in 50 volumes (ca. 80 books).

Pan-Himalaya forms a natural phytogeographical unit, ranging from the Vakhan Corridor in the west to the Hengduan Mountains in the east through the Karakoram and the Himalaya in between. This region is divided into 17 subregions: Vakhan, N Pakistan, Jammu & Kashmir, U Ganga & Indus, U Yarlung Zangbo, W Nepal, C Nepal, E Nepal, Sikkim & Darjiling, Bhutan, M Yarlung Zangbo, L Yarlung Zangbo, Yarlung Zangbo-Brahmaputra, Tangut, N Hengduan, S Hengduan, and U Irrawaddy (Figure 1)(Hong, 2015).

A number of botanical expeditions has been organized in Nepal focusing different ecological regions over the years either from within the country or jointly with international organizations; Rajbhandari (2016) has summarized the historical account of the explorations carried out in West Nepal highlighting the significant contributions made by the teams led by many prominent botanists and collectors including Scully (1876) in Mahakali valley, Duthie (1884-1886) in Garhwal, Kumaon to West Nepal (Nampa gadh), Bis Ram, K.N. Sharma



Subdivisions of the Pan-Himalaya

1.Vakhan; 2.N Pakistan; 3. Jammu & Kashmir; 4. U Ganga & Indus; 5. U Yarlung Zangbo; 6. W Nepal; 7. C Nepal; 8. E Nepal; 9. Sikkim & Darjiling; 10. Bhutan; 11. M Yarlung Zangbo; 12. L Yarlung Zangbo; 13. Yarlung Zangbo-Brahmaputra; 14. Tangut; 15. N Hengduan; 16. S Hengduan; 17. U Irrawaddy.

Figure 1: Map showing the geographical range of the Pan-Himalaya

& B.L. Gupta (1929-1935) in Khaptad region, K.R. Rajbhandari (1983) in Mahakali zone, Suzuki (1991) in Bheri, Karnali and Seti zone, Ikeda (2009, 2012) in Khaptad and Api area and many others.

Despite the many botanical explorations that have been carried out in Nepal since the late 18th century to this date by many foreign and national agencies (Rajbhandari, 1976; Rajbhandari, 2016) amassing a bulk of specimens deposited in the herbaria within and outside the country, the bilateral collaborative research with the northern neighbor has just begun.

As it is evident, Nepal occupies the three important subregions of Pan-Himalaya, providing crucial habitats for the unique plant species. In an initiative to bolster the bilateral cooperation between China and Nepal in the field of botany and to document the plant wealth from the W Nepal, the first-ever Sino-Nepal Joint Botanical Expedition to Bajhang, Far West Nepal was organized and successfully carried out in 2017. The expedition was conducted from 9th – 21st September 2017, jointly by researchers from the Institute of Botany, Chinese Academy of Sciences (IBCAS) in collaboration with the Department of Plant Resources (DPR) and Research Centre for Applied Science and Technology, Tribhuvan University (RECAST, TU) from Nepal. In total, six researchers from the three institutes participated in the expedition led by Prof. Hai-nin Qin from IBCAS (Figure2), institutional affiliations of the participants is provided in Table 2.The primary focus of the expedition was to explore the Seti river valley, Bajhang district; however, some plant species along the Bhimdutt Highway and Jaya Prithvi Bahadur Singh Highway were also included, thus increasing the spatial coverage.

The herbarium specimens collected during the expedition were identified in Nepal and China, and a new record for Nepal was found. This paper aims to summarize the output of the expedition in terms of botanical novelties for the region and flora of Nepal.

Figure 2: Research team members with the supporting staffs at Dhalaun camp, Bajhang

Materials and Methods

Study area

The study area consisted mostly of Bajhang district of Seti zone, however, actual exploration started right from the lowland area of Kailali district. Specimens were collected alongside the roads, rivers and foot trails, mainly through the Bhimdutt Highway from Godawari (Kailali) to Khodpe (Baitadi), Jaya Prithvi Bahadur Singh Highway from Khodpe to Chainpur (Bajhang), from Chainpur along the Seti river upstream to Agara and thence forward along the foot trails to Dhalaun and adjoining areas. Details of the study area and exploration route are outlined in the map (Figure 3).

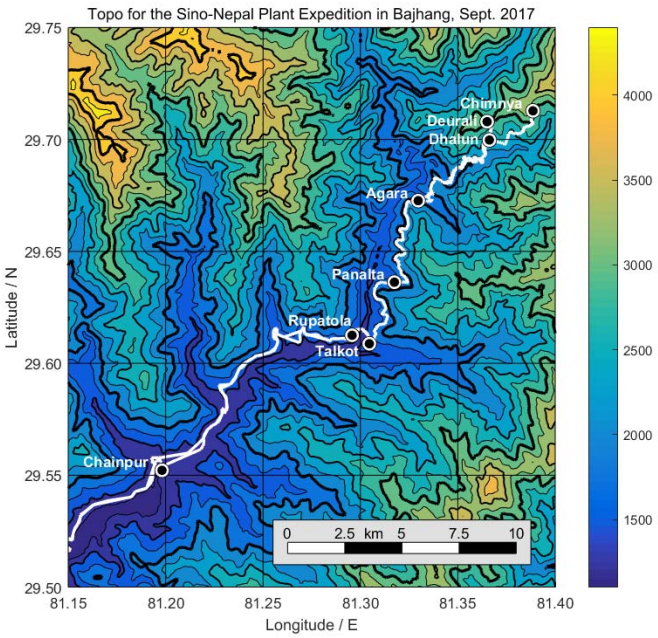


Figure 3: Collection route in Bajhang district (black dots in the map represent the major settlements and the camping sites)

Based on the already worked out plan, plant specimens were collected for herbarium preparation following the standard protocol (Forman & Bridson, 1989). For each specimen, maximum five duplicates were collected as per the availability, intended to be deposited at five important herbaria for Flora of Pan-Himalaya and Flora of Nepal, i.e. National Herbarium and Plant Laboratories (KATH), Chinese National Herbarium (PE), Tribhuvan University Central Herbarium (TUCH), Royal Botanical Garden Edinburgh Herbarium (E) and Herbarium of the University of Tokyo (TI). For thenationally protected and CITES-listed plants, only two specimens were collected, one each for KATH and TUCH. Following the fieldwork, specimens were identified through diverse means: expert opinion, use of standard literature (Hara et al., 1978; Polunin & Stainton, 1981; Stainton, 1984; Press et al., 2000; Wu & Raven, 2001) and herbarium consultation (KATH & PE).

Results and Discussion

During the expedition, total collection number reached 625, of which here we present a list of 503 identified species so far (Table 1), while the process of identification for the rest of the collected specimens is still underway.The list consists of enumeration of all the collections made during the field work irrespective of their recurrences as they represent different localities.

Among the observed species, 3 endemic plants-*Cirsium phulchokiense*, *Strobilanthes bheriense* and *Arenaria mukerjiana* are also reported from the region. Similarly, the study has shed light on the occurrence of invasive plants including *Ageratum haustonianum*, *Ageratum conyzoides*, *Erigeron karvinskianus*, *Bidens pilosa*, *Bidens biternata* and *Lantana camara*, that will help to study their distribution extent and impacts in future. Besides, this study has reinforced Bajhang district as a rich habitat for many medicinal plants that includes

Bergenia ciliata, *Swertia chirayita*, *Panax pseudoginseng*, *Senna tora*, *Taxus contorta*, *Artemisia dubia*, *Artemisia indica*, *Zanthoxylum armatum*, *Astilbe rivularis*, *Phyllanthus emblica* and *Calotropis gigantea*.

Going through the identification process, a shrub species was found intriguing and did not match with any of the previously reported species (Hara et al., 1979; Press et al., 2000, Shrestha et al., 2018; Rajbhandari & Rai, 2019) from Nepal. Later, the specimen was identified as *Itea nutans* Royle (Iteaceae).

Itea nutans was first described by Royle from Dehradun, Western Himalaya (Royle, 1839) as a member of family Saxifragaceae. Subsequently, Hooker (1879) mentioned the species as occurring in Garwhal and Kumaon at the elevation of 3000-5000 ft. Interestingly Royal Botanic Garden Edinburgh Herbarium (E) contains one specimen of *Itea nutans* collected from Nepal (Bhaskar Adhikari pers. comm. December 3, 2019). However, there is no mention of distribution of Iteaceae or *Itea* in the published volume of Flora of Nepal in the family account Saxifragaceae (Akiyama et al.,2011), neither the recently published literatures (Rajbhandari et al., 2011; Rajbhandari et al., 2015; Shrestha et al., 2018; Rajbhandari & Rai, 2019) has revealed the occurrence of the species in the country. Therefore, this paper is the first attempt to report the distribution of Iteaceae in Nepal.

Taxonomic treatment

Family: Iteaceae

Itea L. Sp. Pl. 1:199. 1753.

Shrubs to tree. Leaves alternate, petiolate, simple. Inflorescence terminal or axillary, racemose. Flowers pentamerous; ovary superior, bicarpellate, stigma capitate. Fruit a capsule.

About 27 species in the world, distributed from N America to Japan and South-East Asia through the Himalaya; one species in Nepal.

Itea nutans Royle, Illust. Bot. Himal. Mount. 226. 1835.Type: N. W. Himalaya, Dehra Dun, 2000 m, *Royle s.n.* (holotype: LIV).

Shrub, 3-5m tall. Stem with dark-grey bark. Leaves alternate, 5-15 cm long, 2-6 cm broad, ovate to elliptic-oblong, slightly tapering with acuminate apex; denticulate, adaxial surface glabrous, abaxialpubescent. Flowers greenish-white, ca. 2 mm long, borne in fascicles of 2-7, 10-20 cm long drooping racemes. Sepals ca. 1 mm long, as long as the calyx tube, linear, with acute apex, densely pubescent, persistent. Petals ca. 2.5 mm long, linear-oblong, erect, tips inflexed. Filaments 1.5 mm long, subulate. Anthers dorsifixed exerted. Ovary bilocular; styles grooved. Capsules 4 mm long, septicidally 2-valved.

Phenology: floweringApril to July, fruiting July to October.

Habitat: on moist slopes; 500-2000 m.

Distribution: W Himalaya; from Pakistan, Jammu & Kashmir (India) to W Nepal.

Specimen observed: W Nepal, Bajhang, Above Deuthala Kalanga River, 1000 m, 2017.9.20, Sino-Nepal Joint Expedition –H.N. Qin, P. Bhandari, T.R. Pandey, B.R. Subedee, Y.C. Yang & S.R. Zhang 620 (KATH) (Figure 4).

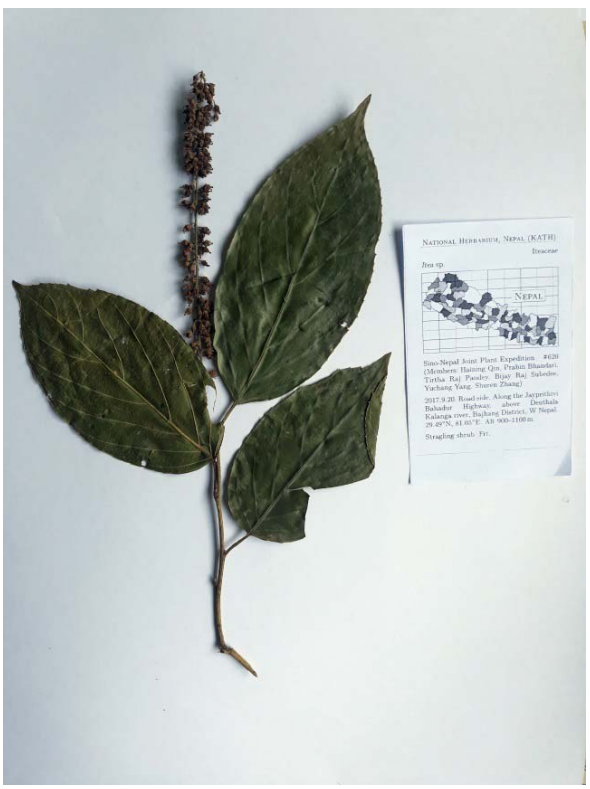


Figure 4: Herbarium specimen of *Itea nutans* (KATH)

Conclusion

This joint work has significantly contributed to represent the plant diversity of West Nepal in terms of total number of herbarium specimen collection, discovering new habitats and geographical range of endemic species, knowing the occurrence and expansion of invasive species and prospects of medicinal plants availability in the area.

Bilateral and multilateral cooperation among the botanical institutions is of key importance for better understanding the plant wealth of any region, and for the documentation and publication of flora account, periodic collection of herbarium specimens and reconfirming their taxonomic identity is undeniable. Exploring even the already represented region may often result in new records and may help to gather useful information regarding their distribution range, phenology, ecology, conservation status and impacts of climate change. The first Sino-Nepal Joint Expedition has therefore contributed to the better understanding of the flora of west Nepal. Also, one new record for Nepal has been added through the Sino-Nepal expedition, and it has paved the way forward for the prospects of many collaborative researches and scientific exchanges in the future.

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Table 1: List of Plant species collected during the expedition

S.N.	Collection Number	Family	Scientific name	Habit
1	1	Begoniaceae	*Begonia picta* Wall.	Herbs
2	2	Cyperaceae	*Fimbristylis dichotoma* (L.) Vahl	Herbs
3	3	Droseraceae	*Drosera peltata* Thunb.	Herbs, Insectivorous
4	6	Cyperaceae	*Bulbostylis barbata* (Rottb.) C.B. Clarke	Herbs
5	7	Polypodiaceae	*Lepisorus bicolor* (Takeda) Ching	Herbs
6	8	Commelinaceae	*Cyanotis axillaris* (L.) D. Don ex Sweet	Herbs
7	9	Cyperaceae	*Fimbristylis dichotoma* (L.) Vahl	Herbs
8	10	Myricaceae	*Myrica esculenta* Buch.-Ham. ex D. Don	Trees, Edible fruits
9	11	Lamiaceae	*Scutellaria discolor* Colebr.	Herbs
10	12	Cyperaceae	*Kyllinga brevifolia* Rottb.	Herbs
11	13	Fabaceae	*Flemingia strobilifera* (L.) W.T.Aiton	Herbs
12	15	Asteraceae	*Ageratum houstonianum* Mill.	Herbs, Invasive
13	16	Asteraceae	*Ageratum conyzoides* L.	Herbs, Invasive
14	17	Asteraceae	*Erigeron karvinskianus* DC.	Herbs, Invasive
15	18	Asteraceae	*Bidens pilosa* L.	Herbs, Invasive
16	19	Zingiberaceae	*Hedychium spicatum* Sm.	Herbs
17	21	Urticaceae	*Girardinia diversifolia* (Link) Friis	Herbs, Fibre yielding
18	22	Commelinaceae	*Commelina maculata* Edgew.	Herbs
19	23	Fabaceae	*Butea minor* Buch.-Ham. ex Baker	Shrubs
20	24	Lentibulariaceae	*Utricularia bifida* L.	Herbs, Insectivorous
21	26	Cyperaceae	*Eriophorum comosum* (Wall.) Nees	Herbs
22	28	Cyperaceae	*Carex vesiculosa* Boott	Herbs
23	29	Cyperaceae	*Carex filicina* Nees	Herbs
24	30	Cyperaceae	*Fimbristylis complanata* (Retz.) Link	Herbs
25	31	Cyperaceae	*Fimbristylis dichotoma* (L.) Vahl	Herbs
26	32	Urticaceae	*Girardinia diversifolia* (Link) Friis	Herbs
27	33	Begoniaceae	*Begonia dioica* Buch.-Ham. ex D. Don	Herbs
28	36	Balsaminaceae	*Impatiens urticifolia* Wall.	Herbs
29	37	Cyperaceae	*Carex filicina* Nees	Herbs
30	39	Pteridaceae	*Adiantum philippense* L.	Herbs
31	40	Amaranthaceae	*Achyranthes aspera* L.	Herbs
32	41	Commelinaceae	*Commelina diffusa* Burm.f.	Herbs
33	42	Cyperaceae	*Cyperus compressus* L.	Herbs
34	43	Cyperaceae	*Cyperus compressus* L.	Herbs
35	44	Cyperaceae	*Fimbristylis ovata* (Burm.f.) J.Kern	Herbs
36	45	Fabaceae	*Senna tora* (L.) Roxb.	Shrubs, Medicinal
37	46	Lamiaceae	*Scutellaria repens* Buch.-Ham. ex D.Don	Herbs
38	47	Vitaceae	*Leea asiatica* (L.) Ridsdale	Herbs
39	48	Fabaceae	*Mimosa rubicaulis* Lam.	Herbs
40	49	Asteraceae	*Tridax procumbens* (L.) L.	Herbs
41	50	Commelinaceae	*Murdannia nudiflora* (L.) Brenan	Herbs
42	51	Fabaceae	*Desmodium laxiflorum* DC.	Shrubs
43	52	Vitaceae	*Ampelocissus divaricata* (Lawson) Planch.	Climbers
44	53	Convolvulaceae	*Ipomoea indica* (Burm.) Merr.	Herbs
45	54	Malvaceae	*Sida rhombifolia* L.	Shrubs
46	55	Boraginaceae	*Cynoglossum lanceolatum* Forssk.	Herbs
47	56	Buxaceae	*Sarcococca pruniformis* Lindl.	Herbs
48	57	Balsaminaceae	*Impatiens edgeworthii* Hook. f.	Herbs
49	58	Fumariaceae	*Corydalis chaerophylla* DC.	Herbs
50	59	Polygonaceae	*Polygonum recumbens* Royle ex Bab.	Herbs
51	60	Taxaceae	*Taxus contorta* Griff.	Trees, Medicinal

S.N.	Collection Number	Family	Scientific name	Habit
52	62	Poaceae	*Setaria parviflora* (Poir.) M.Kerguelen	Herbs
53	63	Asteraceae	*Artemisia indica* Willd.	Subshrubs, Medicinal
54	64	Asteraceae	*Xanthium strumarium* L.	Herbs
55	65	Polygonaceae	*Polygonum abbreviatum* Kom.	Herbs
56	67	Polygonaceae	*Fagopyrum acutatum* (Lehm.) Mansf. ex K.Hammer	Herbs
57	68	Asteraceae	*Galinsoga quadriradiata* Ruiz & Pav.	Herbs
58	69	Asteraceae	*Artemisia gmelinii* Weber ex Stechm.	Subshrubs
59	70	Ericaceae	*Lyonia ovalifolia* (Wall.) Drude	Trees
60	71	Betulaceae	*Alnus nepalensis* D. Don	Trees
61	72	Moraceae	*Ficus palmata* Forssk.	Shrubs
62	73	Poaceae	*Eleusine coracana* (L.) Gaertn.	Herbs, Cultivated
63	74	Urticaceae	*Boehmeria rugulosa* Wedd.	Shrubs
64	75	Urticaceae	*Boehmeria platyphylla* Buch.-Ham. ex D. Don	Herbs
65	76	Lamiaceae	*Callicarpa macrophylla* Vahl	Shrubs
66	79	Poaceae	*Arundinella setosa* Trin.	Herbs
67	80	Fabaceae	*Aeschynomene indica* L.	Herbs
68	81	Ranunculaceae	*Clematis roylei* Rehder	Climbers
69	82	Polygonaceae	*Persicaria barbata* (L.) H.Hara	Herbs
70	83	Melastomataceae	*Osbeckia stellata* Buch.-Ham. ex Ker Gawl.	Shrubs
71	84	Solanaceae	*Physalis angulata* L.	Herbs
72	85	Acanthaceae	*Barleria cristata* L.	Herbs
73	86	Urticaceae	*Urtica ardens* Link	Subshrubs
74	87	Solanaceae	*Datura stramonium* L.	Herbs
75	88	Gesneriaceae	*Rhynchoglossum obliquum* Blume	Herbs
76	89	Orchidaceae	*Vanda cristata* Wall. ex Lindl.	Herbs, Epiphytic
77	90	Acanthaceae	*Dicliptera bupleuroides* Nees	Herbs
78	91	Poaceae	*Oplismenus compositus* (L.) P.Beauv.	Herbs
79	92	Fabaceae	*Crotalaria prostrata* Willd.	Herbs
80	93	Mazaceae	*Mazus surculosus* D. Don	Herbs
81	95	Cyperaceae	*Cyperus cuspidatus* Kunth	Herbs
82	96	Linderniaceae	*Lindernia ciliata* (Colsm.) Pennell	Herbs
83	98	Linderniaceae	*Lindernia abyssinica* Engl.	Herbs
84	99	Fabaceae	*Desmodium triflorum* (L.) DC.	Herbs
85	100	Rubiaceae	*Oldenlandia corymbosa* L.	Herbs
86	102	Fabaceae	*Desmodium heterocarpon (*L.) DC.	Shrubs
87	103	Caryophyllaceae	*Drymaria cordata* (L.) Willd. ex Schult.	Herbs
88	105	Malvaceae	*Triumfetta rhomboidea* Jacq.	Herbs
89	106	Rosaceae	*Pyrus pashia* Buch.-Ham. ex D.Don	Trees
90	107	Cornaceae	*Alangium alpinum* (C.B. Clarke) W.W. Sm. & Cave	Trees
91	108	Asteraceae	*Cirsium phulchokiense* Kitam.	Herbs, Endemic
92	109	Balsaminaceae	*Impatiens scabrida* DC.	Herbs
93	110	Poaceae	*Echinochloa crus* galli (L.) P.Beauv.	Herbs
94	111	Poaceae	*Sporobolus fertilis* (Steud.) Clayton	Herbs
95	112	Cyperaceae	*Cyperus iria* L.	Herbs
96	113	Pteridaceae	*Adiantum philippense* L.	Herbs
97	114	Orobanchaceae	*Lindenbergia indica* Vatke	Herbs
98	115	Fabaceae	*Parochetus communis* D.Don	Herbs
99	116	Cyperaceae	*Kyllinga brevifolia* Rottb.	Herbs
100	117	Cyperaceae	*Kyllinga squamulata* Vahl	Herbs
101	118	Malvaceae	*Abelmoschus moschatus* Medik.	Subshrubs
102	119	Vitaceae	*Parthenocissus semicordata* (Wall.) Planch.	Climbers
103	120	Lamiaceae	*Isodon coesta* (Buch.-Ham. ex D.Don) Kudo	Herbs
104	121	Fabaceae	*Desmodium podocarpum* DC.	Herbs

S.N.	Collection Number	Family	Scientific name	Habit
105	122	Gesneriaceae	*Henckelia pumila* (D.Don) A.Dietr.	Herbs
106	124	Fagaceae	*Quercus lanata* Sm.	Trees
107	125	Fagaceae	*Quercus lanata* Sm.	Trees
108	127	Orchidaceae	*Malaxis abieticola* Salazar & Soto Arenas	Herbs, Terrestrial
109	128	Piperaceae	*Peperomia tetraphylla* (G.Forst.) Hook. & Arn.	Herbs
110	129	Poaceae	*Drepanostachyum falcatum* (Nees) Keng f.	Shrubs
111	130	Ericaceae	*Rhododendron arboreum* Sm. var. arboreum	Trees
112	131	Cyperaceae	*Carex filicina* Nees	Herbs
113	132	Cyperaceae	*Bulbostylis densa* (Wall.) Hand.-Mazz.	Herbs
114	134	Betulaceae	*Carpinus faginea* Lindl.	Trees
115	135	Poaceae	*Eragrostis minor* Host	Herbs
116	137	Asteraceae	*Pseudognaphalium hypoleucum* (DC.) Hill. &Burtt	Herbs
117	138	Cyperaceae	*Pycreus sanguinolentus* (Vahl) Nees	Herbs
118	140	Rubiaceae	*Leptodermis kumaonensis* R. Parker	Shrubs
119	141	Commelinaceae	*Cyanotis cristata* (L.) D. Don	Herbs
120	142	Polygonaceae	*Persicaria capitata* (Buch.-Ham. ex D.Don) H.Gross	Herbs
121	144	Poaceae	*Pseudopogonatherum contortum* (Brongn.) A. Camus	Herbs
122	146	Cyperaceae	*Fimbristylis dichotoma* (L.) Vahl	Herbs
123	148	Dryopteridaceae	*Polystichum squarrosum* (D. Don) Fée	Herbs
124	150	Sinopteridaceae	*Aleuritopteris albomarginata* (C.B. Clarke) Ching	Herbs
125	153	Rubiaceae	*Galium acutum* Edgew.	Herbs
126	154	Asteraceae	*Anaphalis busua* (Buch.-Ham.) DC.	Herbs
127	155	Lamiaceae	*Isodon scrophularioides* (Wall. ex Benth.) Murata	Herbs
128	156	Boraginaceae	*Cynoglossum wallichii* var. *glochidiatum* (Wall. ex Benth.) Kazmi	Herbs
129	157	Scrophulariaceae	*Scrophularia urticifolia* Wall. ex Benth.	Herbs
130	158	Hypoxidaceae	*Hypoxis aurea* Lour.	Herbs
131	159	Rosaceae	*Agrimonia pilosa* Ledeb.	Herbs
132	160	Hypericaceae	*Hypericum elodeoides* Choisy	Herbs
133	161	Polypodiaceae	*Lepisorus bicolor* (Takeda) Ching	Herbs
134	162	Lamiaceae	*Salvia plebeia* R.Br.	Herbs
135	163	Asteraceae	*Anaphalis adnata* DC.	Herbs
136	164	Fabaceae	*Rhynchosia falconeri* Baker	Herbs
137	165	Asteraceae	*Anaphalis chlamydophylla* Diels	Herbs
138	166	Fabaceae	*Indigofera dosua* D.Don	Shrubs
139	167	Gentianaceae	*Swertia angustifolia* Buch.-Ham. ex D. Don	Herbs
140	168	Caprifoliaceae	*Valeriana hardwickii* Wall.	Herbs
141	169	Asteraceae	*Duhaldea cappa* (Buch.-Ham.ex D.Don) Pruski &Anderb.	Herbs
142	170	Lamiaceae	*Salvia coccinea* Buc'hoz ex Etl.	Herbs
143	171	Polypodiaceae	*Drynaria propinqua* (Wall. ex Mett.) Bedd.	Herbs
144	172	Onagraceae	*Epilobium cylindricum* D.Don	Herbs
145	174	Orchidaceae	*Satyrium nepalense* D.Don	Herbs, Terrestrial
146	175	Scrophulariaceae	*Verbascum thapsus* L.	Herbs
147	177	Droseraceae	*Drosera peltata* Thunb.	Herbs, Insectivorous
148	178	Urticaceae	*Lecanthus peduncularis* (Wall. ex Royle) Wedd.	Herbs
149	180	Hypericaceae	*Hypericum japonicum* Thunb.	Herbs
150	182	Dioscoreaceae	*Dioscorea bulbifera* L.	Herbs, Climber
151	183	Fabaceae	*Smithia ciliata* Royle	Herbs
152	184	Polygalaceae	*Salomonia cantoniensis* Lour.	Herbs
153	185	Primulaceae	*Androsace sarmentosa* Wall.	Herbs
154	186	Poaceae	*Oplismenus burmanni* (Retz.) P.Beauv.	Herbs
155	189	Poaceae	*Arthraxon hispidus* (Thunb.) Makino	Herbs
156	191	Poaceae	*Chamabainia cuspidata* Wight	Herbs

S.N.	Collection Number	Family	Scientific name	Habit
157	193	Amaranthaceae	*Cyathula tomentosa* (Roth) Moq.	Shrubs
158	194	Asteraceae	*Tagetes minuta* L.	Herbs
159	196	Aceraceae	*Acer oblongum* Wall. ex DC.	Trees
160	197	Anacardiaceae	*Toxicodendron wallichii* (Hook. f.) Kuntze	Shrubs
161	198	Myricaceae	*Myrica esculenta* Buch.-Ham. ex D. Don	Trees, Edible fruits
162	199	Fabaceae	*Rhynchosia falconeri* Baker	Herbs
163	201	Rutaceae	*Zanthoxylum armatum* DC.	Shrub, Medicinal
164	202	Urticaceae	*Girardinia diversifolia* (Link) Friis	Herbs, Fiber yielding
165	204	Zingiberaceae	*Hedychium spicatum* Sm.	Herbs
166	205	Orobanchaceae	*Pedicularis bifida* (Buch.-Ham.) Pennell	Herbs
167	206	Ericaceae	*Rhododendron arboreum* Sm. var. arboreum	Trees
168	207	Amaranthaceae	*Achyranthes bidentata* Blume	Herbs
169	208	Fabaceae	*Desmodium microphyllum* (Thunb.) DC.	Herbs
170	209	Fabaceae	*Indigofera heterantha* Brandis	Shrubs
171	210	Lamiaceae	*Leucas lanata* Benth.	Herbs
172	211	Fabaceae	*Desmodium multiflorum* DC.	Shrubs
173	212	Acanthaceae	*Strobilanthes bheriensis* (Shakya) J.R.I.Wood	Herbs, Endemic
174	213	Polygalaceae	*Polygala persicariifolia* DC.	Herbs
175	214	Campanulaceae	*Campanula pallida* Wall.	Herbs
176	215	Primulaceae	*Lysimachia alternifolia* Wall.	Herbs
177	216	Acanthaceae	*Justicia japonica* Thunb.	Herbs
178	217	Caprifoliaceae	*Valeriana hardwickii* Wall.	Herbs
179	219	Convolvulaceae	*Ipomoea hederifolia* L.	Herbs
180	220	Rubiaceae	*Rubia alata* Wall.	Herbs
181	221	Dioscoreaceae	*Dioscorea belophylla* (Prain) Voigt ex Haines	Herbs, Climber
182	223	Lamiaceae	*Origanum vulgare* L.	Herbs
183	224	Fabaceae	*Desmodium elegans* DC.	Shrubs
184	225	Oleaceae	*Ligustrum compactum* (Wall. ex G.Don) Hook.f. & Thomson ex Brandis	Shrubs
185	227	Berberidaceae	*Berberis glaucocarpa* Stapf	Herbs
186	228	Fabaceae	*Albizia chinensis* (Osbeck) Merr.	Trees
187	229	Toricelliaceae	*Toricellia tiliifolia* DC.	Trees
188	230	Rutaceae	*Boenninghausenia albiflora* (Hook.) Rchb. ex Meisn.	Herbs
189	232	Rutaceae	*Zanthoxylum acanthopodium* DC.	Shrubs
190	233	Cucurbitaceae	*Solena amplexicaulis* (Lam.) Gandhi	Herbs
191	234	Caryophyllaceae	*Drymaria cordata* (L.) Willd. ex Schult.	Herbs
192	235	Lamiaceae	*Isodoncoesta* (Buch.-Ham. ex D.Don) Kudo	Herbs
193	236	Urticaceae	*Elatostema monandrum* (Buch.-Ham. ex D.Don) H.Hara	Herbs
194	237	Lamiaceae	*Isodon coetsa* (Buch.-Ham. ex D.Don) Kudô	Herbs
195	238	Urticaceae	*Chamabainia cuspidata* Wight	Herbs
196	239	Caprifoliaceae	*Viburnum mullaha* Buch.-Ham. ex D. Don	Shrubs
197	240	Asteraceae	*Conyza japonica* (Thunb.) Less. ex Less.	Herbs
198	241	Begoniaceae	*Begonia picta* Wall.	Herbs
199	242	Lamiaceae	*Origanum vulgare* L.	Herbs
200	244	Asteraceae	*Erigeron bellidioides* (Buch.-Ham. ex D.Don) Benth. ex C.B.Clarke	Herbs
201	245	Lamiaceae	*Elsholtzia blanda* (Benth.) Benth.	Herbs
202	246	Urticaceae	*Pilea scripta* (Buch.-Ham. ex D. Don) Wedd.	Herbs
203	247	Thymelaeaceae	*Daphne bholua* Buch.-Ham. ex D.Don	Shrubs
204	248	Rosaceae	*Rosa moschata* Herrm.	Shrubs
205	249	Caprifoliaceae	*Viburnum mullaha* Buch.-Ham. ex D. Don	Shrubs
206	250	Oleaceae	*Jasminum officinale* L.	Shrubs
207	251	Smilacaceae	*Smilax aspera* L.	Climbers

S.N.	Collection Number	Family	Scientific name	Habit
208	252	Rosaceae	*Prinsepia utilis* Royle	Shrubs
209	253	Cuscutaceae	*Cuscuta reflexa* Roxb.	Climbers, Parasitic
210	254	Dipsacaceae	*Dipsacus inermis* Wall.	Herbs
211	256	Asteraceae	*Senecio graciliflorus* (Wall.) DC.	Herbs
212	258	Crassulaceae	*Sedum multicaule* Wall. ex Lindl.	Herbs
213	259	Geraniaceae	*Geranium nepalense* Sweet	Herbs
214	260	Begoniaceae	*Begonia picta* Wall.	Herbs
215	261	Hypericaceae	*Hypericum hookerianum* Wight & Arn.	Shrubs
216	262	Violaceae	*Viola canescens* Wall.	Herbs
217	263	Asteraceae	*Lactuca brunoniana* (DC.) Wall. ex C.B.Clarke	Herbs
218	264	Dennstaedtiaceae	*Microlepia firma* Mett. ex Kuhn	Herbs
219	265	Piperaceae	*Peperomia heyneana* Miq.	Herbs
220	266	Lamiaceae	*Elsholtzia ciliata* (Thunb.) Hyl.	Herbs
221	268	Rubiaceae	*Galium asperifolium* Wall.	Herbs
222	270	Lamiaceae	*Leucas cephalotes* (Roth) Spreng.	Herbs
223	271	Campanulaceae	*Lobelia nicotianifolia* Roth ex Schult.	Herbs
224	272	Fabaceae	*Senna occidentalis* (L.) Link	Shrubs
225	273	Fabaceae	*Flemingia strobilifera* (L.) W.T.Aiton	Shrubs
226	274	Saxifragaceae	*Astilbe rivularis* Buch.-Ham. ex D. Don	Herbs, Medicinal
227	275	Fabaceae	*Indigofera heterantha* Brandis	Shrubs
228	276	Ranunculaceae	*Clematis gouriana* Roxb. ex DC.	Herbs
229	277	Zingiberaceae	*Hedychium spicatum* Sm.	Herbs
230	278	Ranunculaceae	*Anemone vitifolia* Buch.-Ham. ex DC.	Herbs
231	279	Gentianaceae	*Gentiana capitata* Buch.-Ham. ex D.Don	Herbs
232	280	Cyperaceae	*Cyperus squarrosus* L.	Herbs
233	281	Malvaceae	*Urena repanda* Roxb. ex Sm.	Herbs
234	282	Polygalaceae	*Polygala crotalarioides* Buch.-Ham. ex DC.	Herbs
235	283	Asteraceae	*Anaphalis triplinervis* (Sims) C.B. Clarke	Herbs
236	285	Anacardiaceae	*Brucea javanica* (L.) Merr.	Trees
237	286	Vitaceae	*Ampelocissus rugosa* (Wall.) Planch.	Climber
238	287	Euphorbiaceae	*Leptopus cordifolius* Decne.	Shrubs
239	288	Rosaceae	*Spiraea canescens* D.Don	Shrubs
240	289	Orchidaceae	*Satyrium nepalense* D.Don	Herbs, Terrestrial
241	290	Begoniaceae	*Begonia picta* Wall.	Herbs
242	291	Solanaceae	*Nicandra physalodes* (L.) Gaertn.	Herbs
243	292	Fagaceae	*Quercus lanata* Sm.	Trees
244	293	Zingiberaceae	*Cautleya spicata* (Sm.) Baker	Herbs
245	294	Menispermaceae	*Stephania glabra* (Roxb.) Miers	Herbs
246	295	Urticaceae	*Boehmeria polystachya* Wedd.	Herbs
247	296	Asteraceae	*Gynura bicolor* (Roxb. ex Willd.) DC.	Herbs
248	299	Poaceae	*Dichanthium annulatum* (Forssk.) Stapf	Herbs
249	300	Equisataceae	*Equisetum arvense* L.	Herbs
250	301	Balsaminaceae	*Impatiens edgeworthii* Hook. f.	Herbs
251	302	Lamiaceae	*Origanum vulgare* L.	Herbs
252	303	Cyperaceae	*Bulbostylis densa* (Wall.) Hand.-Mazz.	Herbs
253	305	Polygonaceae	*Aconogonum molle* (D. Don) H. Hara	Herbs
254	306	Lentibulariaceae	*Utricularia scandens* Benj.	Herbs, Insectivorous
255	307	Poaceae	*Saccharum spontaneum* L.	Herbs
256	308	Zingiberaceae	*Hedychium spicatum* Sm.	Herbs
257	309	Poaceae	*Drepanostachyum falcatum* (Nees) Keng f.	Shrubs
258	310	Polypodiaceae	*Polypodiodes lachnopus* (Wall. ex Hook.) Ching	Herbs
259	311	Poaceae	*Festuca gigantea* (L.) Vill.	Herbs
260	312	Cyperaceae	*Carex myosurus* Nees	Herbs

S.N.	Collection Number	Family	Scientific name	Habit
261	313	Eriocaulaceae	*Eriocaulon nepalense* Prescott ex Bong.	Herbs
262	314	Equisataceae	*Equisetum arvense* L.	Herbs
263	315	Asteraceae	*Sigesbeckia orientalis* L.	Herbs
264	316	Lamiaceae	*Prunella vulgaris* L.	Herbs
265	318	Ranunculaceae	*Anemone rivularis* Buch.-Ham. ex DC.	Herbs
266	319	Ranunculaceae	*Ranunculus laetus* Wall. ex Hook. f. & J.W. Thomson	Herbs
267	320	Urticaceae	*Lecanthus peduncularis* (Wall. ex Royle) Wedd.	Herbs
268	321	Saxifragaceae	*Bergenia ciliata* Sternb.	Herbs
269	322	Polygonaceae	*Persicaria lapathifolia* (L.) Delarbre	Herbs
270	323	Rosaceae	*Prinsepia utilis* Royle	Shrubs
271	326	Lamiaceae	*Phlomoides macrophylla* (Benth.) Kamelin & Makhm.	Herbs
272	327	Pteridaceae	*Notholaena himalaica* Fraser-Jenk.	Herbs
273	328	Asteraceae	*Artemisia dubia* Wall. ex Besser	Subshrubs
274	329	Rubiaceae	*Galium asperifolium* Wall.	Herbs
275	331	Asteraceae	*Bidens biternata* (Lour.) Merr. & Sherff	Herbs, Invasive
276	332	Gentianaceae	*Swertia chirayita* (Roxb.) Buch.-Ham. ex C.B.Clarke	Herbs, Medicinal
277	334	Asteraceae	*Adenostemma lavenia* (L.) Kuntze	Herbs
278	336	Polypodiaceae	*Polypodiodes lachnopus* (Wall. ex Hook.) Ching	Herbs
279	338	Urticaceae	*Elatostema monandrum* (Buch.-Ham. ex D.Don) H.Hara	Herbs
280	339	Liliaceae	*Disporum cantoniense* (Lour.) Merr.	Herbs
281	341	Symplocaceae	*Symplocos paniculata* (Thunb.) Miq.	Trees
282	342	Hydrangeaceae	*Philadelphus tomentosus* Wall. ex G. Don	Shrubs
283	343	Rhamnaceae sp.	*Rhamnus virgatus* Roxb.	Shrubs
284	346	Caryophyllaceae	*Stellaria monosperma* Buch.-Ham. ex D. Don	Herbs
285	347	Gesneriaceae	*Platystemma violoides* Wall.	Herbs
286	348	Brassicaceae	*Cardamine flexuosa* With.	Herbs
287	349	Asteraceae	*Bidens biternata* (Lour.) Merr. & Sherff	Herbs, Invasive
288	350	Polypodiaceae	*Microsorum membranaceum* (D. Don) Ching	Herbs
289	351	Apiaceae	*Chaerophyllum reflexum* Aitch.	Herbs
290	352	Cornaceae	*Cornus macrophylla* Wall.	Trees
291	353	Aquifoliaceae	*Ilex dipyrena* Wall.	Trees
292	354	Aceraceae	*Acer cappadocicum* Gled.	Trees
293	355	Gesneriaceae	*Didymocarpus albicalyx* C.B. Clarke	Herbs
294	356	Theaceae	*Eurya acuminata* DC.	Trees
295	357	Elaeagnaceae	*Elaeagnus umbellata* Thunb.	Shrubs
296	358	Fagaceae	*Quercus glauca* Thunb.	Trees
297	359	Cyperaceae	*Carex condensata* Nees	Herbs
298	360	Rosaceae	*Spiraea canescens* D.Don	Shrubs
299	361	Rosaceae	*Pyracantha crenulata* (Roxb. ex D.Don) M.Roem.	Shrubs
300	362	Polygonaceae	*Polygonum recumbens* Royle ex Bab.	Herbs
301	363	Orchidaceae	*Habenaria intermedia* D.Don	Herbs
302	365	Loranthaceae	*Scurrula parasitica* L.	Shrubs
303	366	Rosaceae	*Cotoneaster frigidus* Wall. ex Lindl.	Shrubs
304	369	Araceae	*Arisaema erubescens* (Wall.) Schott	Herbs
305	370	Poaceae	*Bromus himalaicus* Stapf	Herbs
306	373	Gentianaceae	*Swertia paniculata* Wall.	Herbs
307	374	Ranunculaceae	*Clematis connata* DC.	Herbs, Climber
308	376	Malvaceae	*Urena lobata* L.	Herbs
309	377	Cyperaceae	*Pycreus sanguinolentus* (Vahl) Nees	Herbs
310	378	Campanulaceae	*Codonopsis viridis* Wall.	Herbs
311	380	Apocynaceae	*Ceropegia longifolia* Wall.	Herbs, Climber
312	382	Balsaminaceae	*Impatiens urticifolia* Wall.	Herbs
313	383	Polypodiaceae	*Lepisorus bicolor* (Takeda) Ching	Herbs

S.N.	Collection Number	Family	Scientific name	Habit
314	384	Fabaceae	*Uraria lagopus* DC.	Herbs
315	385	Poaceae	*Heteropogon contortus* (L.) P.Beauv. ex Roem. & Schult.	Herbs
316	388	Cyperaceae	*Cyperus cyperoides* (L.) Kuntze	Herbs
317	389	Cyperaceae	*Fimbristylis dichotoma* (L.) Vahl	Herbs
318	390	Rosaceae	*Cotoneaster microphyllus* Wall. ex Lindl.	Shrubs
319	391	Moraceae	*Ficus sarmentosa* Buch.-Ham. ex Sm.	Shrubs
320	392	Pinaceae	*Tsuga dumosa* (D.Don) Eichler	Trees
321	393	Rosaceae	*Cotoneaster bacillaris* Wall. ex Lindl.	Shrubs
322	394	Asteraceae	*Synotis wallichii* (DC.) C.Jeffrey & Y.L.Chen	Herbs
323	395	Asteraceae	*Carpesium abrotanoides* L.	Herbs
324	396	Plantaginaceae	*Wulfeniopsis amherstiana* (Benth.) D.Y. Hong	Herbs
325	397	Ericaceae	*Gaultheria nummularioides* D.Don	Herbs
326	398	Onagraceae	*Circaea repens* Wall. ex Asch. & Magnus	Herbs
327	399	Urticaceae	*Elatostema pusillum* C.B. Clarke ex Hook. f.	Herbs
328	402	Asteraceae	*Anaphalis triplinervis* (Sims) C.B. Clarke	Herbs
329	403	Athyriaceae	*Athyrium pectinatum* (Wall. ex Mett.) T. Moore	Herbs
330	404	Polypodiaceae	*Drynaria mollis* Bedd.	Herbs
331	405	Rosaceae	*Potentilla lineata* Trevir.	Herbs
332	406	Cannabaceae	*Cannabis sativa* L.	Herbs
333	407	Gentianaceae	*Swertia nervosa* (Wall. ex G. Don) C.B. Clarke	Herbs
334	408	Gentianaceae	*Halenia elliptica* D.Don	Herbs
335	409	Rosaceae	*Rubus nepalensis* (Hook. f.) Kuntze	Herbs
336	410	Lamiaceae	*Elsholtzia fruticosa* (D.Don) Rehder	Herbs
337	411	Plantaginaceae	*Plantago asiatica* subsp. erosa (Wall.) Z.Yu Li	Herbs
338	412	Polygonaceae	*Rumex nepalensis* Spreng.	Herbs
339	414	Asteraceae	*Taraxacum mitalii* Soest	Herbs
340	415	Poaceae	*Capillipedium parviflorum* (R.Br.) Stapf	Herbs
341	416	Plantaginaceae	*Hemiphragma heterophyllum* Wall.	Herbs
342	417	Polygonaceae	*Bistorta amplexicaulis* (D. Don) Greene	Herbs
343	418	Asteraceae	*Senecio cappa* Buch.-Ham. ex D.Don	Herbs
344	419	Asteraceae	*Lactuca violifolia* (Decne.) C.B.Clarke	Herbs
345	420	Poaceae	*Poa annua* L.	Herbs
346	423	Cyperaceae	*Isolepis setacea* (L.) R.Br.	Herbs
347	424	Papaveraceae	*Corydalis stipulata* Lidén	Herbs
348	425	Plantaginaceae	*Veronica cana* Wall. ex Benth.	Herbs
349	427	Cyperaceae	*Carex filicina* Nees	Herbs
350	428	Gentianaceae	*Swertia nervosa* (Wall. ex G. Don) C.B. Clarke	Herbs
351	429	Caryophyllaceae	*Silene kumaonensis* F.N.Williams	Herbs
352	431	Poaceae	*Themeda triandra* Forssk.	Herbs
353	432	Saxifragaceae	*Saxifraga parnassifolia* D. Don	Herbs
354	433	Fabaceae	*Lespedeza gerardiana* Maxim.	Herbs
355	436	Rubiaceae	*Galium acutum* Edgew.	Herbs
356	438	Urticaceae	*Pilea umbrosa* Blume	Herbs
357	439	Apiaceae	*Sanicula elata* Buch.-Ham. ex D.Don	Herbs
358	441	Crassulaceae	*Rhodiola chrysanthemifolia* (H. Lév.) S.H. Fu	Herbs
359	442	Apocynaceae	*Vincetoxicum hirundinaria* Medik.	Herbs
360	443	Fabaceae	*Vicia bakeri* Ali	Herbs
361	445	Poaceae	*Stipa roylei* (Nees) Duthie	Herbs
362	446	Cyperaceae	*Carex vesiculosa* Boott	Herbs
363	447	Rosaceae	*Cotoneaster bacillaris* Wall. ex Lindl.	Shrubs
364	450	Crassulaceae	*Rhodiola chrysanthemifolia* (H. Lév.) S.H. Fu	Herbs
365	451	Orobanchaceae	*Pedicularis scullyana* Prain ex Maxim.	Herbs
366	452	Asteraceae	*Senecio raphanifolius* Wall. ex DC.	Herbs

S.N.	Collection Number	Family	Scientific name	Habit
367	453	Campanulaceae	*Campanula pallida* Wall.	Herbs
368	455	Polypodiaceae	*Drynaria propinqua* (Wall. ex Mett.) Bedd.	Herbs
369	458	Rosaceae	*Dasiphora fruticosa* (L.) Rydb.	Herbs
370	459	Ericaceae	*Rhododendron lepidotum* Wall. ex G. Don	Shrubs
371	461	Orchidaceae	*Satyrium nepalense* D.Don	Herbs, Terrestrial
372	462	Euphorbiaceae	*Euphorbia sikkimensis* Boiss.	Shrubs
373	465	Asteraceae	*Senecio raphanifolius* Wall. ex DC.	Herbs
374	467	Campanulaceae	*Cyananthus microphyllus* Edgew.	Herbs
375	468	Ericaceae	*Rhododendron arboreum* Sm. var. arboreum	Trees
376	469	Rosaceae	*Rosa webbiana* Wall. ex Royle	Shrubs
377	470	Rosaceae	*Potentilla griffithii* Hook.f.	Herbs
378	472	Balsaminaceae	*Impatiens puberula* DC.	Herbs
379	473	Pinaceae	*Pinus wallichiana* A.B.Jacks.	Trees
380	474	Ericaceae	*Rhododendron barbatum* Wall. ex G. Don	Trees
381	475	Fagaceae	*Quercus semecarpifolia* Sm.	Trees
382	476	Asteraceae	*Lactuca violifolia* (Decne.) C.B.Clarke	Herbs
383	477	Caryophyllaceae	*Silene kumaonensis* F.N.Williams	Herbs
384	478	Rosaceae	*Sorbus lanata* (D.Don) S.Schauer	Trees
385	479	Aceraceae	*Acer acuminatum* Wall. ex D. Don	Trees
386	480	Taxaceae	*Taxus contorta* Griff.	Trees, Medicinal
387	481	Caprifoliaceae	*Viburnum cotinifolium* D. Don	Shrubs
388	482	Pinaceae	*Abies spectabilis* (D. Don) Spach	Trees
389	483	Hypericaceae	*Hypericum choisianum* Wall. ex N.Robson	Shrubs
390	484	Caprifoliaceae	*Leycesteria formosa* Wall.	Shrubs
391	487	Acanthaceae	*Strobilanthes urticifolia* Wall. ex Kuntze	Herbs
392	488	Polypodiaceae	*Drynaria propinqua* (Wall. ex Mett.) Bedd.	Herbs
393	489	Athyriaceae	*Athyrium pectinatum* (Wall. ex Mett.) T. Moore	Herbs
394	491	Polygonaceae	*Salomonia cantoniensis* Lour.	Herbs
395	492	Liliaceae	*Polygonatum verticillatum* (L.) All.	Herbs
396	494	Hydrangeaceae	*Hydrangea robusta* Hook. f. & Thomson	Shrubs
397	495	Caryophyllaceae	*Arenaria mukerjeeana* H. Hara	Herbs, Endemic
398	496	Cyperaceae	*Bulbostylis densa* (Wall.) Hand.-Mazz.	Herbs
399	498	Smilacaceae	*Smilax menispermoidea* A.DC.	Herbs
400	500	Salicaceae	*Salix denticulata* Andersson	Shrubs
401	501	Fagaceae	*Quercus semecarpifolia* Sm.	Trees
402	502	Schisandraceae	*Schisandra grandiflora* (Wall.) Hook.f. & Thomson	Shrubs
403	503	Balsaminaceae	*Impatiens sulcata* Wall.	Herbs
404	504	Poaceae	*Bromus himalaicus* Stapf	Herbs
405	505	Hypericaceae	*Hypericum choisianum* Wall. ex N.Robson	Shrubs
406	507	Liliaceae	*Lilium nepalense* D.Don	Herbs
407	509	Asparagaceae	*Maianthemum fuscum* (Wall.) LaFrankie	Herbs
408	510	Lamiaceae	*Ajuga macrosperma* Wall. ex Benth.	Herbs
409	511	Lamiaceae	*Prunella vulgaris* L.	Herbs
410	512	Papaveraceae	*Corydalis stipulata* Lidén	Herbs
411	513	Araliaceae	*Panax pseudoginseng* Wall.	Herbs, Medicinal
412	515	Aceraceae	*Acer caesium* Wall. ex Brandis	Trees
413	516	Asparagaceae	*Asparagus filicinus* Buch.-Ham. ex D. Don	Herbs
414	517	Lamiaceae	*Orthosiphon incurvus* Benth.	Herbs
415	519	Cyperaceae	*Cyperus squarrosus* L.	Herbs
416	520	Cyperaceae	*Kyllinga squamulata* Vahl	Herbs
417	521	Urticaceae	*Laportea bulbifera* (Siebold & Zucc.) Wedd.	Herbs
418	522	Apiaceae	*Pimpinella diversifolia* DC.	Herbs
419	523	Asteraceae	*Taraxacum parvulum* DC.	Herbs

S.N.	Collection Number	Family	Scientific name	Habit
420	525	Primulaceae	*Androsace geraniifolia* Watt	Herbs
421	527	Pteridaceae	*Aleuritopteris bicolor* (Roxb.) Fraser-Jenk.	Herbs
422	529	Loranthaceae	*Scurrula elata* (Edgew.) Danser	Shrubs
423	530	Lamiaceae	*Phlomoides spectabilis* (Falc. ex Benth.) Kamelin & Makhm.	Herbs
424	531	Oleaceae	*Jasminum polyanthum* Franch.	Shrubs
425	532	Betulaceae	*Betula alnoides* Buch.-Ham. ex D. Don	Trees
426	533	Amaranthaceae	*Celosia argentea* L.	Herbs
427	535	Elaeagnaceae	*Elaeagnus umbellata* Thunb.	Shrubs
428	536	Solanaceae	*Solanum americanum* Mill.	Herbs
429	537	Cuscutaceae	*Cuscuta reflexa* Roxb.	Climbers, Parasitic
430	538	Larzidabalaceae	*Holboellia latifolia* Wall.	Climbers
431	539	Caprifoliaceae	*Lonicera lanceolata* Wall.	Shrubs
432	540	Rosaceae	*Malus baccata* (L.) Borkh.	Trees
433	541	Rosaceae	*Cotoneaster adpressus* Bois	Shrubs
434	543	Cyperaceae	*Carex nubigena* D.Don ex Tilloch & Taylor	Herbs
435	545	Ranunculaceae	*Thalictrum alpinum* L.	Herbs
436	546	Cyperaceae	*Kyllinga brevifolia* Rottb.	Herbs
437	547	Ranunculaceae	*Anemone obtusiloba* D. Don	Herbs
438	548	Amaranthaceae	*Cyathula capitata* Moq.	Herbs
439	549	Ranunculaceae	*Thalictrum chelidonii* DC.	Herbs
440	550	Ranunculaceae	*Clematis grata* Wall.	Herbs, Climber
441	551	Rosaceae	*Prunus venosa* Koehne	Trees
442	552	Lamiaceae	*Orthosiphon incurvus* Benth.	Herbs
443	553	Asteraceae	*Lactuca brunoniana* (DC.) Wall. ex C.B.Clarke	Herbs
444	554	Poaceae	*Digitaria ciliata* Lag.	Herbs
445	555	Asteraceae	*Tricholepis furcata* DC.	Herbs
446	558	Onagraceae	*Epilobium wallichianum* Hausskn.	Herbs
447	559	Poaceae	*Agrostis micrantha* Steud.	Herbs
448	560	Liliaceae	*Cardiocrinum giganteum* (Wall.) Makino	Herbs
449	562	Hydrangeaceae	*Hydrangea macrophylla* (Thunb.) Ser.	Shrubs
450	563	Sabiaceae	*Meliosma dilleniifolia* (Wall. ex Wight & Arn.) Walp.	Trees
451	564	Betulaceae	*Carpinus viminea* Wall. ex Lindl.	Trees
452	565	Fabaceae	*Desmodium elegans* DC.	Shrubs
453	566	Phytolaccaceae	*Phytolacca acinosa* Roxb.	Herbs, Vegetable
454	569	Caryophyllaceae	*Stellaria himalayensis* Majumdar	Herbs
455	570	Poaceae	*Drepanostachyum intermedium* (Munro) Keng f.	Shrubs
456	571	Lauraceae	*Lindera pulcherrima* (Nees) Hook. f.	Trees
457	572	Fagaceae	*Quercus semecarpifolia* Sm.	Trees
458	573	Urticaceae	*Lecanthus peduncularis* (Wall. ex Royle) Wedd.	Herbs
459	574	Lamiaceae	*Isodon scrophularioides* (Wall. ex Benth.) Murata	Herbs
460	575	Lamiaceae	*Elsholtzia ciliata* (Thunb.) Hyl.	Herbs
461	576	Gesneriaceae	*Platystemma violoides* Wall.	Herbs
462	577	Sapindaceae	*Aesculus indica* (Wall. ex Cambess.) Hook.	Trees
463	578	Pinaceae	*Abies pindrow* (Royle ex D. Don) Royle	Trees
464	580	Asteraceae	*Carpesium scapiforme* F.H.Chen & C.M.Hu	Herbs
465	581	Urticaceae	*Urtica ardens* Link	Herbs
466	582	Lamiaceae	*Scutellaria scandens* D.Don	Herbs
467	585	Zingiberaceae	*Roscoea purpurea* Sm.	Herbs
468	586	Oleaceae	*Jasminum dispermum* Wall.	Shrubs
469	587	Solanaceae	*Solanum viarum* Dunal	Herbs
470	588	Geraniaceae	*Geranium nepalense* Sweet	Herbs
471	589	Phrymaceae	*Phryma leptostachya* L.	Herbs
472	590	Urticaceae	*Pouzolzia sanguinea* (Blume) Merr.	Herbs

S.N.	Collection Number	Family	Scientific name	Habit
473	591	Apocynaceae	*Cynanchum auriculatum* Royle ex Wight	Herbs
474	592	Apocynaceae	*Cynanchum dalhousiae* Wight	Herbs
475	593	Rubiaceae	*Argostemma verticillatum* Wall.	Herbs
476	594	Fabaceae	*Desmodium multiflorum* DC.	Shrubs
477	595	Amaranthaceae	*Achyranthes bidentata* Blume	Herbs
478	596	Ranunculaceae	*Clematis montana* Buch.-Ham. ex DC.	Herbs, Climber
479	597	Cyperaceae	*Kyllinga brevifolia* Rottb.	Herbs
480	598	Cyperaceae	*Kyllinga brevifolia* Rottb.	Herbs
481	599	Araliaceae	*Hedera nepalensis* K.Koch	Climbers
482	600	Gesneriaceae	*Aeschynanthus parviflorus* (D. Don) Spreng.	Herbs
483	601	Fagaceae	*Quercus glauca* Thunb.	Trees
484	605	Commelinaceae	*Commelina maculata* Edgew.	Herbs
485	606	Gesneriaceae	*Corallodiscus lanuginosus* (Wall. ex DC.) B.L.Burtt	Herbs
486	607	Tiliaceae	*Grewia optiva* J.R.Drumm. ex Burret	Trees
487	608	Orchidaceae	*Vanda cristata* Wall. ex Lindl.	Herbs, Epiphytic
488	609	Fabaceae	*Erythrina stricta* Roxb.	Trees
489	611	Euphorbiaceae	*Excoecaria acerifolia* Didr.	Shrubs
490	612	Gentianaceae	*Tripterospermum volubile* (D. Don) H. Hara	Herbs
491	613	Asteraceae	*Ligularia fischeri* (Ledeb.) Turcz.	Herbs
492	614	Phyllanthaceae	*Phyllanthus emblica* L.	Trees, Medicinal
493	615	Lythraceae	*Punica granatum* L.	Trees, Cultivated
494	616	Myrtaceae	*Psidium guajava* L.	Trees, Cultivated
495	617	Anacardiaceae	*Rhus parviflora* Roxb.	Shrubs
496	618	Apocynaceae	*Calotropis gigantea* (L.) Dryand.	Shrubs, Medicinal
497	619	Verbenaceae	*Lantana camara* L.	Shrubs, Invasive
498	620	Iteaceae	*Itea nutans* Royle	Shrubs
499	621	Sapindaceae	*Sapindus mukorossi* Gaertn.	Trees
500	622	Caprifoliaceae	*Cornus oblonga* Wall.	Shrubs
501	623	Balsaminaceae	*Impatiens scabrida* DC.	Herbs
502	624	Fabaceae	*Mimosa rubicaulis* Lam.	Shrubs
503	625	Fabaceae	*Indigofera atropurpurea* Hornem.	Shrubs

Table 2: Details of the research team and their responsibilities

S.N.	Name	Designation	Institution	Remarks
1	Hai-Nin Qin	Professor	Institute of Botany, Chinese Academy of Sciences, Beijing, China	Team leader
2	Shu-Ren Zhang	Associate Professor	Institute of Botany, Chinese Academy of Sciences, Beijing, China	Member
3	Yu-Chang Yang	Graduate Student	Institute of Botany, Chinese Academy of Sciences, Beijing, China	Member
4	Prabin Bhandari	Researcher	RECAST, Tribhuvan University, Kirtipur, Kathmandu, Nepal	Member
5	Bijay Raj Subedee	Lecturer	RECAST, Tribhuvan University, Kirtipur, Kathmandu, Nepal	Member
6	Tirtha Raj Pandey	Research Officer	National Herbarium and Plant Laboratories, Godawari, Lalitpur, Nepal	Member & liaison officer