

VEGETATION SURVEY OF CENTRAL NEPAL

by

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In 1970, we performed a series of vegetation survey on various types of forests in various places of central Nepal. Our purpose was to make clear quantitatively the change of vegetational compositions in central Nepal from south to north. Such a survey has not hitherto been done in Nepal, though many observations on vegetation have been reported. This paper deals with a part of the results of our survey.

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Method of Survey

The places we surveyed were selected in the belt crossing central Nepal south to north through Kathmandu in order to study the climatic correlation of vegetation in central Nepal (Fig. 79 and Table 1). The sample plots were carefully selected to represent the typical natural forest. The size of quadrat was usually 10 m × 10 m for tree layers, and at most 6 quadrats were laid side by side if the

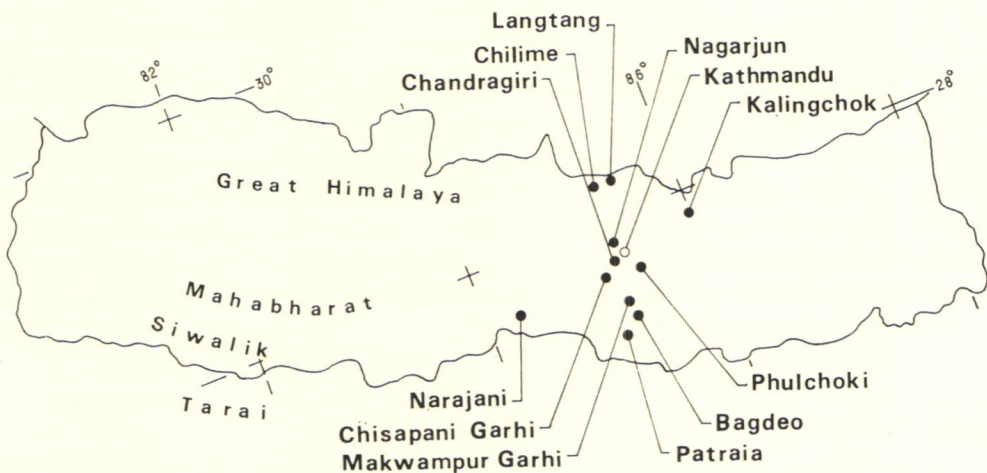


Fig. 79. Surveyed Plots.

circumstances allowed. Sometimes, a 20 m × 20 m quadrat was used when the 1st layer was very high and the place was horizontal. Three 1 m × 1 m quadrats were laid in each larger quadrat to survey the herb layer. The composing species in each quadrat were identified at the place as far as possible. Otherwise, the sample was numbered and taken to our laboratory for identification. We tried to collect good specimens of plants in the quadrat for future proof, but sometimes failed to get them because the height of the tree was too great or flower or fruit was out of season. Coverage of each species in each layer was recorded with ten-graded number corresponding to each ten percent. Altitude of the plot was measured with a Thomen Altitude Meter. Exposure and gradient of the plot were measured with a clinometer. Height of tree layers was measured with a Topcon Hypsometer K-type. Light intensity was measured with a Seconic Auto-leader III and was recorded in light value at ASA 100 as we did not have a meter with lux scale. Relative light intensity was calculated by the following formulae:

$$\log R = 2 - 0.301d$$

$$d = b - c$$

R . . . Relative light intensity (%)
 b . . . Light value outside the forest
 c . . . Light value inside the forest

Measurement of light intensity was sometimes impossible because of bad or changeable weather or because we could not find an open place outside the forest nearby. Girth of tree trunks at breast height was measured with a measuring tape. Basal Area (BA) and its percentage of land area (BAR) were calculated by the following formulae:

$$BA = \frac{1}{4\pi} \times (\sum_{n=1}^p G_{an}^2 + \sum_{n=1}^q G_{bn}^2 + \sum_{n=1}^r G_{cn}^2 + \dots)$$

G Girth at breast height in cm
 a, b, c . . . Species
 n Individual number of each species

$$BAR = \frac{BA}{\text{Size of surveyed area in cm}^2} \times 100$$

Our difficulty was in finding good natural forests. In most cases, the forest floor was quite disturbed by grazing or clearing of litter by villagers. In other cases, there was no place without a single stump and sometimes the forest floor had evidence of a past fire. In the middle altitudes, we could not find even a single patch of forest because of extensive cultivation. In the alpine zone, summer grazing strongly affected the vegetation. Actually, it was impossible to find a sample plot with natural conditions, and consequently, we had to survey the plots that we believed to be least affected.

Forest Types

i) *Shorea robusta* forest

Forest of *Shorea robusta* covered the lower elevation of the Himalayan foothill and the Gangetic Plain. *Shorea robusta* was overwhelming everywhere. The 2nd

layer of the forest was not developed. Two types of *Shorea* forest, montane and plain, could be distinguished:

1) Plain *Shorea robusta* forest

This forest was observed widely in the Terai area and at the foot of Siwalik hills up to 300 m in altitude. Coverage of the 1st layer was quite dense. *Bauhinia Vahlii* and *Combretum decandrum* were common climbers.

The undergrowth consisted of many species. Among them, the prominent species were *Sterculia villosa* and *Imperata cylindrica* in Patraia and *Clerodendrum infortunatum* in Narajani. *Sterculia* was likely to appear in damper places than *Clerodendrum*. Seedlings of *Shorea robusta* were common though the coverage was scarce.

2) Montane *Shorea robusta* forest

This forest covered the hilly areas of Siwalik hills from 200 m to 1000 m in altitude. Composition of the 1st layer was similar to that of the plain *Shorea* forest but the proportion of *Shorea* was much greater at higher elevations especially on the south-facing slopes. The shrub layer was dominated by *Phoenix humile* and the herb layer by *Carex cruciata*. Seedlings of *Dendrocalamus* sp. dominated on north-facing slopes in place of *Carex cruciata*.

ii) Other Forest Types in Plain Region

1) *Terminalia tomentosa* forest

In depressed places that are marshy in the rainy season, *Shorea robusta* was reduced its number and *Terminalia tomentosa* and *Carreya arborea* increased. As undergrowth, neither shrub nor herb layers was developed well.

2) *Acacia eburnea* forest

Successional process from the diluvial plain to *Shorea* forest was of much interest. In some places, *Acacia eburnea* was the first settler. Undergrowths were weedy; *Elsholzia* sp. occupied most part of the shrub layer, and *Ageratum conizoides* dominated in the herb layer. *Dalbergia* sp. was the first settler in other place. There were several intermediate types between *Acacia* or *Dalbergia* forests and *Shorea* forests, though they were not surveyed at this time.

iii) *Schima wallichii* forest

Schima wallichii forests are located above the montane *Shorea* forest. Around Makwanpur Garhi, at 800–900 m altitude, *Shorea* forests were observed on south- and east-facing slopes and *Schima* forests on north- and west-facing slopes. Coverage of the 1st layer was 60–80%. *Castanopsis tribuloides*, *Machilus duthiei*, *Juglans regia*, *Quercus spicata*, etc., had larger proportions in some quadrats, though they were not common. The second layer was negligible. The shrub layer was not developed well, though it consisted of a fairly large number of species. The herb layer was developed in Makwanpur Garhi (Plot No. 77) and Nagarjun lower plots (Plot Nos. 1–3). *Carex* sp. and mosses were dominant in the former plot but there was no commendable dominant species in the latter. The difference may be partly due to the difference of the time of survey. On the other hand, the herb layer was not developed well in the Nagarjun higher plot (Plot No. 4). The upper limit of the *Schima* forests was 1800–1900 m in altitude.

A forest of *Juglans regia* was developed on the north-facing concave slope (Plot

No. 2). It was considered as a local modification of the *Schima* forest affected by topography.

iv) *Pinus* forest

This is a localized forest on south-facing slopes in lower to middle altitudes up to 2000 m. *Pinus roxburghii* and *P. griffithii* were the dominant species. The former appeared at lower elevations than the latter. Subsidiary components were usually negligible. But in Nagarjun (Plot No. 9), there was a second layer consisting purely of *Schima wallichii*, suggesting the succession to *Schima* forest from *Pinus*. The forest floor was covered with litter and well grazed. The shrub layer was not well developed. In the herb layer, the dominant species was *Pogonatherum paniceum* in *Pinus roxburghii* forests and *Selaginella involvens* in *P. griffithii* forests.

v) Evergreen Oak forest

Generally, this type of forests developed on the north- or west-facing slopes. The south-facing slope was usually occupied by *Quercus semecarpifolia*, *Rhododendron arboreum* or *Quercus lanuginosa* forests. The lower limit of this forest was probably 1700 m in altitude. *Q. lineata* was common in most of the forests; *Q. glauca* was subsidiary, and *Q. lamellosa* was dominant at a certain place. The second layer had considerable coverage but the composing species were different from place to place. The shrub layer was fairly dense, *Listea pulcherrima* and *Machilus* sp. being most common. Usually they were the sprouts from cut stumps suggesting human disturbance. Another fairly common species was *Arundinaria maling*, though its coverage was quite scarce. The herb layer was dense. *Oplismenus compositus* was dominant in Chisapani Garhi, *Strobilanthes atropurpureus* and *Carex cruciata* in Phulchoki and *Ainsliaea pteropoda* in Chandragiri.

vi) Various types of broad-leaved forests

Local substitutions for evergreen oak forests consisting of broad-leaved species were observed in several places. The dominant species was different from place to place. *Machilus duthiei* was dominant in Plots No. 8 and 49, *Lindera bifaria* in Plot No. 34, and *Symplocos pyrifolia* in Plots No. 103–105. *Carpinus viminea* was dominant in the secondary forest developed after disturbance (Plot No. 67). *Sarcococca hookeriana* was dense in several plots as a shrub component. The herb layer was usually well developed and *Carex* spp. were dominant in most places.

vii) *Quercus semecarpifolia* forest

This forest was widely observed from 2000 to 3000 m in altitude. The 1st layer was dense and consisted exclusively of *Q. semecarpifolia*. The 2nd layer was not developed well, but it was denser in the lower than in the higher altitude. The shrub layer showed similar features and tendencies in different plots, though it did not have apparent dominant species, but *Arundinaria* increased at lower altitudes. The herb layer consisted of an average of 10 species and was dense. The dominant species were different in different plots. They were *Athyrium* sp. and *Ainsliaea pteropoda* in Chilime, *Bistorta amplexicaulis* and *Strobilanthes nutans* in Langtang, *Strobilanthes atropurpureus* in Phulchoki and *Hedychium ellipticum* in Chandragiri. This forest mixed with evergreen oak forests at lower altitudes and with *Tsuga*

dumosa forests at higher altitudes.

viii) Dry Forest

There were two types of dry forest on the south- or west-facing slopes, in which *Rhododendron arboreum* forests were rather widespread, and *Quercus lanuginosa* forests were quite localized. A forest dominated by *Lyonia ovalifolia* was observed in Plot No. 98. It was considered as a variety of *Rhododendron arboreum* var. *campbelliae* forest.

1) *Rhododendron arboreum* forest

The altitude of this forest was the same as that of evergreen oak forest but this developed usually on south- or west-facing slopes. The forests were disturbed very much by human activity. *R. arboreum* formed the dense 1st layer, *Lyonia ovalifolia* was observed very sparsely in the forests. The average height of the 1st layer was 8–9 m and there was no 2nd layer. The shrub layer consisted of many species in which *Myrsine semiserrata*, *Daphne bholua*, *Eurya acuminata*, or *Arundinaria maling* was dominant from place to place. The herb layer was fairly well developed.

2) *Quercus lanuginosa* forest

This forest was localized on south- or west-facing steep slopes in the *Schima* and evergreen oak forest zones. The 1st layer consisted exclusively of *Quercus lanuginosa*. The 2nd layer was negligible in Nagarjun, but it was fairly developed in Phulchoki, consisting of *Lyonia ovalifolia*, *Quercus glauca* and *Rhododendron arboreum*. The shrub layer was scattered and did not have any dominant species. The herb layers were 30–50% in coverage. In Nagarjun, there was no dominant species, though there was an average of 11 species. On the other hand, in Phulchoki, the herb layer consisted of 6 species in average and *Ainsliaea pteropoda* dominated.

ix) *Abies spectabilis* forest

Abies forests were abundant from 3000 m to 3300 m. They were considerably disturbed especially near villages or kharkas as the timbers were used for house building. The 1st layer consisted solely of *Abies spectabilis*. *Rhododendron arboreum* var. *campbelliae* was common as the 2nd layer, but *R. barbatum* was much more abundant and denser in Plot No. 54. *Daphne bholua* was common as shrubs in most of these forests. In the herb layer, *Elatostema obtusa*, *Carex* spp. and mosses were common and abundant.

x) *Tsuga dumosa* forest

Tsuga forests appeared near the lower limit of *Abies* forests in some places from 2700 m to 3000 m in altitude. In Plot No. 32, which was the only *Tsuga* forest surveyed in this report, the 2nd layer consisted of *Ilex diphyrena*. The shrub layer was scanty, but *Pieris formosa* was frequent. The herb layer was quite dense. *Strobilanthes* sp. was abundant with 30% coverage, and *Carex* sp. and mosses were subsidiary.

xi) *Juniperus* forest

Juniperus recurva was sometimes mixed in *Abies spectabilis* forests. In Gosainkund region, it formed a pure forest with a 30 m high crown with *Rhododendron* spp. in the 2nd layer. Plot No. 55 was located at the foot of a hill covered with an *Abies*

forest. The second and shrub layers were lacking but the herb layer was dense. Mosses were dominant, and *Strobilanthes atropurpureus* was subsidiary. *Elatostema obtusa* showed considerable coverage.

xii) *Rhododendron arboreum* var. *campbelliae* forest

This forest developed from 2900 m to 3300 m in altitude. The crown was dense and *Rhododendron arboreum* var. *campbelliae* was the only dominant species. It also formed the 2nd layer in *Abies spectabilis* forests. Where places were once fired, such as Plot No. 112, *Rhododendron arboreum* var. *campbelliae* formed a dense 'crown' and *Abies* formed a very scattered 1st layer above it. In Chilime, *Arundinaria* sp. was observed as the shrub layer, and the herb layer was hardly developed. In Kalingchok, on the other hand, the shrub layer was hardly developed, and the herb layer was quite dense dominated by *Elatostema obtusa* with subsidiary mosses and *Carex*.

xiii) *Rhododendron campanulatum* forest

This forest was frequently found as the 2nd layer of *Abies spectabilis* forests near its upper limit, but generally it formed a dense thicket on the timber line. The forest did not have the 2nd and shrub layers. In the herb layer, mosses dominated

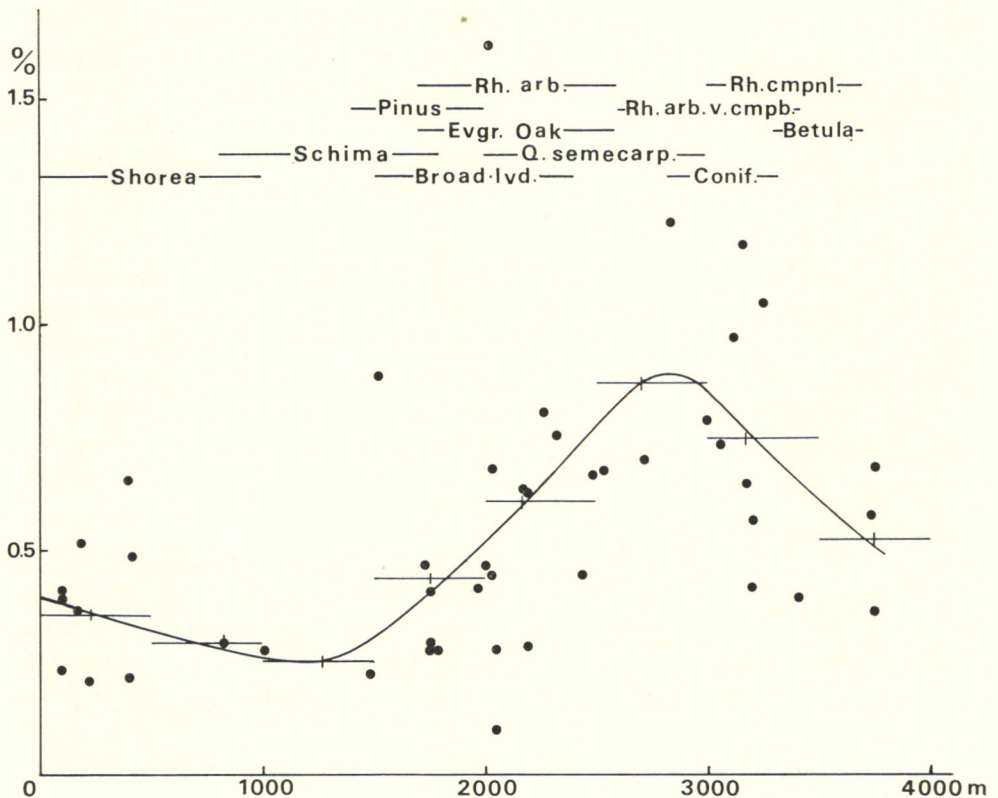


Fig. 80. Altitudinal distribution of the percentage of basal areas (BAR) and principal forest types. The horizontal bars crossed by a short line indicate the average basal area and the average altitude of plots for every 500 m.



Fig. 81. a. Plain *Shorea robusta* forest. Narajani Ghat, 200 m. b. *Quercus semecarpifolia* forest. Yatumbal, 2700 m. c. Mixed forest of *Rhododendron arboreum* and *Quercus lanuginosa*. Bumro, 1900 m. d. Forest of *Pinus roxburghii* with *Schima wallichii* as the second layer. Nagarjun, 1500 m.

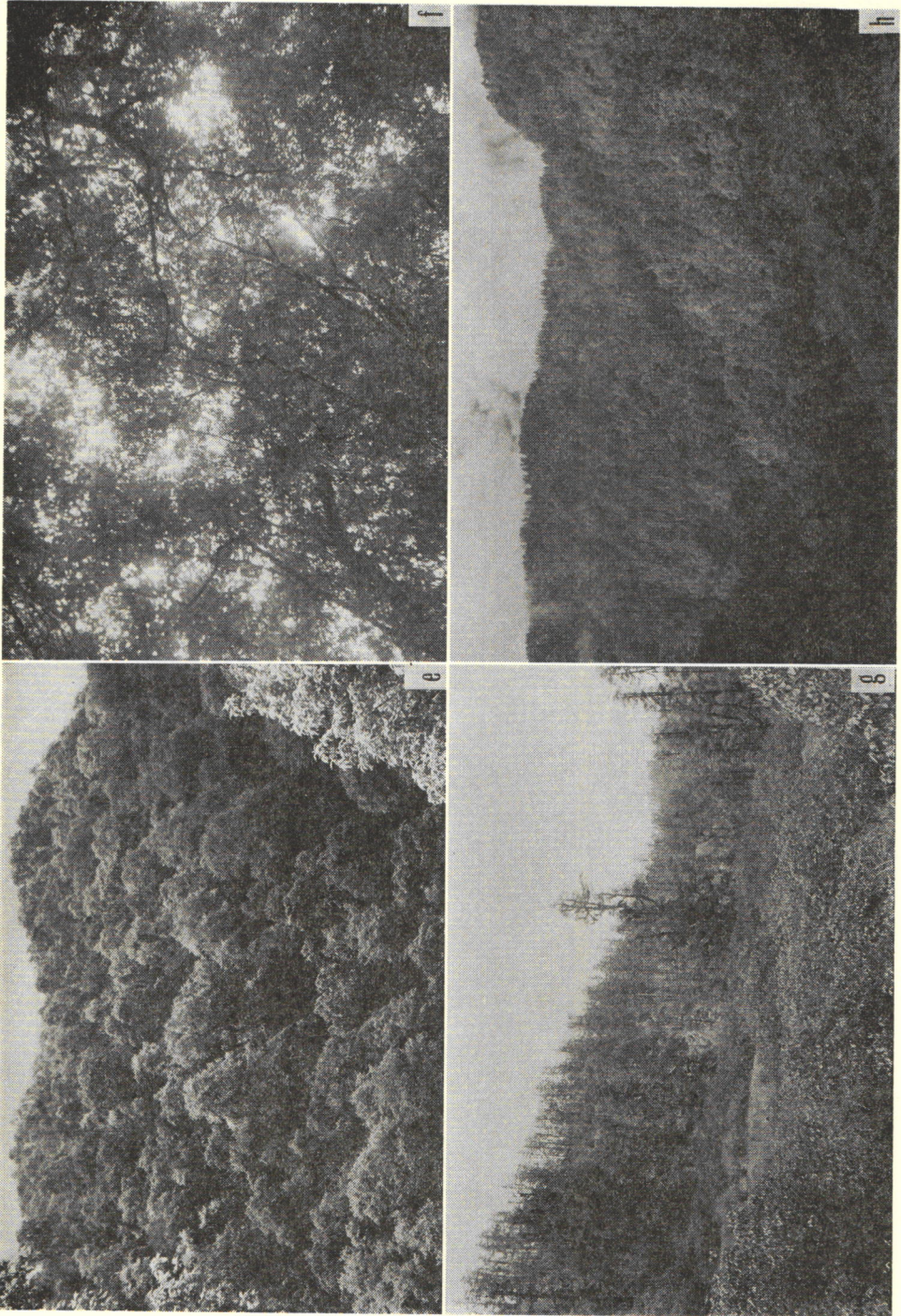


Fig. 82. e. Mixed broad-leaved forest. Nagarjun, 2000 m. f. Mixed broad-leaved forest. Para Gaon, 2400 m. g. Forest of *Abies spectabilis* and scrub of *Rhododendron campanulatum*. Tingoang, 3200 m. h. *Abies spectabilis* forest. Kalingchok, 3600 m.

in most places, but *Carex cruciata* dominated at lower altitudes. This type of forest was observed from 3000 m to 3700 m in altitude.

xiv) *Betula utilis* forest

This forest was observed in the zones of *Rhododendron arboreum* var. *campbelliae* forest and *Abies spectabilis* forest and was localized on north-facing slopes where the ground was filled with huge rocks. Coverage of the 1st layer was 80% in average consisting exclusively of *Betula utilis*. The second layer was lacking. The shrub layer mainly consisted of *Sorbus foliolosa*, *Lonicera* sp. and *Rhododendron campanulatum* in Langtang and of *Arundinaria* sp. in Kalingchok. Mosses dominated as ground cover everywhere; *Cacalia quinqueloba* was prominent in Langtang, and *Bistorta affinis* and *Senecio pteropodus* in Kalingchok.

Basal Area

The basal areas of various forest types from the subtropical to subalpine were surveyed for the first time in Nepal. They are shown in Table 57 and Fig. 80. The basal areas for every 500 m elevation are shown in Table 58. As it is clear in Fig. 80, the BAR has its maximum at ca. 3000 m alt. with a value of about 0.9%. The minimum of BAR is observed at ca. 1200 m with a value of about 0.25%. After this minimum, BAR shows a gradual increase toward lower altitudes. This phenomenon was first observed by our survey, though it is not certain whether this minimum is the result of human activity or natural tendencies because the number of plots surveyed was insufficient.

Table 1. List of surveyed plots and their environmental conditions arranged by numerical order of plot number.
(Size of quadrat 10m x 10m. 20m x 20m for the plots with double asterisk (**))

Plot No.	Quadrat No.	Date/ Month in 1970	Altitude m	Exposure	Gradient	Relative Light Intensity %	Place Name	Forest Type	Remarks
1	7	24/4	1530	S75E	40	57	Nagarjun	<i>Schima</i>	Soil dried, hard, light brown with less humus.
	8	"	1540	S70E	45	29	"	"	
2	9	"	1520	N30E	40	54	"	"	Concave slope. Stream appears in rain season. Litter cleared by villagers. Soil blackish brown, dried, soft with less humus.
3	10	"	1600	S85E	45	15	"	"	Shady stream side. Soil light blackish brown with less humus.
4	11-16	26/4	1790	N20E	35	25	"	"	Much litter on the ground. Humus not much.
5	17-20	28/4	2050	S80W	40	71	"	<i>Quercus lanuginosa</i>	Dried, somewhat rocky. Ground cleared by grazing.
7	22	"	2050	S30E	45	50	"	"	Soil light brown with some humus.
8	23	29/4	2000	N0E	40	23	"	Broad-leaved	Soil humid, black with rich humus.
	24	"	2020	N70E	35	23	"	"	Drier than the previous but still humid with rich humus.
	25	"	2010	N85E	40	31	"	"	Soil light reddish brown. Drier than the previous.
	26	"	2030	N40W	40	33	"	"	Soil black with rich humus.
	27	"	2020	N15E	40	33	"	"	Soil black, somewhat humid. Humus rich.
9	28	30/4	1520	S60E	25	62	"	Pine	Floor covered with fallen pine leaves. Soil drier, light brown with some humus.
	29	"	1530	S20E	40	76	"	"	
10	30	"	1480	S50W	40	81	"	"	Soil light brownish red without humus.
29	64	7/7	3690	S80E	33		Chilime	<i>Rhododendron campanulatum</i>	Rich in litter and humus.
30	65	"	3210	S7E	40		"	<i>Abies</i>	Located at the lower limit of the <i>Rhododendron</i> forest and mixed with upper part of <i>Abies</i> forest. Not typical. Rich in litter and humus.
31	66	"	3200	S5W	45	4	"	"	Rich in litter and humus.
32	67-72	"	2840	S20W	45		"	<i>Tsuga</i>	
33	73-78	8/7	2720	S20E	30		"	<i>Quercus semecarpifolia</i>	Size of trees is less than those on the upper slope but the coverage is denser here.
34	79-84	"	2330	S40W	35		"	Broad-leaved	Riverside. The floor very rocky with rich humus and litter.
35	91-92	14/7	3750	N	30	18	Langtang	<i>Betula</i>	Rich in humus.
36	93	"	"	N62E	43	10	"	"	More shady and humid than the previous plot with much litter and humus.
37	94	"	3740	N5E	35		"	"	More open than the previous plot. Somewhat disturbed. Rocky.
44	100-105	17/7	3000	S5W	40		"	<i>Quercus semecarpifolia</i>	Upper limit of the forest, developed on debris.
47	107	2/9	2040	N20W	45		Chisapani Garhi	Evergreen Oak	
48	108	3/9	1730	N44E	30		Chandragiri	Pine	Soil reddish with scarce humus.
49	109	4/9	1760	S	30		"	Broad-leaved	Reservoir forest. Much disturbed recently and protected after disturbance. Soil red, gravelly, without humus.
50	111	"	2190	N90W	50		"	<i>Quercus semecarpifolia</i>	
51	112	4/9	2170	S10W	45		Chndragiri	Evergreen Oak	
52	113	"	2190	N30W	43		"	"	
53	114	24/9	3060	N55W	25	14	Kalingchok	<i>Rhododendron campanulatum</i>	Soil gray brown, sandy clay with rich humus. Trunks covered with mosses. Forest surrounding Kharka.
54	115-120	26/9	3120	S80E	25		"	<i>Abies</i>	
55	121	26/9	3180	N90E	15		"	<i>Juniperus</i>	Humus black. Tree branches covered with mosses.
56	122-124	26/9	3250	S10E	30		"	<i>Abies</i>	
59	130	27/9	3410	N10W	40		"	<i>Betula</i>	Ground rocky with much humus. Soil black brown.

Plot No.	Quadrat No.	Date/ Month in 1970	Altitude m	Exposure	Gradient	Relative Light Intensity %	Place Name	Forest Type	Remarks
60	131-133	"	3170	N90E	30		"	<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	
61	134-139	19/10	2540	S25W	25		Phulchoki	<i>Quercus semecarpifolia</i>	Near the top. Rich in litter and humus.
62	140-145	20/10	2480	N30E	20		"	"	
63	146-151	21/10	2430	N20E	35		"	Evergreen Oak	
64	152-157	3/11	2030	N10E	50	11	"	"	Soil brown black, humid with much humus.
65	158	4/11	2020	N25E	45	17	"	"	
66	159-160	"	1970	S35W	45	17	"	<i>Quercus lanuginosa</i>	
67	161-162	"	1750	N20W	35	19	"	Broad-leaved	
68	163	"	1750	N35W	30	13	"	Evergreen Oak	Secondary forest.
69	164	5/11	2270	N25W	60		"	<i>Rhododendron arboreum</i>	Much disturbed.
70	165-166	5/11	2030	S60W	60		Phulchoki	<i>Rhododendron arboreum</i>	
71	167-168	14/11	400	SSE	20	29	Bagdeo	Montane <i>Shorea</i>	Ground scatteredly rocky. Soil whitish with hard grains. Litter scarce.
72	169	"	400	N15E	35	13	"	"	
73	170	"	420	S60E	40	29	"	"	
74**	171	15/11	100		Level	20	Patraia	Plain <i>Shorea</i>	
75**	172	"	100		"	14	"	"	Denser than the previous plot. Ground flooded in rain season. Undergrowth scarce and low.
76**	173	"	100		"	13	"	<i>Terminalia</i>	A depression. Marshy in rain season.
77**	174-175	16/11	1050	N5E	30	23	Makwampur Garhi	<i>Schima</i>	Fairy disturbed.
78**	176-177	"	820	N65E	30	22	"	Montane <i>Shorea</i>	Near the upper limit of <i>Shorea</i> forest.
79**	178	18/11	210		Level		Narayani	<i>Acacia</i>	On sandy and somewhat gravelly river bed.
80**	179	19/11	170	S70W	10	22	"	Plain <i>Shorea</i>	Soil pale brownish red, hard.
81**	180	"	180	N55W	5		"	"	
92	191	12/3	2180	N15W	45		Bumro	<i>Rhododendron arboreum</i>	Soil black with much humus.
93	192	"	2070	N30W	45	20	"	"	
94	193	"	2090	S70E	35	5	"	"	Much disturbed. Dried. Soil black with humus.
95	194	13/3	2020	S60E	35	35	Tandj	<i>Quercus lanuginosa</i>	Dried. Soil light brown with less humus.
96	195	"	2020	S40E	30	29	"	"	
97	196	"	2020	S80W	40	44	"	"	
98	197	14/3	2560	N80E	25	50	Nigale	<i>Quercus lanuginosa</i>	Rich in humus.
100	199	"	3020	N40E	25	25	Dobatya	<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	Near the upper limit of <i>Rhododendron</i> forest. Rich in humus.
101	200	"	3010	S80E	40	31	"	"	Rich in humus.
102	201	"	3000	S80E	25	35	"	"	
103	202	15/3	2300	N30E	35	66	Rol Khane	Broad-leaved	Rich in humus.
104	203	"	2290	N30E	30	27	"	"	Rich in humus.
105	204	"	2300	N10E	15	35	"	<i>Symplocos</i>	Soil black. Rich in humus.
106	205	16/3	2450	N90E	25		"	<i>Rh. arboreum</i>	Disturbed very much.
107	206	"	2540	N30E	20	41	"	"	Rich in humus.
108	207	"	2660	N70E	25	19	"	<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	Shady, humid and concave slope. Rich in humus.
109	208	"	2650	S70E	35	27	"	"	Drier and less shady than the previous. Rich in humus.
110	209	"	2660	N80E	30	46	"	Broad-leaved	Near the ridge.

Plot No.	Quadrat No.	Date/ Month in 1970	Altitude m	Exposure	Gradient	Relative Light Intensity %	Place Name	Forest Type	Remarks
111	210-211	17/4	3250	N90E	15	33	Kalingchok	<i>Abies</i>	Stream side. Mossy. Rich in humus.
112	212	"	3300	S50E	25	44	"	"	Concave slope. Rich in humus.
114	214	18/4	3400	S80E	35	50	"	<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	Rich in humus. Trunks mossy.
115	215	18/4	3320	S70E	25	22	"	<i>Juniperus</i>	
116	216	18/4	3000	S60E	20	41	Kalingchok	<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	Rich in humus.
117	217	3/5	3060	S75E	30	54	"	<i>Abies</i>	Soil light black with much humus.
118	218	"	3050	S90W	30	66	"	"	Soil light black with much humus.

Table 2. List of plots arranged by altitudinal order.
(Size of quadrat 10m x 10m. 20m x 20m for the plot with double asterisk (**))

Plot No.	Altitude m	Relative Light Intensity %	Tree				Herb		Place Name	Forest Type	Table No.
			No. of Species	Community Height m	Stem Density per ha	% of Basal Area	No. of Species	Community Height cm			
74**	100	20	10	31	375	0.3921	6	43	Patraia	Plain <i>Shorea</i>	3
75**	"	14	9	32	525	0.4054	5	30	"	"	3
76**	"	13	12	33	350	0.2371	5	40	"	<i>Terminalia</i>	7
80**	170	22	7	27	625	0.3652	5	23	Narayani	Plain <i>Shorea</i>	4
81**	180		4	27	700	0.5185	4	18	"	"	4
79**	210		9	21	400	0.2071	4	22	"	<i>Acacia</i>	8
71**	400	29	7	20	850	0.6593	6	23	Bagdeo	Montane <i>Shorea</i>	5
72	"	13	8	22	600	0.2137	5	23	"	"	5
73	420	29	9	15	1400	0.4848	6	27	"	"	5
78**	820	22	8	19	700	0.2920	5	22	Makwampur Garhi	Montane <i>Shorea</i>	6
77**	1050	23	4	20	300	0.2791	10	33	"	<i>Schima</i>	11
10	1480	81	1	22	300	0.2268	8	25	Nagarjun	Pine	12
2	1520	54	3	25		0.2268	11	23	"	<i>Schima</i>	9
9	1530	69	4	22	950	0.8852	4	19	"	Pine	12
1	1540	43	4	16			8	32	"	<i>Schima</i>	9
3	1600	15	4	20			10	28	"	"	9
48	1730		1	35	400	0.4654	16	5	Chandragiri	Pine	13
67	1750	19	6	17	950	0.2939	7	25	Phulchoki	Broad-leaved	23
68	1750	13	4	8	1300	0.2764	9	22	Phulchoki	Evergreen Oak	19
49	1760	1				0.4100			Chandragiri	Broad-leaved	22
4	1790	25	5	26	483	0.2799	7	23	Nagarjun	<i>Schima</i>	10
66	1970	17	7	16	1250	0.4153	6	23	Phulchoki	<i>Quercus lanuginosa</i>	36
8	2020	26	5	20	260	0.4698	9	27	Nagarjun	Broad-leaved	20
65	2020	17	4	14	700	1.6136	9	23	Phulchoki	Evergreen Oak	18
95	2020	35	3	17			5	30	Kalingchok	<i>Quercus lanuginosa</i>	37
96	2020	29	3	18			6	30	"	"	37
97	2020	44	1	12			8	20	"	"	37
64	2030	11	5	27	683	0.6809	12	32	Phulchoki	Evergreen Oak	17
70	2030		3	9	1050	0.4436	8	28	"	<i>Rh. arboreum</i>	31
47	2040		6	18			8	33	Chisapani Garhi	Evergreen Oak	14

Plot No.	Altitude m	Relative Light Intensity %	Tree				Herb		Place Name	Forest Type	Table No.
			No. of Species	Community Height m	Stem Density per ha	% of Basal Area	No. of Species	Community Height cm			
5	2050	71	3	10	600	0.2808	12	35	Nagarjun	<i>Quercus lanuginosa</i>	35
7	2050	50	1	11	300	0.1021	6	23	"	"	35
93	2070	20	3	7			13	30	Kalingchok	<i>Rh. arboreum</i>	32
94	2090	5	6	8			7	30	"	"	32
51	2170		2	18	1000	0.6377	7	27	Chandragiri	Evergreen Oak	15
92	2180		8	8			14	50	Kalingchok	<i>Rh. arboreum</i>	32
50	2190		8	18	300	0.2854	14	67	Chandragiri	<i>Quercus semecarpifolia</i>	27
52	2190		3	15	500	0.6294	11	40	"	Evergreen Oak	15
69	2270		4	11	900	0.8076	17	30	Phulchoki	<i>Rh. arboreum</i>	30
104	2290	27	8	10			12	30	Kalingchok	Broad-leaved	24
103	2300	66	10	7			11	30	"	"	24
105	2300	35	5	12			7	30	"	<i>Symplocos</i>	24
34	2330		3	23	483	0.7558	6	27	Chilime	Broad-leaved	21
63	2430		4	22	700	0.4471	6	36	Phulchoki	Evergreen Oak	16
106	2450		2	5			6	30	Kalingchok	<i>Rh. arboreum</i>	33
62	2480		3	20	200	0.6714	9	31	Phulchoki	<i>Quercus semecarpifolia</i>	29
107	2540	41	7	8			8	20	Kalingchok	<i>Rh. arboreum</i>	34
61	2540		2	20	267	0.6796	12	25	Phulchoki	<i>Quercus semecarpifolia</i>	28
98	2560	50	5	9			8	20	Kalingchok	<i>Quercus lanuginosa</i>	
109	2650	27	5	13			8	10	"	<i>Rh. arboreum</i> var. <i>campbelliae</i>	48
110	2660	46	5	10			5	15	"	Broad-leaved	48
108	2660	19	10	10			5	30	Rol Khane	<i>Rh. arboreum</i> var. <i>campbelliae</i>	48
33	2720		1	24	950	0.7002	8	21	Chilime	<i>Quercus semecarpifolia</i>	25
32	2840		3	40	433	1.2285	10	27	"	<i>Tsuga</i>	44
44	3000		2	15	950	0.7839	10	28	Langtang	<i>Quercus semecarpifolia</i>	26
102	3000	35	1	5			4	30	Kalingchok	<i>Rh. arboreum</i> var. <i>campbelliae</i>	47
116	3000	41	2	8			6	8	"	"	50
101	3010	31	4	5			4	10	Kalingchok	<i>Rh. arboreum</i> var. <i>campbelliae</i>	47
100	3020	25	1	5			3	10	"	"	47
118	3050	66	3	25			9	33	"	<i>Abies</i>	43
53	3060	14	5	5	3200	0.7365	10	20	"	<i>Rh. campanulatum</i>	52
117	3060	54	4	18			7	32	"	<i>Abies</i>	43
54	3120		3	46	1000	0.9710			"	"	39
60	3170		2	23	867	1.1763	9	11	"	"	40
55	3180				700	0.6496	11	10	"	<i>Juniperus</i>	45
31	3200	4	4	23	1400	0.4140	3	20	Chilime	<i>Abies</i>	38
30	3210		5	22	2600	0.5676	4	18	"	"	38
56	3250		3	35	566	1.0436	13	13	Kalingchok	"	39
111	3250	33	4	38			6	10	"	"	41
112	3300	44	3	40			6	10	"	"	42
115	3320	22	2	15			9	5	"	<i>Juniperus</i>	46
114	3400	50	2	10			9	10	"	<i>Rh. arboreum</i> var. <i>campbelliae</i>	49
58	3400						19	30	"	<i>Rh. campanulatum</i>	53
59	3410		3	9	800	0.3962	11	23	"	<i>Betula</i>	55
29	3690		6	4			12	10	Chilime	<i>Rh. campanulatum</i>	51
37	3740		7	13	800	0.5079	10	37	Langtang	<i>Betula</i>	54
35	3750	18	4	10	950	0.3647	8	47	Langtang	<i>Betula</i>	54
36	"	10	6	15	1800	0.6882	6	40	"	"	54

Table 3. Floristic Composition of Plain *Shorea robusta* Forest (Plot No. 74 & 75).

Canopy		74-171		75-172		M	
Plot & Quadrat No. (20 x 20m)	74-171	75-172	74-171	75-172	M		
1st Layer	27 ~ 31	29 ~ 32	28 ~ 32				
Height m	3	7	5				
No. of Species	95	95	95				
Coverage %	2	+	1.0				
<i>Adina cordifolia</i>		+					
<i>Dillenia pentagyna</i>		+					
<i>Albizia lebbek</i>		+					
<i>Bauhinia vahlii</i>		8	8.0				
<i>Shorea robusta</i>		+					
<i>Terminalia chebula</i>							
<i>T. tomentosa</i>		2	1.0				
4950		1	0.5				
4955							
2nd Layer	5 ~ 8	5 ~ 8	5 ~ 8				
Height m	7	2	5				
No. of Species	+	+	+				
Coverage %	+	+	+				
<i>Bridelia retusa</i>							
<i>Cordia</i>							
<i>Holopterna antichysenterica</i>		+					
<i>Dillenia pentagyna</i>		+					
<i>Lagerstroemia parviflora</i>							
<i>Ougeinia dalbergioides</i>		+					
4952		+					
4954		+					
Shrub Layer	1 ~ 2	0.5 ~ 1	0.8 ~ 1.5				
Height m	22	20	25				
No. of Species	90	90	90				
Coverage %							
<i>Adina cordifolia</i>	1	+	0.5				
<i>Albizia lebbek</i>							
<i>Bauhinia vahlii</i>		6	3.0				
<i>Carreya arborea</i>		+					
<i>Cassia fistula</i>	1		0.5				
<i>Clerodendron infortunatum</i>							
<i>Brucea mollis</i>		+					
<i>Dalbergia sisso</i>		+					
<i>Crewia laevigata</i>	1		0.5				
<i>C. vestita</i>							
<i>Holoptela integrifolia</i>		+					
<i>Lagerstroemia parviflora</i>		+					
<i>Leea crispa</i>	1		0.5				
<i>L. sambucina</i>		+					
<i>Mallotus philippinensis</i>	1		0.5				
<i>Micromerium integerrimum</i>	2		1.0				
<i>Ougeinia dalbergioides</i>	1		0.5				
<i>Phyllanthus emblica</i>	+						
<i>Shorea robusta</i>	+						
<i>Sterculia villosa</i>	2		2.0				
<i>Synecarpus anacardium</i>		+					
<i>Terminalia berrelia</i>		+					
<i>T. tomentosa</i>		+					
<i>Woodfordia fruticosa</i>							
<i>Ziziphium mauritiana</i>	1		0.5				

Herb Layer		74-171		75-172		M	
Quadrat No. (1m x 1m)	74-171	75-172	74-171	75-172	M		
Height cm	15 ~ 50	10 ~ 40	5 ~ 10	0 ~ 30	10 ~ 50	8 ~ 37	
No. of Species	4	7	4	6	4	6	
Coverage %	40	40	40	80	75	40	53
<i>Bauhinia vahlii</i>				+	+	1	0.2
<i>Brucea mollis</i>				+	+	+	
<i>Cordia</i>							
<i>Shorea robusta</i>	+	+	+	2	2	+	0.8
<i>Stephania hernandiifolia</i>							
Acanthaceae							
4969							
<i>Imperata cylindrica</i>	4	4	4	7	5	4	4.7
<i>Phoenix humilis</i>		+	+				
<i>Smilax lanceifolia</i>	3	+	+				0.5
<i>Thysanotena maxima</i>		+	+				
<i>Lygodium japonicum</i>				1	+		0.2

Table 6. Floristic Composition of Montane *Shorea* Forest (Plot No. 78).

Canopy Plot & Quadrat No. (10m x 10m)				Herb Layer Quadrat No. (1m x 1m)							
	78-176	78-177	M	78-176			78-177			M	C
				1	2	3	1	2	3		
1st Layer											
Height m	19	19	19	Height cm							
No. of Species	1	1	1	0~20	0~30	0~30	0~20	0~15	0~15	0~22	
Coverage %	90	70	80	No. of Species							
				4	4	5	4	4	7	5	
				Coverage %							
				50	60	60	25	50	50	49	
<i>Shorea robusta</i>											
	9	7	8								
2nd Layer											
Height m	3~	2~									
No. of Species	7	7	8								
Coverage %	40	30	35								
<i>Callicarpa macrophylla</i>											
	+										
<i>Ehretia 4991</i>											
		+									
<i>Emblia officinalis</i>											
		+									
<i>Glochidion velutinum</i>											
	1	+	0.5								
<i>Grewia vestita</i>											
	+										
<i>Pueraria phaseoloides</i>											
	+										
<i>Semecarpus anacardium</i>											
	+	+									
<i>Shorea robusta</i>											
	+										
<i>Terminalia tomentosa</i>											
	3	2	2.5								
Convulaceae 4987											
		+									
4990											
	+	+									
Shrub Layer											
Height m	1~	0.5~									
No. of Species	2	1.5	12								
Coverage %	20	20	20								
<i>Acacia</i>											
	+	+									
<i>Blumea</i>											
		1	0.5								
<i>Desmodium gangeticum</i>											
	+	+									
<i>Ehretia laevis</i>											
	+	+									
<i>Ehretia 4991</i>											
<i>Emblia officinalis</i>											
	+	+									
<i>Eugenia operculata</i>											
	+										
<i>Glochidion velutinum</i>											
		+									
<i>Hibiscus?</i>											
	+	+									
<i>Inula cappa</i>											
	1		0.5								
<i>Lagerstroemia parviflora</i>											
	+										
<i>Leea umbraculifera</i>											
	+	+									
<i>Terminalia tomentosa</i>											
		+									
<i>Urena lobata</i>											
		+									
<i>Woodfordia fruticosa</i>											
	+										
<i>Phoenix humilis</i>											
	2	1	1.5								
<i>Smilax ovatifolia</i>											
	+	+									

Table 7. Floristic Composition of *Terminalia* Forest (Plot No. 76).

Canopy Plot & Quadrat No. (20m x 20m)				Herb Layer Quadrat No. (1m x 1m)			
	76-173		M	76-173-			M
				1	2	3	
Height m				Height cm			
No. of Species	33			10~50	10~30	10~40	10~40
Coverage %	3			6	4	5	5
	60			No. of Species			
				40	30	30	33
				Coverage %			
<i>Carreya arborea</i>							
	1						
<i>Shorea robusta</i>							
	+						
<i>Terminalia tomentosa</i>							
	5						
2nd Layer							
Height m	6~9						
No. of Species	10						
Coverage %	60						
<i>Bauhinia purpurea</i>							
	+						
<i>Bridelia retusa</i>							
	+						
<i>Carreya arborea</i>							
	2						
<i>Grewia</i>							
	+						
<i>Holoptelea integrifolia</i>							
	1						
<i>Lagerstroemia parviflora</i>							
	2						
<i>Mallotus philippinensis</i>							
	+						
<i>Terminalia chebula</i>							
	+						
<i>Ziziphus rugosa</i>							
	+						
4963							
	+						
Shrub Layer							
Height m	0.5~1						
No. of Species	11						
Coverage %	30						
<i>Bridelia retusa</i>							
	+						
<i>Carreya arborea</i>							
	+						
<i>Croton oblongifolia</i>							
	1						
<i>Hibiscus</i>							
	+						
<i>Holarrhena antidysenterica</i>							
	+						
<i>Holoptelea integrifolia</i>							
	+						
<i>Leea crispa</i>							
	1						
<i>Mallotus philippinensis</i>							
	1						
<i>Shorea robusta</i>							
	+						
<i>Smilax lanceifolia</i>							
	+						
<i>Lygodium japonicum</i>							
	1						

Table 8. Floristic Composition of *Acacia* Forest (Plot No. 79).

Canopy Plot & Quadrat No. (10m x10m)	79-178
1st Layer	
Height m	21
No. of Species	2
Coverage %	60
<i>Acacia eburnea</i>	6
<i>Trachelospermum lucidum</i>	+
2nd Layer	
Height m	2.5~
No. of Species	5
Coverage %	5
<i>Adina cordifolia</i>	+
<i>Caesalpinia 5000</i>	+
<i>Clerodendron 4998B</i>	+
<i>Colebrookia oppositifolia</i>	1
<i>Erythrina 0001</i>	+
<i>Toddaria asiatica</i>	+
<i>Trachelospermum lucidum</i>	+
<i>4998</i>	+
3rd Layer	
Height m	0.5~
No. of Species	1
Coverage %	70
<i>Colebrookia oppositifolia</i>	+
<i>Eupatorium adenophorum</i>	+
<i>Toddaria asiatica</i>	+
<i>Elihorzia</i>	7

Herb Layer Quadrat No. (1m x 1m)	79-178-	1	2	3	M	C
Height cm	0~	0~	0~	0~		
No. of Species	20	25	20	22		
Coverage %	2	5	5	4		
<i>Ageratum conizoides</i>	9	2	6	5.7	V	
<i>Eupatorium adenophorum</i>	+				II	
<i>Boerhavia diffusa</i>	+				III	
<i>Peperomia cordata</i>	+				III	
<i>Rungia parviflora</i>	1	6	+	3.3	V	
<i>5000B Labiatae</i>			+		II	

Table 9. Floristic Composition of *Schima* Forest (Plot No. 1, 2 & 3).

Canopy Plot & Quadrat No. (10m x 10m)	1-7	1-8	2-9	3-10	M	C
1st Layer						
Height m	15~	17	25	20	19	
No. of Species	3	3	2	2	3	
Coverage %	80	70	70	50	67	
<i>Castanopsis indica</i>	2				0.5	I
<i>C. tribuloides</i>		4			1.0	I
<i>Eurya acuminata</i>	1				0.3	I
<i>Juglans regia</i>			7		1.8	I
<i>Meliosma simplicifolia</i>				1	0.3	I
<i>Myrica esculenta</i>	+					I
<i>Schima wallichii</i>	6	3	1	3	3.3	I
2nd Layer						
Height m	4	5~4	8	8~5	6~5	
No. of Species	2	5	2	3	3	
Coverage %	10	5	5	70	22	
<i>Castanopsis indica</i>	+	1			0.3	I
<i>C. tribuloides</i>	+		1		0.3	IV
<i>Cinnamomum tamala</i>				2	0.5	I
<i>Lyonia ovalifolia</i>	+					I
<i>Myrica esculenta</i>		1			0.3	I
<i>Myrsine semiserrata</i>	+			5	1.3	III
<i>Quercus spicata</i>						I
<i>Schima wallichii</i>						I
<i>Wendlandia puberula</i>		2	+		0.5	I
Shrub Layer						
Height m	1.5~	1.5~	1	2~	1.5~	
No. of Species	19	10	8	6	11	
Coverage %	40	50	5	30	31	
<i>Berberis asiatica</i>	+	+				III
<i>Castanopsis indica</i>	+	1	+	+	0.3	V
<i>C. tribuloides</i>	+					I
<i>Cinnamomum tamala</i>				+		I
<i>Craniotome versicolor</i>			+			I
<i>Eurya acuminata</i>	+	+				III
<i>Glochidion velutinum</i>	+	+				III
<i>Ligustrum nepalense</i>	+	+	+			IV
<i>Lyonia ovalifolia</i>	+					I
<i>Machilus dutthiei</i>				+		I
<i>Melastoma malabarica</i>	+					I
<i>Myrica esculenta</i>	+					I
<i>Myrsine africana</i>	+					I
<i>M. semiserrata</i>	4	5	+		2.3	IV
<i>Hypericum uralum</i>	+					I
<i>Osmanthus fragrans</i>				+		I
<i>Phyllanthus parvifolius</i>	+	+				III
<i>Pogostemon amaranthoides</i>	+		1		0.3	I
<i>Pyrus pashia</i>	+					I
<i>Quercus spicata</i>	+			+		III
<i>Rubus ellipticus</i>	+					I
<i>R. scandens</i>			+			I
<i>Sarcococca coriacea</i>	+	1	+	1	0.5	V
<i>Schima wallichii</i>	+	+				III
<i>Strobilanthes pentastemonoides</i>			+			I
<i>Wendlandia puberula</i>	+	+				III

Herb Layer Quadrat No. (1m x 1m)	1-7-	1-8-	2-9-	3-10-	M	C
Height cm	50~	30~	30~	25~	25~	30~
No. of Species	20	20	15	5	5	5
Coverage %	9	7	9	4	9	9
<i>Achlyanthus bidentata</i>						+
<i>Berberis asiatica</i>						
<i>Blumea aromatica</i>		+	+			
<i>B. hieracifolia</i>						+
<i>Ceropegia pubescens</i>						+
<i>Castanopsis tribuloides</i>	1	+				
<i>Craniotome versicolor</i>						+
<i>Desmodium oxyphyllum</i>		+				
<i>Ficus foveolata</i>						+
<i>F. neritifolia</i>						+
<i>Hedera nepalensis</i>						
<i>Melissa flava</i>						1
<i>Myrsine semiserrata</i>	+	+	+	+	+	+
<i>Hypericum uralum</i>						+
<i>Osmanthus fragrans</i>						1
<i>Phoebe lanceolata</i>						1
<i>Phyllanthus parvifolius</i>	+					
<i>Piper peepuloides</i>						+
<i>Pogostemon amaranthoides</i>	+					1
<i>Polygonum microcephalum</i>						+
<i>Pyrus pashia</i>						+
<i>Rhus javanica</i>						+
<i>Rubia cordifolia</i>						+
<i>Rubus scandens</i>						+
<i>Rumex hastata</i>						+
<i>Sarcococca coriacea</i>						+
<i>Shutteria vestita</i>						+
<i>Strobilanthes atropurpureus</i>	+					+
<i>S. pentastemonoides</i>						3
<i>Tetrasperma serrulata</i>						4
<i>Viola serpens</i>						2
<i>Youngia japonica</i>	+					+
<i>Ziziphus incurva</i>		+				+
<i>Capillipedium assimile</i>	+					+
<i>Carex cruciata</i>	+					+
<i>C. longipes</i>						1
<i>Chrysopogon aciculatus</i>	+					1
<i>Ophiopogon intermedia</i>						1
<i>Oplismenus compositus</i>						+
<i>Pogonatherum panicum</i>	4	2	5	2		+
<i>Athyrium drepanopterum</i>						+
<i>Chelanthus albomarginata</i>						+
<i>Dryopteris sparsa</i>						+
<i>Microlepis spelunca</i>						+
<i>Polystichum aculeatum</i>						1
<i>P. lentum</i>						1
<i>Selaginella monospora</i>						+
<i>Pteris pellucida</i>						3

Table 10. Floristic Composition of *Schima* Forest (Plot No. 4).

Canopy Plot & Quadrat No. (10m x 10m)	4-				4-				4-11-				4-12-				4-13-				4-14-							
	11	12	13	14	15	16	M	C	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1st Layer																												
Height m																												
Number of Species																												
Coverage %																												
<i>Acer oblongum</i>																												
<i>Cornus oblonga</i>																												
<i>Lyonia ovalifolia</i>																												
<i>Machilus duthiei</i>																												
<i>Myrica esculenta</i>																												
<i>Myrica lanccolata</i>																												
<i>Pyrus pashia</i>																												
<i>Quercus spicata</i>																												
<i>Schima wallichii</i>																												
2nd Layer																												
Height m																												
Number of Species																												
Coverage %																												
<i>Acer oblongum</i>																												
<i>Eurya acuminata</i>																												
<i>Lyonia ovalifolia</i>																												
<i>Myrica semiserrata</i>																												
<i>Phoebe lanceolata</i>																												
<i>Pyrus pashia</i>																												
Shrub Layer																												
Height m																												
Number of Species																												
Coverage %																												
<i>Ardisia macrocarpa</i>																												
<i>Coryopteris grata</i>																												
<i>Castanopsis tribuloides</i>																												
<i>Cinnamomum tamala</i>																												
<i>Daphne blbaya</i>																												
<i>Desmodium oxiphyllum</i>																												
<i>Enbotrya hookeriana</i>																												
<i>Ligustrum nepalense</i>																												
<i>Machilus duthiei</i>																												
<i>Mahonia nepalensis</i>																												
<i>Myrsine semiserrata</i>																												
<i>Hypericum unahin</i>																												
<i>Myrica semiserrata</i>																												
<i>Phoebe lanceolata</i>																												
<i>Pilea scripta</i>																												
<i>Pogostemon anaranthoides</i>																												
<i>Pyrus pashia</i>																												
<i>Quercus spicata</i>																												
<i>Randia tetrasperma</i>																												
<i>Rubus foliosus</i>																												
<i>Sarcococa contacca</i>																												
<i>Strobilanthes peninsularmonoides</i>																												
<i>Xylosma controversa</i>																												
<i>Arundinaria filicata</i>																												
<i>Smilax aspera</i>																												
<i>Dryopteris sparsa</i>																												
<i>Polystichum aculeatum</i>																												
Herb Layer																												
Quadrat No. (1m x 1m)																												
Height cm																												
Number of Species																												
Coverage %																												
<i>Ardisia macrocarpa</i>																												
<i>Bosmiinghausenia abhiflora</i>																												
<i>Crotopgia pubescens</i>																												
<i>Cinnamomum tamala</i>																												
<i>Codarioblyx notortius</i>																												
<i>Desmodium oxiphyllum</i>																												
<i>Enbotrya hookeriana</i>																												
<i>Ficus foecolata</i>																												
<i>Gentiana capitata</i>																												
<i>Indigofera</i>																												
<i>Ligustrum nepalense</i>																												
<i>Myrsine semiserrata</i>																												
<i>Phoebe lanceolata</i>																												
<i>Rhynchosporium verticillatum</i>																												
<i>Strobilanthes</i>																												
<i>Strobilanthes atropurpureus</i>																												
<i>S. peninsularmonoides</i>																												
<i>Tetrasperma serrulata</i>																												
<i>Viola</i>																												
<i>Youngia japonica</i>																												
<i>Cappillidium aspinille</i>																												
<i>Carex longipes</i>																												
<i>Ophiopogon intermedia</i>																												
<i>Oplismenus compositus</i>																												
<i>Smilax aspera</i>																												
<i>Athyrium macrocarpum</i>																												
<i>Dryopteris sparsa</i>																												
<i>Dryopteris lucidum</i>																												
<i>Pteris quadrifida</i>																												
<i>Selaginella monospora</i>																												
<i>Thelypteris esquirolii</i>																												
Moss																												

Table 11. Floristic Composition of *Schima* Forest (Plot No. 77).

Canopy Plot & Quadrat No. (10m x 10m)				77-174	77-175	M	Herb Layer Plot & Quadrat No. (1m x 1m)									
				77-174-1	77-175-1		77-174-2	3	77-175-2	3	M	C				
1st Layer							Height cm									
Height m				20			0~	5~	0~	0~	0~	0~	0~	0~		
No. of Species				2	1	2	40	20	40	40	25	30	33			
Coverage %				50	60	55	10	8	9	14	11	10	10			
<i>Castanopsis tribuloides</i>				4		2	50	50	70	80	60	40	58			
<i>Schima wallichii</i>				3	6	5										
2nd Layer							Height cm									
Height m				3~6	3~6											
No. of Species				3	2	3										
Coverage %				20	30	25										
<i>Castanopsis tribuloides</i>				1	1	2										
<i>Eugenia operculata</i>				+												
<i>Machilus odoratissima</i>				1	2	1.5										
Shrub Layer							Height cm									
Height m				0.5~	0.5~											
No. of Species				17	10	19										
Coverage %				30	10	20										
<i>Castanopsis tribuloides</i>				1	1	2										
<i>Desmodium gangeticum</i>				+	+											
<i>Ehretia</i>				+												
<i>Elshoria blanda</i>				+												
<i>Emblia officinalis</i>				+												
<i>Eugenia operculata</i>					+											
<i>Eurya acuminata</i>					+											
<i>Glochidion velutinum</i>				+	+											
<i>Leea umbraculifera</i>				+												
<i>Lyonia ovalifolia</i>				+												
<i>Machilus odoratissima</i>				+	+											
<i>Osbeckia stellata</i>				+												
<i>Quercus spicata</i>				+	+											
<i>Rhus javanica</i>				+	+											
<i>Sageretia</i>				+												
<i>Schima wallichii</i>					+											
<i>Shorea robusta</i>				1		0.5										
<i>Walsula trijuga</i>				+	+											
<i>Costus speciosus</i>				+	1											
<i>Phoenix humilis</i>				+												

Table 12. Floristic Composition of *Pinus* Forest (Plot No. 9 & 10)

Canopy Plot & Quadrat No. (10m x 10m)						9-28-	9-29-	10-30-	M	C	Herb Layer Plot & Quadrat No. (1m x 1m)													
						28	29	30			9-28-1	2	3	9-29-1	2	3	10-30-1	2	3	M	C			
1st Layer						Height cm																		
Height m						20	23	22	22			30~	20~	15~	20~	15~	15	25~	25~	25~	21~			
Number of Species						1	1	1	1			10	10	10	10	10	10	10	10	10	10			
Coverage %						85	70	60	71			40	40	60	50	20	10	40	40	30	36			
<i>Pinus roxburghii</i>						9	7	6	7.3	V	<i>Colebrookia oppositifolia</i>													
2nd Layer						Height m																		
Height m						10~	10~	5	8															
Number of Species						2	1	1	1															
Coverage %						30	30	+	20															
<i>Myrica esculenta</i>						1			0.3	II	<i>Coniza japonica</i>													
<i>Pinus roxburghii</i>								+			+													
<i>Schima wallichii</i>						2	3		1.7	III	<i>Ocrotan caudatus</i>													
3rd Layer						Height m																		
Height m						3-2	2		3															
Number of Species						4	1		2															
Coverage %						+	+		0															
<i>Myrica esculenta</i>						+				II	<i>Glochidion velutinum</i>													
<i>Myrsine semiserrata</i>						1			0.3	II	+													
<i>Sarcococca coriacea</i>						1			0.3	II	<i>Justicia procumbens</i>													
<i>Schima wallichii</i>						+	+			III	+													
Shrub Layer						Height m																		
Height m						1	1~	1.5~	1.2															
Number of Species						8	11	8	9															
Coverage %						5	20	20	15															
<i>Berberis asiatica</i>						+	+	2	0.7	V	<i>Lepidagathis hyalina</i>													
<i>Betula alnoides</i>						+				II	+													
<i>Castanopsis indica</i>						+				II	<i>Melastoma malabarica</i>													
<i>C. tribuloides</i>							+			II	+													
<i>Clematis vitifolia</i>								+		II	<i>Moghania strobilifera</i>													
<i>Cinnamomum glanduliferum</i>						+				II	+													
<i>Colebrookia oppositifolia</i>						+		1	0.3	III	<i>Myrsine semiserrata</i>													
<i>Fraxinus floribunda</i>							+			II	+													
<i>Glochidion velutinum</i>							+	+		III	<i>Phyllanthus parvifolius</i>													
<i>Melastoma malabarica</i>						+				II	+													
<i>Myrsine semiserrata</i>						1	2	+	1.0	V	<i>Rubus ellipticus</i>													
<i>Phyllanthus parvifolius</i>							+			II	+													
<i>Pinus roxburghii</i>							+			II	<i>Arundinella nepalensis</i>													
<i>Rubus ellipticus</i>							+		0.7	III	+													
<i>Sarcococca coriacea</i>						1	1			III	+													
<i>Schima wallichii</i>						+	+			III	<i>Imperata cylindrica</i>													
<i>Wendlandia coriacea</i>							+			II	+													
<i>Woodfordia fruticosa</i>								+		II	<i>Opismenus compositus</i>													

Table 13. Floristic Composition of *Pinus* Forest (Plot No. 48)

Canopy Plot & Quadrat No. (10m x 10m)	48-108
1st Layer	
Height m	35
No. of Species	1
Coverage %	40
<i>Pinus griffithii</i>	4
Shrub Layer	
Height m	0.4
No. of Species	6
Coverage %	+
<i>Daphne bholua</i>	+
<i>Ligustrum confusum</i>	+
<i>Phyllanthus parvifolius</i>	+
<i>Schinus wallichii</i>	+
<i>Arisaema tortuosum</i>	+
<i>Pinus griffithii</i>	+

Herb Layer Quadrat No. (1m x 1m)	48-108- 1	2	3	M	C
Height cm	5	5	5	5	
No. of Species	15	18	15	16	
Coverage %	100	100	97	99	
<i>Ageratum conyzoides</i>	+	+	+		V
<i>Centella asiatica</i>	1		1	0.7	III
<i>Clinopodium umbrosum</i>	+	+	+		V
<i>Erigeron 2741</i>	+	+	+		III
<i>Gonostegia hirta</i>	+	+	+		V
<i>Justicia simplex</i>	+	+	+		V
<i>Micromeria biflora</i>	+	+	+		II
<i>Moghania strobilifera</i>	+	+	+		V
<i>Oxalis corniculatus</i>	+	+	+		V
<i>Phyllanthus parvifolius</i>	+	1		0.3	III
<i>Scutellaria discolor</i>		+	+		III
<i>Smithia geminiflora</i>	+	+	+		V
<i>Viola serpens</i>	+	+	+		V
<i>Cyanotis cristata</i>	+	+			III
<i>Fimbristylis diphylla</i>	1	2		1.0	III
<i>Isachne miliacea</i>	2	1	1	1.3	V
<i>Sporobolus fertilis</i>	8	8	9	8.3	V
<i>Lepisorus 2742</i>			1	0.3	II
<i>Lygodium japonicum</i>			+		II
<i>Selaginella involvens</i>	6	4	4	4.7	V

Table 14. Floristic Composition of Evergreen Oak Forest (Plot No. 47).

Canopy Plot & Quadrat No. (10m x 10m)	47-107
1st Layer	
Height m	18
No. of Species	2
Coverage %	75
<i>Quercus glauca</i>	6
<i>Quercus spicata</i>	2
2nd Layer	
Height m	10
No. of Species	5
Coverage %	40
<i>Brassaiopsis</i>	1
<i>Machilus duthiei</i>	2
<i>Mallotus nepalensis</i>	+
<i>Polygala arillata</i>	+
<i>Quercus spicata</i>	1
Shrub Layer	
Height m	2~1
No. of Species	9
Coverage %	80
<i>Brassaiopsis</i>	+
<i>Ficus nemoralis</i>	+
<i>Glochidion velutinum</i>	+
<i>Maesa chista</i>	+
<i>Pilea symmerica</i>	7
<i>Polygonum chinense</i>	+
<i>Rubia acuminata</i>	+
<i>Strobilanthes atropurpureus</i>	+
<i>Arundinaria hookeriana</i>	1

Herb Layer Quadrat No. (1m x 1m)	47-107- 1	2	3	M	C
Height cm	40~	30~	30~	33~	
No. of Species	10	7	5	5	7
Coverage %	80	90	50	73	
<i>Boehmeria polystachya</i>		+			II
<i>Elatostema obtusa</i>		9		3	II
<i>Myrsine semiserrata</i>	+				II
<i>Rhynchospermum verticillatum</i>		+	2	0.7	III
<i>Rubus acuminatus</i>	1			0.3	II
<i>Strobilanthes atropurpureus</i>	1		+	0.3	III
<i>Carex filicina</i>			+		II
<i>Carex finistima</i>	+				II
<i>Globa racemosa</i>	3	+	3	2	V
<i>Oplismenus compositus</i>	2	2	5	3	V
<i>Gramineae 2719</i>	+				II
<i>Contiogramme caudata</i>	1			0.3	II
<i>Dryopteris odontoloma</i>	1	1		0.7	III
<i>Dryopteris</i>		1		0.3	II
<i>Pteris venusta</i>		+	+		III

Table 15. Floristic Composition of Evergreen Oak Forest (Plot No. 51 & 52).

Canopy Plot & Quadrat No. (10m x 10m)	51-112	52-113	M
1st Layer			
Height m	18	15	17
No. of Species	1	2	2
Coverage %	90	90	90
<i>Quercus lineata</i>	9	9	9.0
<i>Rhododendron arboreum</i>		1	0.5
2nd Layer			
Height m	10	10	10
No. of Species	1	2	2
Coverage %	30	+	15
<i>Rhododendron arboreum</i>	3	+	1.5
<i>Vitis parvifolia</i>		+	
Shrub Layer			
Height m	2~1	2~1	2~1
No. of Species	10	7	9
Coverage %	30	+	15
<i>Berberis aristata</i>	+		
<i>Castanopsis tribuloides</i>	+		
<i>Cochlanthus gracilis</i>		+	
<i>Daphne bholua</i>	+		
<i>Desmodium tiliacifolium</i>		+	
<i>Elaeagnus conferta</i>	1		0.5
<i>Inzigofera pulchella</i>		+	
<i>Lindera pulcherrima</i>		+	
<i>Lyonia ovalifolia</i>	+		
<i>Machilus</i>	+		
<i>Quercus lineata</i>	+		
<i>Rubus acuminatus</i>		+	
<i>Symplocos crataegoides</i>	+		
<i>Viburnum erubescens</i>		+	
<i>Arundinaria hookeriana</i>	3	+	1.5
<i>Smilax menispermoides</i>	+		

Herb Layer Quadrat No. (1m x 1m)	51-112- 1	2	3	52-113- 1	2	3	M	C
Height cm	30	20	30	40	60~	20	33	
No. of Species	6	7	8	13	11	10	9	
Coverage %	20	80	40	70	80	60	58	
<i>Ainslia pteropoda</i>	1	1	1	2	6	5	2.7	V
<i>Aristolochia griffithii</i>		+	+	+	+			III
<i>Cochlanthus gracilis</i>	1	+	+	+	+		0.2	III
<i>Daphne bholua</i>								II
<i>Hedera nepalensis</i>			+	+				II
<i>Lindera bifaria</i>					+	+		II
<i>Lyonia ovalifolia</i>						+		I
<i>Myrsine nepalensis</i>						+		I
<i>Myrsine semiserrata</i>					+			I
<i>Ophiorhiza</i>				1	1		0.3	II
<i>Prunus cerasoides</i>	+							I
<i>Sanicula elata</i>				+				I
<i>Shuteria vestita</i>				+				I
<i>Strobilanthes atropurpureus</i>				1			0.2	I
<i>Tetrastigma serrulata</i>					+	+		II
<i>Viola serpens</i>					+			I
<i>Arisaema erubescens</i>		+						I
<i>Chrysopogon aciculatus</i>			1				0.2	I
<i>Disporum cantoniense</i>			+					I
<i>Chlorophytum nepalense</i>		+						I
<i>Hedycaium ellipticum</i>	1	7		3	3		2.3	III
<i>Ophiopogon clarkei</i>	+	1	1	1		+	1.0	IV
<i>Roscoea purpurea</i>	1		+				0.2	II
<i>Smilax menispermoides</i>						+		I
<i>Athyrium drepanopterum</i>					1		0.2	I
<i>Botrychium lanuginosum</i>		+						I
<i>Onychium japonicum</i>					1	+		I
<i>Pteris cretica</i>					1		0.2	I
<i>Leptodontium</i>						+		I
Moss						+		II

Table 18. Floristic Composition of Evergreen Oak Forest (Plot No. 65).

Canopy	
Plot & Quadrat No. (10m x 10m)	65-158
1st Layer	
Height m	14
Number of Species	1
Coverage %	40
<i>Quercus lineata</i>	4
2nd Layer	
Height m	5~8
Number of Species	4
Coverage %	80
<i>Lyonia ovalifolia</i>	+
<i>Cleyera japonica</i> var. <i>wallichiana</i>	+
<i>Lindera pulcherrima</i>	3
<i>Quercus lineata</i>	5
Shrub Layer	
Height m	0.7
	~2
Number of Species	13
Coverage %	50
<i>Caryopteris foetida</i>	+
<i>Ligustrum indicum</i>	+
<i>Myrsine semiserrata</i>	2
<i>Strobilanthes atropurpureus</i>	+
<i>Viburnum coriaceum</i>	+
<i>Indigofera pulchella</i>	+
<i>Lindera pulcherrima</i>	2
<i>Rhamnus nepalensis</i>	+
<i>Rubus diffusus</i>	+
<i>R. rugosus</i>	+
<i>Arundinaria maling</i>	3
<i>Cautleya spicata</i>	+
<i>Polystichum squarrosum</i>	+

Herb Layer	
Plot & Quadrat No. (1m x 1m)	65-158-
	1 2 3 M C
Height cm	0~ 5~ 5~ 3~
	20 30 20 23
Number of Species	9 7 10 9
Coverage %	40 40 50 43
<i>Myriactis nepalensis</i>	+
<i>Myrsine semiserrata</i>	+
<i>Ophiorrhiza prostrata</i>	+
<i>Strobilanthes atropurpureus</i>	+
<i>Indigofera pulchella</i>	+
<i>Lindera pulcherrima</i>	+
<i>Parthenocissus semicordata</i>	1
<i>Piper peepuloides</i>	1
<i>Quercus lineata</i>	+
<i>Rubus rugosus</i>	+
<i>Tetrastigma semiserrata</i>	+
<i>Carex cruciata</i>	1
<i>C. longipes</i>	2
<i>Oplismenus compositus</i>	1
<i>Athyrium drepanopterum</i>	+
<i>Polystichum squarrosum</i>	+
<i>Selaginella</i>	+
Mosses	+

Table 19. Floristic Composition of Evergreen Oak Forest (Plot No. 68).

Canopy	
Plot & Quadrat No. (10m x 10m)	68-163
1st Layer	
Height m	8
Number of Species	4
Coverage %	95
<i>Castanopsis tribuloides</i>	2
<i>Eurya acuminata</i>	+
<i>Myrica esculenta</i>	1
<i>Quercus lineata</i>	7
Shrub Layer	
Height m	1~2
Number of Species	18
Coverage %	40
<i>Fraxinus floribunda</i>	+
<i>Gaultheria fragrantissima</i>	+
<i>Lyonia ovalifolia</i>	+
<i>Myrsine semiserrata</i>	1
<i>Symplocos theaeifolia</i>	+
<i>Carpinus viminea</i>	+
<i>Castanopsis indica</i>	+
<i>C. tribuloides</i>	2
<i>Codariocalyx motorius</i>	+
<i>Eurya acuminata</i>	+
<i>Machilus duthiei</i>	+
<i>Myrica esculenta</i>	+
<i>Osbeckia stellata</i>	+
<i>Phyllanthus parvifolius</i>	+
<i>Quercus lineata</i>	1
<i>Q. spicata</i>	+
<i>Schima wallichii</i>	+
<i>Arundinaria maling</i>	+

Herb Layer	
Plot & Quadrat No. (1m x 1m)	68-163-
	1 2 3 M C
Height cm	0~ 0~ 5~ 2~
	20 15 30 22
Number of Species	12 7 7 9
Coverage %	60 50 50 53
<i>Ainsliea latifolia</i>	2
<i>Isodon coetsa</i>	+
<i>Myrsine semiserrata</i>	+
<i>Scutellaria discolor</i>	1
<i>Carpinus viminea</i>	+
<i>Castanopsis tribuloides</i>	+
<i>Lespedeza eriocarpa</i>	+
<i>Indigofera pulchella</i>	+
<i>Phyllanthus parvifolius</i>	+
<i>Quercus lineata</i>	+
<i>Carex longipes</i>	3
<i>Selaginella</i>	+
<i>Thuidium</i>	4

Table 20. Floristic Composition of Broadleaved Forest (Plot No. 8).

Canopy Plot & Quadrat No. (10m x 10m)	8-23-							8-24-							8-25-							8-26-							8-27-							M	C																																																			
	23	24	25	26	27	M	C	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	M	C																																																										
1st Layer																																																																																								
Height m	15~18							20							20							20							20																																																											
Number of Species	4							3							4							3							4																																																											
Coverage %	90							60							95							90							95							86																																																				
<i>Acer oblongum</i>	4							4														1.6							II																																																											
<i>Albizia mollis</i>								4														0.8							I																																																											
<i>Castanopsis tribuloides</i>								3							4							0.6							I																																																											
<i>Eriobotrya hookeriana</i>															1							0.2							I																																																											
<i>Lindera pulcherrima</i>	1																					0.2							I																																																											
<i>Machilus duthiei</i>	3							2							8							2.6							III																																																											
<i>Machilus</i>								2														0.4							I																																																											
<i>Michelia kisopa</i>								3							5							1.8							III																																																											
<i>Phoebe lanceolata</i>	1							4							3							4							1.6		IV																																																									
<i>Quercus glauca</i>								4														0.8							II																																																											
2nd Layer																																																																																								
Height m	7~10							8~10							6~8							5~7							7~10																																																											
Number of Species	4							5							3							2							2							3																																																				
Coverage %	20							60							20							15							23																																																											
<i>Acer oblongum</i>	+																												1																																																											
<i>Camellia kissoi</i>								6							2							1.6							II																																																											
<i>Castanopsis tribuloides</i>	1							3														0.6							I																																																											
<i>Lindera pulcherrima</i>															+							0.2							I																																																											
<i>Machilus duthiei</i>															+							1																																																																		
<i>Michelia kisopa</i>								1														0.2							I																																																											
<i>Myrsine semiserrata</i>															1							0.2							I																																																											
<i>Phoebe lanceolata</i>	3														+							0.6							II																																																											
<i>Quercus spicata</i>																																																																																								
Shrub Layer																																																																																								
Height m	2~1							2~1							1							2~1							1																																																											
Number of Species	17							16							12							11							6							12																																																				
Coverage %	80							60							30							30							60							52																																																				
<i>Acer oblongum</i>	+																												1																																																											
<i>Albizia mollis</i>																													1																																																											
<i>Camellia kissoi</i>								3							+							0.6							III																																																											
<i>Caryopteris grata</i>	+							+							+							+							V																																																											
<i>Castanopsis tribuloides</i>								+							+														II																																																											
<i>Cinnamomum tamala</i>	+																												1																																																											
<i>Daphne bhola</i>															+														1																																																											
<i>Disporum cantoniense</i>	+														+							0.2							III																																																											
<i>Dodecademia grandiflora</i>	1							+																					1																																																											
<i>Eurya cerasifolia</i>	+																												1																																																											
<i>Ligustrum nepalense</i>								+							+														II																																																											
<i>Lindera pulcherrima</i>	+							2							2							+							0.8		II																																																									
<i>Machilus duthiei</i>								+							+														V																																																											
<i>Mahonia nepalensis</i>								+							+														I																																																											
<i>Hypericum uratum</i>								+																					I																																																											
<i>Phoebe lanceolata</i>	+														2							0.4							I																																																											
<i>P. pallida</i>																													I																																																											
<i>Pilea cristata</i>								+																					I																																																											
<i>Pogostemon amaranthoides</i>								+																					I																																																											
<i>Quercus lanuginosa</i>								+																					I																																																											
<i>Q. spicata</i>	2							+							+							0.4							IV																																																											
<i>Rubia manjith</i>	+							+																					II																																																											
<i>Rubus ellipticus</i>								+																					II																																																											
<i>R. paniculatus</i>	+																												I																																																											
<i>Sarcococca coriacea</i>															+														I																																																											
<i>S. hookeriana</i>	4							2							+							5							2.2		V																																																									
<i>Tetrastigma serrulata</i>	+							+																							II																																																									
<i>Carex baccans</i>								+																							I																																																									
<i>Microlepia speluncea</i>	+																														I																																																									
<i>Polystichum aculeatum</i>	+							+							+							+									V																																																									
<i>P. setiferum</i>	1							+														0.2							II																																																											
<i>Pteris wallichiana</i>	+																														I																																																									
Herb Layer																																																																																								
Plot & Quadrat No. (1m x 1m)	8-23-							8-24-							8-25-							8-26-							8-27-							M	C																																																			
Height cm	30~10							30~10							30~10							30~10							30~10									27~10																																																		
Number of Species	13							9							14							11							9							8																																																				
Coverage %	85							60							80							90							85							95							60																																													
<i>Acer oblongum</i>																													+																																																											
<i>Aster</i>																																																																																								
<i>Boeninghausenia albiflora</i>																						1							+							0.1		I																																																		
<i>Camellia kissoi</i>															+																																																																									
<i>Caryopteris grata</i>															+																																																																									
<i>Dodecademia grandiflora</i>	+																												1							0.1		I																																																		
<i>Elatostema sessilifolia</i>	1							2							5							+														0.5		II																																																		
<i>Ficus foveolata</i>																						+																																																																		
<i>F. nerifolia</i>																						+																																																																		
<i>Galium asperifolium</i>															1							2							1							0.3		I																																																		
<i>Gentiana capitata</i>															+																																																																									
<i>Hedera nepalensis</i>																						+							+							1		I																																																		
<i>Hydrocotyle javanica</i>	+							+																					1							+							0.1		I																																											
<i>H. nepalensis</i>																													+							1							+							0.1		II																																				
<i>Lysimachia alternifolia</i>																													+																																																											
<i>Michelia kisopa</i>																													+																																																											
<i>Myrsine semiserrata</i>	+														+							+																																																																		
<i>Hypericum uratum</i>															+							+																																																																		
<i>Ophiorhiza fasciculata</i>	1							+							+							+							+							0.1		III																																																		
<i>Pilea crinita</i>																													+																																																											
<i>Piper paeupuloides</i>															+																																																																									
<i>Polygonum microcephala</i>	1							+							2							+														0.2		I																																																		
<i>Quercus spicata</i>																						+																																																																		
<i>Rhynchospermum verticillatum</i>																						1							+							+							0.1		II																																											
<i>Rubia manjith</i>															+																																																																									
<i>Sarcococca hookeriana</i>															+																																																																									
<i>Tetrasperma serrulata</i>															+																																																																									
<i>Viola</i>																						+																																																																		
<i>Capillidium assimile</i>															1							6							+							4							3							1							1.0		II																													
<i>Carex cruciata</i>	2							2							1							2							2							3							+							1							1							+							0.8		III															
<i>C. longipes</i>	1							2							5							4							5							5							3							2							+							1							1							1							2.0		IV	
<i>Goodyera repens</i>																																																																																								
<i>Ophiopogon intermedia</i>																																				+																																																				
<i>Oplismenus compositus</i>	1							+							1							1																												+														0.2		II																						
<i>Dennstaedtia appendiculata</i>																						1																																																																		
<i>Dryopteris sparsa</i>																																											+														0.1																															
<i>Microlepia speluncea</i>	1																																																																						0.1		I															
<i>Polystichum aculeatum</i>																						1							1							2																					0.2		I																													
<i>P. setiferum</i>	1							1							1							1							1							1							2														1							1							+							0.5		III								
<i>Pteris pellucida</i>	1							+							+							+							+							+							+																					0.1		II																						
<i>P. wallichiana</i>																																																																																					0.1		I	
<i>Selaginella monospora</i>	1							+							+																																																								0.1		I															
Moss																																																																																								

Table 21. Floristic Composition of Broadleaved Forest (Plot No. 34).

Canopy Plot & Quadrat No. (10m x 10m)	34- 79	80	81	82	83	84	M	C
1st Layer								
Height m	23							23
No. of Species	4	2	2	2	4	2		3
Coverage %	100	100	100	95	100	90		98
<i>Acer campbellii</i>	7	8						2.5 II
<i>Alnus nepalensis</i>	1							0.2 I
<i>Juglans regia</i>			6	4	2	2		2.3 III
<i>Lindera bifaria</i>	5	3	5	7	6	9		5.8 V
<i>Machilus duthiei</i>	+				3			0.5 II
<i>Meliosma dillenifolia</i>					1			0.2 I
2nd Layer								
Height m		10	10	10	10	10		10
No. of Species	0	2	1	1	2	1		1.2
Coverage %		30	+	+	40	20		15
<i>Lindera bifaria</i>		3			+	2		0.8 III
<i>Machilus duthiei</i>		+	+	+	4			0.7 III
Shrub Layer								
Height m	3~	2~	1~	1.5~	2~	2~		1.9~
No. of Species	1	0.5	0.5	0.5	1	1		0.75
Coverage %	4	6	3	5	5	3		4.3
<i>Acer pectinatum</i>				+	+			II
<i>Daphne bhulua</i>		+		+				II
<i>Elaeagnus</i>		+						I
<i>Girardinia heterophylla</i>	+			+	+			III
<i>Lindera bifaria</i>	+	+	+	1	+			IV
<i>Machilus duthiei</i>		+	+	+				III
<i>Meliosma dillenifolia</i>	+							I
<i>Senecio acuminatus</i>		+		+	+			III
<i>Senecio</i>	+							I
<i>Viburnum erubescens</i>		+						I
<i>Urtica parviflora</i>			+	2	+	+	0.3	III

Herb Layer Plot & Quadrat No. (1m x 1m)	34-79- 1	2	3	34-80- 1	2	3	34-81- 1	2	3	34-82- 1	2	3	34-83- 1	2	3	34-84- 1	2	3	M	C	
Height cm	20~	30~	30~	30~	30~	25~	30~	40~	20~	20~	30~	20~	30~	30~	25~	25~	20~	30~	30~	27~	
No. of Species	5	5	10	5	5	5	5	5	5	4	9	8	5	10	5	5	0	5	7	6	
Coverage %	20	40	40	50	60	20	40	80	40	75	30	30	30	30	40	50	80	30	7	43.6	
<i>Acer pectinatum</i>										2	+			2						0.1 I	
<i>Achyranthes aspera</i>													1							0.2 I	
<i>Achyranthes bidentata</i>	1	2	+	2	3			7	1	1				+				6	+	1.3 III	
<i>Boehmeria sidaefolia</i>							3									1				0.2 I	
<i>Daphne bhulua</i>				+	+	+														0.1 I	
<i>Elatostema surculosa</i>		1			+	+									+					0.1 I	
<i>Girardinia heterophylla</i>					+				1					+		+	4			0.3 II	
<i>Gynostemma pentaphylla</i>		+																		0.1 I	
<i>Hedyotis suaveolens</i>	2		2	+	1	2				+		2				3	2	1		0.8 III	
<i>Impatiens</i>								1											+	+	0.3 I
<i>Lindera bifaria</i>					2									3						1	0.1 I
<i>Parthenocissus semicordata</i>																					0.1 I
<i>Pilea scripta</i>	+				2	1	2	+		+	+										0.3 II
<i>Rubia cordifolia</i>									+	1											0.1 I
<i>Sanicula elata</i>														+							0.1 I
<i>Senecio acuminatus</i>				1			+														0.4 I
<i>Solanum crassipetalum</i>								1			6										0.1 I
<i>Stephania hernandifolia</i>					+	+	+														0.1 I
<i>Urtica parvifolia</i>											2	+	+								0.1 I
<i>Viola serpens</i>		1	+																		0.1 I
<i>Arisaema concinnum</i>																					0.1 I
<i>Arisaema tortuosum</i>														+	+						0.1 I
<i>Arisaema</i>																					0.1 I
<i>Calanthe plantaginea</i>																					+
<i>Capillipedium assimile</i>																					+
<i>Cautleya lutea</i>														1							0.1
<i>Ophiopogon clarkei</i>														+							0.1
<i>Oplismenus compositus</i>	1								1	3											0.3 I
<i>Smilax menispermoides</i>					+																0.3 I
<i>Pteris</i>	+		+	+																	I
<i>Leskea</i>					1	2				+											0.2 I
<i>Thuidium</i>	2					1	+						+	1		2	1	+	+	+	0.4 III

Table 22. Floristic Composition of Broadleaved Forest (Plot No. 49).

Canopy			Herb Layer							
Plot & Quadrat No. (10m x 10m)	49-109	49-110	Quadrat No. (1m x 1m)			49-109-49-110				
1st Layer			1	2	3	1	2	3	M	C
Height m	14~8	14~7	10	10	10	10	10	10	10	
No. of Species	16	11	6	4	2	5	5	6	5	
Coverage %	100	100	+	10	+	+	+	+	+	
Measurement has been done by means of basal area because of bad visibility of canopy. See Table 57.										
Shrub Layer										
Height m	2~1	1~0.5								
No. of Species	6	6								
Coverage %	+	+								
<i>Acer oblongum</i>	+	+								
<i>Mahonia napaulensis</i>	+	+								
<i>Maytenus rufa</i>	+	+								
<i>Piper mullesua</i>	+	+								
<i>Quercus glauca</i>	+	+								
<i>Xylosma controversa</i>	+	+								
<i>Smilax asper</i>	+									
<i>S. lancetifolia</i>		+								
			<i>Machilus duthiei</i>	+	+		+	+		IV
			<i>Piper mullesua</i>	+						I
			<i>Pyrus pashia</i>		+					I
			<i>Strobilanthes atropurpureus</i>	+						I
			<i>Trachelospermum lucidum</i>	+	1	+		+	+	0.2 IV
			<i>Viola serpens</i>		+					I
			<i>Xylosma controversa</i>			+				II
			<i>Ziziphus mauritiana</i>				+		+	II
			<i>Ophiopogon clarkei</i>	+			+	+	+	III
			<i>Smilax asper</i>					+	+	I
			<i>Fern 2747</i>	+				+		II

Table 23. Floristic Composition of Broadleaved Forest (Plot No. 67).

Canopy					Herb Layer							
Plot & Quadrat No. (10m x 10m)	67-161	67-162	M	C	Plot & Quadrat No. (1m x 1m)			67-161-67-162				
1st Layer					1	2	3	1	2	3	M	C
Height m	17	17	17		10~30	0~20	0~20	0~20	5~30	5~30	3~25	
Number of Species	1	2	2		7	8	6	8	8	7	7	
Coverage %	100	100	100		25	40	60	40	60	30	43	
<i>Carpinus viminea</i>	10	10	10	V								
<i>Quercus glauca</i>		1	0.5	III								
2nd Layer												
Height m	5~7	7	6~7									
Number of Species	7	3	4									
Coverage %	50	70	60									
<i>Myrsine semiserrata</i>	+			III								
<i>Symplocos theaeifolia</i>	+	1	0.5	V								
<i>Acer oblongum</i>		3	1.5	III								
<i>Carpinus viminea</i>	2		1.0	III								
<i>Euonymus acuminatus</i>			0.5	III								
<i>Ilex umbellulata</i>	+			III								
<i>Lindera pulcherrima</i>		3	1.5	III								
<i>Maytenus rufa</i>	2		1.0	III								
<i>Schima wallichii</i>	+			III								
Shrub Layer												
Height m	0.6~1.5	1~1.5	0.8~1.5									
Number of Species	18	11	14									
Coverage %	20	20	20									
<i>Myrsine semiserrata</i>	1	1	1.0	V								
<i>Symplocos theaeifolia</i>	+			III								
<i>Viburnum erubescens</i>	+			III								
<i>Acer oblongum</i>		+		III								
<i>Castanopsis tribuloides</i>	+	+		III								
<i>Dobinea vulgaris</i>		+		III								
<i>Euonymus</i>		+		III								
<i>Eurya acuminata</i>	1	+	0.5	V								
<i>Lindera pulcherrima</i>	+	1	0.5	V								
<i>Machilus duthiei</i>	+	+		V								
<i>Myrica esculenta</i>	+			III								
<i>Pilea symmerica</i>	+			III								
<i>Piper peepuloides</i>	+			III								
<i>Quercus glauca</i>	+			III								
<i>Quercus spicata</i>	+			III								
<i>Rubus rugosus</i>	+	+		V								
<i>Sarcococca coriacea</i>	+	+		V								
<i>Schima wallichii</i>	+			III								
<i>Xylosma controversa</i>	+			III								
<i>Smilax aspera</i>	+			III								
<i>S. ferox</i>	+	+		V								
					<i>Ainsliaea latifolia</i>		1			+	0.2	II
					<i>Craniotome furcata</i>				+			I
					<i>Myriactis nepalensis</i>		+	+				II
					<i>Myrsine semiserrata</i>	1	+	+		+	+	0.2 IV
					<i>Ophiorrhiza prostrata</i>					+		I
					<i>Strobilanthes atropurpureus</i>	+			1			0.2 II
					<i>Trachelospermum lucidum</i>	1	+	1	1			0.5 III
					<i>Hedera nepalensis</i>				1	1	1	0.5 III
					<i>Machilus duthiei</i>	+						I
					<i>Parthenocissus semicordata</i>			+				I
					<i>Piper peepuloides</i>	1			1	2		0.7 III
					<i>Polygonum filiforme</i>				+	+		II
					<i>Quercus spicata</i>		+					I
					<i>Carex finitima</i>	1	1	2	3	3	1	1.8 V
					<i>Globba clarkei</i>		2			+		0.3 II
					<i>Smilax ferox</i>					+		I
					<i>Thysanolaena maxima</i>					+		I
					<i>Athyrium drepanopterum</i>					+		I
					<i>Pteris cretica</i>							I
					<i>Mosses</i>	+	1	5		2	1.3	III

Table 26. Floristic Composition of *Quercus semecarpifolia* Forest

Canopy									Herb Layer																				
Plot & Quadrat No. (10m x 10m)		44-							M	C	44-100-		44-101-			44-102-			44-103-			44-104-			44-105-			M	C
		100	101	102	103	104	105	1			2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3		
1st Layer																													
Height m																													
No. of Species																													
Coverage %																													
<i>Quercus semecarpifolia</i>																													
<i>Sorbus hedlundii</i>																													
2nd Layer																													
Height m																													
No. of Species																													
Coverage %																													
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>																													
<i>Sorbus hedlundii</i>																													
Shrub Layer																													
Height m																													
No. of Species																													
Coverage %																													
<i>Aster</i>																													
<i>Cotoneaster acuminatus</i>																													
<i>Daphne bholua</i>																													
<i>Jasminum humile</i>																													
<i>Leptodermis lanceolata</i>																													
<i>Lonicera obovata</i>																													
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>																													
<i>Rhododendron lepidotum</i>																													
<i>Ribes glaciale</i>																													
<i>Salix</i>																													
<i>Sorbus hedlundii</i>																													
<i>Acronema tenerum</i>																													
<i>Anaphalis margaritacea</i>																													
<i>Angelica</i>																													
<i>Aster</i>																													
<i>Bistorta amplexicaule</i>																													
<i>Cacalia quinqueloba</i>																													
<i>Circaea alpina</i>																													
<i>Clematis montana</i>																													
<i>Cotoneaster acuminatus</i>																													
<i>Geranium gerardianum</i>																													
<i>Heracleum</i>																													
<i>Hypericum uralum</i>																													
<i>Leptodermis lanceolata</i>																													
<i>Myriactis nepalensis</i>																													
<i>Rhododendron lepidotum</i>																													
<i>Saxifraga diversifolia</i>																													
<i>Sedum</i>																													
<i>Senecio alatus</i>																													
<i>Strobilanthes atropurpureus</i>																													
<i>Strobilanthes nutans</i>																													
<i>Thalictrum foliolosum</i>																													
<i>Triplostegia glandulifera</i>																													
<i>Viola biflora</i>																													
<i>Zanthoxylum alatum</i>																													
<i>Allium wallichii</i>																													
<i>Arisaema utile</i>																													
<i>Juncus leucomelas</i>																													
<i>Lilium nepalense</i>																													
<i>Polygonatum verticillatum</i>																													
<i>Roscoea alpina</i>																													
Gramineae 2622																													
<i>Polypodium 2619</i>																													
Fern 2623																													
Fern 2631																													
<i>Entodon</i>																													
<i>Leptodontium</i>																													
<i>Thuidium</i>																													

Table 27. Floristic Composition of *Quercus semecarpifolia* Forest (Plot No. 50).

Canopy		Herb Layer				
Plot & Quadrat No. (10m x 10m)	50-111	Quadrat No. (1m x 1m)	50-111-			
			1	2	3	M
Ist Layer		Height cm	50~	100~	50~	67~
Height m	18		15	20	30	22
No. of Species	1	No. of Species	15	11	15	14
Coverage %	70	Coverage %	50	80	60	63
<i>Quercus semecarpifolia</i>	7	<i>Ainsliaea pteropoda</i>	1			0.3
2nd Layer		<i>Aristolochia griffithii</i>		1		0.3
Height m	10	<i>Boehmeria platyphylla</i>			2	1.0
No. of Species	8	<i>Circaea alpina</i>			+	
Coverage %	30	<i>Clinopodium umbrosum</i>		+		
<i>Eriobotrya hookeri</i>	+	<i>Cochlianthus gracilis</i>	2	1	+	1.0
<i>Lindera pulcherrima</i>	+	<i>Craniotome versicolor</i>			+	
<i>Lyonia ovalifolia</i>	1	<i>Daphne bholua</i>	+			
<i>Myrica rubra</i>	1	<i>Dipsacus atratus</i>			+	
<i>Quercus semecarpifolia</i>	1	<i>Hedera nepalensis</i>	+			
<i>Rhododendron arboreum</i>	1	<i>Leucas mollissima</i>	+			
<i>Symplocos crataegoides</i>	1	<i>Myriactis nepalensis</i>			+	
<i>Viburnum stellatum</i>	+	<i>Myrsine semiserrata</i>	+	+		
Shrub Layer		<i>Polygonum nepalense</i>			+	
Height m	3~2	<i>Rubus acuminatus</i>		+		
No. of Species	11	<i>Shuteria vestita</i>		2	2	1.3
Coverage %	30	<i>Strobilanthes atropurpureus</i>	1	+	+	0.3
<i>Aristolochia griffithii</i>	+	<i>Tetragium serrulata</i>	1			0.3
<i>Cochlianthus gracilis</i>	+	<i>Thalictrum foliolosum</i>	+	+		
<i>Daphne bholua</i>	+	<i>Chlorophytum nepalense</i>			+	
<i>Holboellia latifolia</i>	+	<i>Hedychium ellipticum</i>	2	8	+	3.3
<i>Lindera pulcherrima</i>	+	<i>Ophiopogon clarkei</i>	+		1	0.3
<i>Lyonia ovalifolia</i>	+	<i>Roscoea purpurea</i>			+	
<i>Myrsine semiserrata</i>	+	<i>Smilax menispermoidea</i>	+		1	0.3
<i>Tetragium serrulatum</i>	+	<i>Polystichum</i>			1	1.0
<i>Thalictrum foliolosum</i>	+	<i>Pteris cretica</i>		+		
<i>Arundinaria hookeriana</i>	3	<i>Plagiochila</i>	1			0.3
<i>Smilax menispermoidea</i>	+	<i>Thuidium</i>	+			

Table 30. Floristic Composition of *Lyonia ovalifolia* Forest (Plot No. 98)

Canopy		Herb Layer			
Plot & Quadrat No. (10m x 10m) 98-197		Quadrat No. (1m x 1m) 98-197-			
		1	2	3	M
1st Layer					
Height m	5~8.5				
No. of Species	4				
Coverage %	30				
<i>Lyonia ovalifolia</i>	2				
<i>Quercus semecarpifolia</i>	1				
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	1				
<i>Symplocos pyrifolia</i>	1				
2nd Layer					
Height m	2~4				
No. of Species	4				
Coverage %	60				
<i>Quercus semecarpifolia</i>	1				
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	4				
<i>Symplocos pyrifolia</i>	2				
Shrub Layer					
Height m	1				
No. of Species	8				
Coverage %	20				
<i>Daphne bholua</i>	+				
<i>Lonicera</i>	+				
<i>Phoebe</i>	+				
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	+				
<i>Symplocos ramosissima</i>	1				
<i>S. pyrifolia</i>	+				
<i>Viburnum erubescens</i>	1				
		<i>Anaphalis busua</i>	+		
		<i>Chamabainia cuspidata</i>		+	
		<i>Cotoneaster acuminatus</i>		+	
		<i>Euonymus tingens</i>		1	0.3
		<i>Fragaria nubicola</i>	+		
		<i>Galium hirtiflorum</i>	+		
		<i>Elatostema obtusum</i>		1	0.3
		<i>Gentiana</i>	+		
		<i>Hydrocotyle nepalensis</i>		+	
		<i>Pimpinella diversifolia</i>		+	
		<i>Ranunculus diffusus</i>	+		
		<i>Rubia cordifolia</i>	+		
		<i>Rubus calycinus</i>		+	
		<i>Sanicula elata</i>		+	
		<i>Viola serpens</i>	+		
		<i>Carex brunnea</i>	+		
		<i>C. cruciata</i>	1	+	0.3
		<i>Oplismenus compositus</i>		+	

Table 31. Floristic Composition of *Rhododendron arboreum* Forest (Plot No. 69).

Canopy		Herb Layer				
Plot No. & Quadrat No. (10m x 10m) 69-164		Plot & Quadrat No. 69-164-				
		1	2	3	M	C
1st Layer						
Height m	11					
Number of Species	4					
Coverage %	60					
<i>Rhododendron arboreum</i>	6					
<i>Lyonia ovalifolia</i>	+					
<i>Quercus glauca</i>	+					
<i>Q. semecarpifolia</i>	+					
Shrub Layer						
Height m	0.5~1.5					
Number of Species	23					
Coverage %	60					
<i>Caryopteris foetida</i>	+					
<i>Cuscuta reflexa</i>	+					
<i>Dipsacus atratus</i>	+					
<i>Gaultheria fragrantissima</i>	1					
<i>Jasminum disperum</i>	+					
<i>Lyonia ovalifolia</i>	+					
<i>Myrsine semiserrata</i>	1					
<i>Strobilanthes atropurpureus</i>	+					
<i>Astilbe rivularis</i>	+					
<i>Berberis</i>	+					
<i>Boeninghausenia albiflora</i>	+					
<i>Daphne bholua</i>	3					
<i>Eurya acuminata</i>	2					
<i>Ilex dipyrena</i>	+					
<i>Lindera pulcherrima</i>	+					
<i>Quercus glauca</i>	+					
<i>Q. lineata</i>	+					
<i>Q. semecarpifolia</i>	+					
<i>Zanthoxylum oxyphyllum</i>	+					
<i>Capillidium assimile</i>	1					
<i>Cautleya spicata</i>	+					
<i>Smilax menispermoides</i>	+					
<i>Pteris cretica</i>	+					
		<i>Ainsliaea latifolia</i>	2		1	1.0 III
		<i>A. wallichii</i>	+			
		<i>Dipsacus atratus</i>		2	1	1.0 III
		<i>Gaultheria fragrantissima</i>			1	0.3 II
		<i>Gentiana capitata</i>	+		+	III
		<i>Lyonia ovalifolia</i>		1		0.3 II
		<i>Myrsine semiserrata</i>	+	1	+	0.3 V
		<i>Senecio wallichii</i>	+			II
		<i>Strobilanthes atropurpureus</i>	2	1		1.0 III
		<i>Tripterispermum volubile</i>			+	II
		<i>Valeriana hardwickii</i>	+		+	III
		<i>Viburnum mullaha</i>			+	II
		<i>Anemone rivularis</i>			3	1.0 II
		<i>Berberis</i>			+	II
		<i>Boeninghausenia albiflora</i>			+	II
		<i>Daphne bholua</i>	+		+	III
		<i>Heracleum wallichianum</i>		1		0.3 II
		<i>Holboellia latifolia</i>	+			II
		<i>Pilea umbrosa</i>	1			0.3 II
		<i>Pimpinella diversifolia</i>		+	+	III
		<i>Quercus lineata</i>		+		II
		<i>Sanicula elata</i>	1	+	+	0.3 V
		<i>Schisandra propinqua</i>		+		II
		<i>Tetragium serrulata</i>	+			II
		<i>Viola serpens</i>	+			II
		<i>Sarcococca</i>	+			II
		<i>Capillidium assimile</i>	1	1		0.7 III
		<i>Carex cruciata</i>	1		3	1.3 III
		<i>Cautleya spicata</i>	+			II
		<i>Smilax menispermoides</i>		+		II
		<i>Dryopteris</i>		2	1	1.0 III
		<i>Pteris quadriaurita</i>	+		+	III
		<i>Selaginella</i>	3			1.0 II
		<i>Thuidium</i>	+	5	4	3.0 V
		<i>Bartramia</i>			1	0.3 II
		<i>Plagiochila</i>	+			II

Table 32. Floristic Composition of *Rhododendron arboreum* Forest (Plot No. 70).

Canopy Plot & Quadrat No.(10m x 10m)		70-165	70-166	M	C	Herb Layer Plot & Quadrat No.		70-165-	70-166-	M	C					
								1	2	3	1	2	3	M	C	
1st Layer						Height cm		10~	0~	0~	0~	5~	3~			
Height m		7~9	7~9	7~9		Number of Species		30	20	15	30	40	28			
No. of Species		3	3	3		Coverage %		5	8	5	11	12	8	8		
Coverage %		90	80	85				30	30	+	80	90	80	52		
<i>Rhododendron arboreum</i>		9	8	8.5	V	<i>Ainslia latifolia</i>					2		5	1.2	II	
<i>Lyonia ovalifolia</i>		+	+		V	<i>Crantiotome furcata</i>					+	+			III	
<i>Quercus lanuginosa</i>		1	1	1.0	V	<i>Eupatorium adenophorum</i>					+				I	
Shrub Layer						<i>Galium hirtiflorum</i>					+	+			II	
Height m		0.5~	0.5~	0.5~		<i>Lysimachia debilis</i>					+				I	
No. of Species		29	22	26		<i>Myrsine semiserrata</i>			+	+					II	
Coverage %		30	50	40		<i>Ophiorrhiza prostrata</i>					2	+	1	0.5	III	
<i>Eupatorium adenophorum</i>					III	<i>Rubia manjith</i>					1			0.2	I	
<i>Gaultheria fragrantissima</i>		+			V	<i>Scutellaria repens</i>		+			1			0.2	I	
<i>Inula cappa</i>		+			V	<i>Strobilanthes atro-</i>									II	
<i>Lyonia ovalifolia</i>		+			III	<i>purpureus</i>		3	+	+	1	+	3	1.2	V	
<i>Myrsine semiserrata</i>		1	3	2.0	V	<i>Wendlandia puberula</i>									I	
<i>Randia tetrasperma</i>		+	+		V	<i>Boeninghausenia</i>			+					1	0.2	II
<i>Scutellaria repens</i>		+	+		V	<i>albiflora</i>										
<i>Strobilanthes atropurpureus</i>		+	+		V	<i>Desmodium tiliaefolium</i>		+								
<i>Symplocos phylloclalyx</i>		+	1	0.5	V	<i>Hedera nepalensis</i>										
<i>Viburnum coriaceum</i>		+	+		V	<i>Indigofera</i>			+							
<i>V. erubescens</i>		+			III	<i>Quercus lanuginosa</i>						1		0.2	I	
<i>Wendlandia puberula</i>		+				<i>Tetragium serrulata</i>									I	
<i>Acer oblongum</i>		+			III	<i>Viola serpens</i>									I	
<i>Astilbe rivularis</i>		+	+		V	<i>Carex cruciata</i>			+			3	5	+	1.3	III
<i>Brassiaopsis mitis</i>		+			III	<i>Coelogyne corymbosa</i>		+								
<i>Castanopsis tribuloides</i>		+			III	<i>Cymbidium elegans</i>		1						1	0.3	II
<i>Euonymus frigidus</i>		+			III	<i>Opismenus compositus</i>										
<i>Eurya acuminata</i>		1		0.5	III	<i>Smilax menispermoides</i>										
<i>Ficus nerifolia</i>		+			III	<i>Polystichum squarrosom</i>				1					0.2	II
<i>Glochidion velutinum</i>		+	+		III	<i>Dryopteris splendens</i>			+							
<i>Lindera pulcherrima</i>		+	+		V	<i>Moss</i>			3	+	2	4		1.5	III	
<i>Machilus duthiei</i>		+	+		V	<i>Setiginella</i>										
<i>Michelia kisopa</i>		+	+		V											
<i>Myrica esculenta</i>		+	+		V											
<i>Pilea smilacifolia</i>		+	+		III											
<i>Prunus cerasoides</i>		+	+		III											
<i>Quercus lanuginosa</i>		+	+		III											
<i>Q. lineata</i>		+	+		V											
<i>Rhamnus virgatus</i>		+	+		III											
<i>Tetragium serrulata</i>		+	+		III											
<i>Arundinaria maling</i>		2	2	2.0	V											
<i>Caulleya spicata</i>		1	+	0.5	V											
<i>Smilax menispermoides</i>		+														
<i>Polystichum squarrosom</i>		+			III											

Table 33. Floristic Composition of *Rhododendron arboreum* Forest (Plot No. 92, 93 & 94).

Canopy Plot No. & Quadrat No. (10m x 10m)		92-191	93-192	94-193	M	C	Herb Layer Quadrat No. (1m x 1m)		92-191-	93-192-	94-193-	M	C				
		1	2	3					1	2	3						
1st Layer							Height cm		10~50		10~30		37				
Height m		6~8	7	8	7.5		No. of Species		14	18	11	16	15	9	20~30	5	12
No. of Species		3	2	1	2		Coverage %		60		40		5	8	5	12	35
Coverage %		50	90	30	57		<i>Ainslia latifolia</i>										0.1
<i>Lyonia ovalifolia</i>		2	1	1			<i>Astilbe rivularis</i>				+						I
<i>Rhododendron arboreum</i>		5	9	3	5.7		<i>Berberis asiatica</i>				+						I
<i>Viburnum stellatum</i>		+					<i>Clantotome longicaule</i>			+	+		+				III
2nd Layer							<i>Daphne bhulua</i>		+								I
Height m		1~3	3~5	3~4			<i>Elaeagnus</i>										I
No. of Species		6	2	6	5		<i>Ficus foveolata</i>										I
Coverage %		50	10	90	50		<i>Etilitophyllum pinnatum</i>		+	+	+						II
<i>Camellia kistii</i>				2	0.7		<i>Euonymus</i>										I
<i>Eupatorium adenophorum</i>				+			<i>Eupatorium adenophorum</i>										II
<i>Eurya cerasifolia</i>		1	1	0.7			<i>Gentiana capitata</i>										II
<i>Machilus duthiei</i>		1		0.3			<i>Holboellia latifolia</i>										I
<i>Mahonia napaulensis</i>		+					<i>Hedera nepalensis</i>										I
<i>Maytenus rufa</i>				+			<i>Indigofera</i>		+								I
<i>Myrsine semiserrata</i>				+			<i>Lysimachia debilis</i>										I
<i>Rhododendron arboreum</i>			+	5	1.7		<i>Machilus duthiei</i>			+							I
<i>Sorbus hedlundii</i>		1	+	0.3			<i>Machilus duthiei</i>			+							II
<i>Symplocos pyrifolia</i>							<i>Mahonia</i>			+							II
<i>Gaultheria fragrantissima</i>		1		0.3			<i>Maytenus rufa</i>			+							I
<i>Viburnum erubescens</i>		3		1.0			<i>Myrsine semiserrata</i>			+							II
Shrub Layer							<i>Phyllanthus</i>										I
Height m		1~0.5	1				<i>Randia tetrasperma</i>										III
No. of Species		11	10	11			<i>Rosa pellicuda</i>										I
Coverage %		5	70	38			<i>Rubia coriifolia</i>			+							I
<i>Camellia kistii</i>				+			<i>Rubus ellipticus</i>										I
<i>Castanopsis tribuloides</i>				+			<i>Sarcococca hookeriana</i>		+								I
<i>Daphne bhulua</i>				+			<i>Senecio trilligulatus</i>			+							III
<i>Eupatorium adenophorum</i>				+			<i>Strobilanthes atropurpureus</i>		+	+							0.1
<i>Eurya cerasifolia</i>				+			<i>Symplocos ramosissima</i>										I
<i>Ligustrum nepalense</i>				+			<i>S. pyrifolia</i>										I
<i>Lyonia ovalifolia</i>				+			<i>Viburnum erubescens</i>			+							I
<i>Maytenus rufa</i>				+			<i>Viola serpens</i>										I
<i>Myrsine semiserrata</i>				+			<i>Calanthe</i>			+							I
<i>Phyllanthus</i>				+			<i>Carex cruciata</i>										II
<i>Quercus glauca</i>				+			<i>Ophiopogon intermedius</i>										III
<i>Randia tetrasperma</i>			4	1.3			<i>Opismenus compositus</i>			+							I
<i>Rubus ellipticus</i>							<i>Smilax menispermoides</i>			+							II
<i>Senecio trilligulatus</i>		1		0.3			<i>Athyrium macrocarpum</i>			1							0.1
<i>Sorbus hedlundii</i>							<i>Dryopteris splendens</i>			+							0.1
<i>Symplocos pyrifolia</i>			1	0.3			<i>Peranema cyatheoides</i>										II
<i>Thalictrum reniforme</i>							<i>Polystichum</i>			+							0.2
<i>Viburnum erubescens</i>							<i>Peris quadrifurita</i>			+	+						IV
							<i>Selaginella</i>		2	2	1	1	1				0.6
							<i>Thelypteris esquirolii</i>				1	1	+				0.2

Table 40. Floristic Composition of *Abies* Forest (Plot No. 54 & 56).

Canopy Plot & Quadrat No. (10m x 10m)	54-115	116	117	118	119	120	56-122	123	124	M	C
1st Layer											
Height m	46						35				42
No. of Species	1	1	1	1	1	1	1	1	1	1	1
Coverage %	80	75	50	70	40	60	60	15	20		52
<i>Abies spectabilis</i>	8	8	5	7	4	6	6	2	2	5.3	V
2nd Layer											
Height m	10~5						10~3				10
No. of Species	2	3	2	3	2	1	2	1	3	2	
Coverage %	60	50	70	95	95	90	40	40	60		67
<i>Clematis montana</i>							1		+		I
<i>Juniperus recurva</i>									3	0.4	I
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	5	3	2	+	3		4	4	4	2.8	IV
<i>Rhododendron barbatum</i>	3	4	6	10	8	9				4.4	III
<i>Viburnum erubescens</i>		+		+							I
Shrub Layer											
Height m	1.5~1						1.5~0.5				1.5
No. of Species	4	2	2	2	3	1	2	4	3	3	
Coverage %	15	15	10	+	20	5	5	20	+	10	
<i>Berberis aristata</i>				+	+			1		0.1	II
<i>Daphne bholua</i>	1	1	1	+	2	1	1	1	+	0.9	V
<i>Ilex dipyrrena</i>	+										
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>								+	+		I
<i>Rhododendron barbatum</i>	+	1								0.1	I
<i>Viburnum erubescens</i>	+		+		+		+	+	+		III

Herb Layer Quadrat No. (1m x 1m)	54-115-1	2	3	54-116-1	2
Height cm	10			10	
No. of Species	14	12	14	11	18
Coverage %	70	75	60	95	60
<i>Acronema tenerum</i>					
<i>Ainsliaea aptera</i>					
<i>Ainsliaea wallichii</i>				+	
<i>Ajuga lobata</i>					
<i>Berberis aristata</i>				+	
<i>Chrysosplenium nepalense</i>				+	+
<i>Circaea alpina</i>	+	+	+		
<i>Clematis montana</i>					
<i>Corydalis</i>					
<i>Daphne bholua</i>	+		+		+
<i>Elatostema obtusa</i>	3		+	9	4
<i>Fragaria nubicola</i>	+				
<i>Galium asperuloides</i>					+
<i>Hackelia uncinata</i>				1	+
<i>Hydrocotyle nepalensis</i>		+		+	
<i>Geranium polyanthes</i>					
<i>Impatiens</i>					+
<i>Koenigia nepalensis</i>					
<i>Parocetus communis</i>					
<i>Peracarpa carnosa</i>					
<i>Pilea subalpina</i>	+	+	+	+	+
<i>Pimpinella diversifolia</i>				+	+
<i>Polygonum chinense</i>					+
<i>Polygonum molle</i>					+
<i>Primula petiolaris</i>	+	2	1	+	+
<i>Prunella vulgaris</i>					
<i>Ranunculus diffusus</i>					
<i>Rubia cordifolia</i>	+				
<i>Rubus calycina</i>			2		
<i>Salvia</i>	+	+			+
<i>Sanicula elata</i>					+
<i>Senecio</i>					
<i>Stellaria monosperma</i>				1	+
<i>Stellaria patens</i>					
<i>Strobilanthes atropurpureus</i>	2	3	+	1	1
<i>Thalictrum</i>					
<i>Triplostegia glandulifera</i>	+	+			
<i>Valeriana wallichii</i>					
<i>Viola biflora</i>	+	+			
<i>Umbelliferae</i>	+			+	
<i>Carex cruciata</i>	+	3	3	+	+
<i>Ophiopogon clarkei</i>					
<i>Oreorchis foliosa</i>					
<i>Poa 2970</i>					+
<i>Abies spectabilis</i>					
<i>Athyrium</i>					
<i>Polystichum obliquum</i>					
<i>Polystichum 2973</i>					
<i>Bartramia ithyphylla</i>			1		
<i>Bryum</i>					
<i>Pohlia cruda</i>			2		
<i>Symbrepharis vaginata</i>				+	
<i>Thuidium</i>			1	1	1
<i>Actinohuidium</i>					
<i>Moss 2974</i>	1		+		+
<i>Moss 2970</i>					

Table 41. Floristic Composition of *Abies* Forest (Plot No. 60).

Canopy Plot & Quadrat No. (10m x 10m)					Herb Layer Quadrat No. (1m x 1m)										
					60-131-			60-132-			60-133-				
					1	2	3	1	2	3	1	2	3	M	C
1st Layer					Height cm										
Height m					20	20	10	5	20	5	5	5	5	11	
No. of Species					10	10	8	11	7	8	12	8	11	9	
Coverage %					0	15	30	15	70	75	60	90	80	90	78
<i>Abies spectabilis</i>					2			3	1.7	III					
2nd Layer					Height cm										
Height m					13.5	15	15	14.5							
No. of Species					2	1	1	1							
Coverage %					90	70	50	70							
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>					9	7	5	7.0	V						
<i>Juniperus recurva</i>					1	0.3				II					
Shrub Layer					Height m										
Height m					1	1.5~	1.5~								
No. of Species					2	2	1	2							
Coverage %					+	15	20	12							
<i>Berberis aristata</i>					+										
<i>Daphne bholua</i>					+	1	2	1.0	II						
<i>Viburnum erubescens</i>					+	+				II					
					Height cm										
					20	20	10	5	20	5	5	5	5	11	
					10	10	8	11	7	8	12	8	11	9	
					80	85	70	70	75	60	90	80	90	78	
<i>Senecio Wallichii</i>					+	+	+								
<i>Anemone rivularis</i>					+										
<i>Berberis aristata</i>					+										
<i>Circaea alpina</i>					+										
<i>Clematis montana</i>					+										
<i>Cotoneaster acuminatus</i>					+										
<i>Elatostema obtusa</i>					4	5	4	5	6	5	4	1	2	4.0	
<i>Daphne bholua</i>					+	+				+					
<i>Fragaria nubicola</i>					+										
<i>Hackelia uncinata</i>					+										
<i>Koenigia nepalense</i>					+										
<i>Pilea subalpina</i>					1	+	+	+	+	+	+	+	0.1		
<i>Pimpinella diversifolia</i>					+										
<i>Polygonum campanulatum</i>					+										
<i>Primula petiolata</i>					+	+	+	+	+	+	+	+	+		
<i>Rubia cordifolia</i>					+	+	+								
<i>Rubus caticyna</i>					1										
<i>Salvia</i>					+										
<i>Stellaria patens</i>					+										
<i>Strobilanthes nutans</i>					1	+	+				0.1				
<i>Viola biflora</i>					+										
<i>Carex</i>					3	1	2	+	2	1	+	1	1	1.2	
<i>Polystichum 4606</i>					+										
<i>Actinothuidium</i>					1	+				5					
<i>Thuidium</i>					2	6	2	2	+	2	+	5	2.1		

Table 42. Floristic Composition of *Abies* Forest (Plot No. 111).

Canopy Quadrat No. (10m x 10m)				Herb Layer Quadrat No. (1m x 1m)								
				111-210-			111-211-			M	C	
				1	2	3	1	2	3			
1st Layer				Height cm								
Height m				40	35	38						
No. of Species				1	1	1						
Coverage %				25	75	50						
<i>Abies spectabilis</i>				3	8	5.5						
2nd Layer				Height cm								
Height m				10	10~5							
No. of Species				1	3	2						
Coverage %				70	80	75						
<i>Juniperus</i>				7	4	5.5						
<i>Rhododendron barbatum</i>				1	0.5							
<i>R. arboreum</i> var. <i>campbelliae</i>				4	2.0							
3rd Layer				Height m								
Height m				2~3								
No. of Species				2								
Coverage %				10								
<i>Rhododendron barbatum</i>				1								
<i>R. campanulatum</i>				1								
Shrub Layer				Height m								
Height m				1	1	1						
No. of Species				5	4	5						
Coverage %				15	5	10						
<i>Ainsliaea</i>				+								
<i>Berberis aristata</i>				+								
<i>Daphne bholua</i>				1	+	0.5						
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>				+								
<i>R. barbatum</i>				+								
<i>R. campanulatum</i>				+								
				Height cm								
				5~10	4	10	5~10	5	2	5~10		
				6	100	100	30	60	40	72		
				100	100	100	30	60	40	72		
<i>Arabis</i>				+								
<i>Berberis aristata</i>				+								
<i>Daphne bholua</i>				1								
<i>Elatostema obtusa</i>				+								
<i>Fragaria nubicola</i>				+								
<i>Gypsophila cerastioides</i>				+								
<i>Hemiphragma heterophyllum</i>				+								
<i>Polygonum molle</i>				+								
<i>Primula petiolata</i>				1	1	+	+	+	0.3			
<i>Rubus fockeana</i>				+								
<i>Senecio graciliflorus</i>				3								
<i>Umbelliferae</i>				+								
<i>Valeriana wallichii</i>				+								
<i>Carex</i>				2	1	2	0.8					
<i>Luzura 0990</i>				1	1	0.3						
<i>Abies spectabilis</i>				+								
<i>Juniperus</i>				+								
<i>Lycopodium</i>				+								
<i>Actinothuidium hookeri</i>				10	9	9	+	4.7				
<i>Psychomitrium tortulum</i>				+								
<i>Thuidium cymbifolium</i>				1								

Table 43. Floristic Composition of *Abies* Forest (Plot No. 112).

Canopy Plot & Quadrat No. (10m x 10m)		Herb Layer Quadrat No. (1m x 1m)				
112-212		112-212-				
		1	2	3	M	C
1st Layer						
Height m	40	3~10				
No. of Species	1	6 5 8 6				
Coverage %	15	70 50 80 67				
<i>Abies spectabilis</i>						
2						
2nd Layer						
Height m	10~12					
No. of Species	2					
Coverage %	90					
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>						
7						
<i>R. barbatum</i>						
3						
Shrub Layer						
Height m	1~1.5					
No. of Species	2					
Coverage %	10					
<i>Berberis aristata</i>						
+						
<i>Daphne bholua</i>						
1						
		<i>Daphne bholua</i> + + III				
		<i>Elatostema obtusa</i> + 2 1 1.0 V				
		<i>Fragaria nubicola</i> + + II				
		<i>Prinula petiolata</i> + 1 5 2.0 V				
		<i>Ranunculus</i> 2 1 0.3 II				
		<i>Rubus fockeana</i> + + + V				
		<i>Carex</i> 7 4 + 3.7 V				
		<i>Poa</i> 1 0.3 II				
		<i>Ptychomitrium tortulum</i> 3 1.0 II				
		<i>Thuidium cymbifolium</i> + II				

Table 44. Floristic Composition of *Abies* Forest (Plot No. 117 & 118).

Canopy Plot & Quadrat No. (10m x 10m)				Herb Layer Quadrat No. (1m x 1m)							
117-217 118-218 M				117-217- 118-218-							
				1	2	3	1	2	3	M	C
1st Layer											
Height m	15~18	25	22	5~ 5~ 5~ 5~ 5~ 5~ 5~							
No. of Species	1	1	1	50 15 30 20 30 50 32.5							
Coverage %	60	50	55	8 4 10 8 12 8 8							
<i>Abies spectabilis</i>											
6											
2nd Layer											
Height m	2~7	7	7								
No. of Species	3	2	3								
Coverage %	60	+	30								
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>											
5											
<i>R. barbatum</i>											
1											
<i>Viburnum erubescens</i>											
1											
Shrub Layer											
Height m	0.5~1	0.5~2	1.5								
No. of Species	9	5	7								
Coverage %	30	60	45								
<i>Berberis aristata</i>											
+											
<i>Clematis montana</i>											
+											
<i>Cotoneaster acuminatus</i>											
+											
<i>Daphne bholua</i>											
+											
<i>Euonymus echinatus</i>											
+											
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>											
2											
<i>Rosa sericea</i>											
+											
<i>Spiraea bella</i>											
+											
<i>Viburnum erubescens</i>											
+											
				<i>Ainsliaea latifolia</i> + + + III							
				<i>A. aptera</i> 2 + + 0.3 III							
				<i>Anaphalis margaritacea</i> + I							
				<i>Anemone obtusiloba</i> + I							
				<i>Clematis montana</i> + I							
				<i>Cotoneaster acuminatus</i> + I							
				<i>Daphne bholua</i> + II							
				<i>Fragaria nubicola</i> + II							
				<i>Gaultheria nummularioides</i> 4 + + 1 + 1.0 IV							
				<i>Geranium nepalense</i> + I							
				<i>Myriactis nepalensis</i> + I							
				<i>Umbelliferae 1723</i> + II							
				<i>Ribes 1725</i> + I							
				<i>Rubus fockeana</i> 2 3 3 + 1 1.5 IV							
				<i>Sanicula elata</i> + I							
				<i>Spiraea bella</i> + II							
				<i>Strobilanthes 1726</i> + II							
				<i>Viburnum erubescens</i> + I							
				<i>Carex longipes</i> 4 9 6 3 3 4 4.8 V							
				<i>Ophiopogon</i> 2 0.3 I							
				<i>Polygonatum</i> + I							
				<i>Dryopteris wallichiana</i> + I							
				<i>Thuidium cymbifolium</i> 9 7 9 4 6 5.8 IV							

Table 45. Floristic Composition of *Tsuga* Forest (Plot No. 32).

Canopy Plot & Quadrat No. (10m x 10m)								Herb Layer Quadrat No. (1m x 1m)																							
	32-67	68	69	70	71	72	M	C	32-67-1	32-67-2	3	32-68-1	32-68-2	3	32-69-1	32-69-2	3	32-70-1	32-70-2	3	32-71-1	32-71-2	3	32-72-1	32-72-2	3	M	C			
1st Layer									Height cm	40	30	30	25	25	30	40	40	20	30	15	20	30	40	30	25	15	15	27			
Height m	1	2	1	2	1	1	1		No. of Species	17	11	14	14	10	8	10	7	9	10	8	12	12	13	8	5	6	11	10			
No. of Species	1	2	1	2	1	1	1		Coverage %	95	70	80	80	90	75	80	70	70	10	90	70	85	80	80	80	90	75	80			
Coverage %	80	90	90	50	70	100	80		<i>Achyranthes bidentata</i>	2	2	+	1	3	1			5	5						8			1.5	III		
<i>Abies spectabilis</i>		2		1	7		1.7	III	<i>Ainsliaea latifolia</i>	+	+	1	+	+	1	+	+								+		1	0.2	III		
<i>Tsuga dumosa</i>	8	7	9	5		10	6.5	IV	<i>Ainsliaea aptera</i>																						
2nd Layer									<i>Berberis aristata</i>							1	+				+	1	1	1				+	0.3	III	
Height m	15	15	15	15	15	15	15		<i>Carpesium 2361</i>	+																					
No. of Species	1	2	1	1	1	2	1		<i>Circaea alpina</i>	+	1	+	+	+			+			+	1	1	1	+	+			+	+	0.2	III
Coverage %	10	20	15	50	40	50	31		<i>Elatostema obtusa</i>	+	+	+	+	1					1	1	1	+	+			+	+	+	0.2	III	
<i>Ilex diphyrena</i>	1	2	2	5	4	5	3.2	V	<i>Galium hirtiflorum</i>																	+					
<i>Osmanthus fragrans</i>		1				1	0.3	II	<i>Hedera nepalensis</i>				1	+								+							0.1	I	
3rd Layer									<i>Ilex diphyrena</i>														+			6			0.1	I	
Height m	4~3		3~2	3~2	3~2	3~2	3		<i>Impatiens</i>											1									0.1	I	
No. of Species	2	0	2	2	2	3	2		<i>Peracarpa carnosa</i>	+		+		+							+						+				II
Coverage %	10	0	+	+	+	1	1.8		<i>Pieris formosa</i>					1					+										0.1	I	
<i>Berberis aristata</i>	+							I	<i>Pilea 2559</i>	+	+		+	1																	
<i>Arundinaria hookeri</i>			+	+	+	+		III	<i>Polygonum microcephalum</i>													+	+		+	+	+			II	
<i>Ilex diphyrena</i>			+	+	+	1	0.2	III	<i>Primula petiolaris</i>	+										1				+	+				0.1	I	
<i>Pieris formosa</i>	1		+	+			0.2	II	<i>Rubia cordifolia</i>	+																					
<i>Rhododendron arboreum</i>						+		I	<i>Sanicula elata</i>				+																		
var. <i>campbelliae</i>									<i>Strobilanthes atropurpureus</i>	6	1	2	2		5	1	5	2			6	4	1	5			9	6	3.1	IV	
Shrub Layer									<i>Swertia</i>	+																					
Height m	1~	1~	1~	1~	1~	1~	1~		<i>Tripteropermium volubile</i>	+			1	+															0.1	I	
No. of Species	2	1	1	1	2	1	1		<i>Arisaema utile</i>																						
Coverage %	10	40	5	10	+		10		<i>Arundinaria hookeriana</i>																						I
<i>Arundinaria hookeriana</i>								I	<i>Capillipedium compositum</i>		+	+											+	+						I	
<i>Berberis aristata</i>	+							I	<i>Carex 2355</i>	1	+	1	2	3		2				2	2	2	2	2		+		1.1	IV		
<i>Pieris formosa</i>	1	4	1	1	+		1.2	III	<i>Ophiopogon clarkei</i>	+			+	+							+		+							I	
<i>Polystichum wallichii</i>								I	<i>Athyrium 2362</i>	1	+	1				4	5	+			+	1	2	+	+			0.8	III		
									<i>Polypodium</i>			+	+		+													+			I
									<i>Polystichum wallichii</i>	1					+	2	1				2		1	1					0.4	II	
									<i>Plagiochila</i>		4	3	2	2	+	+					+					2			0.8	III	
									<i>Rhodobryum?</i>		+	+			+	+					+	+	+					1			II
									<i>Thuidium</i>	3		4	5	1	+	+	1				2		+	6	4	3	+	+		1.6	IV

Table 51. Floristic Composition of *Rhododendron arboreum* var. *campbelliae* Forest (Plot No. 116)

Canopy Plot & Quadrat No. (10m x 10m)	116-216
1st Layer	
Height m	8
No. of Species	2
Coverage %	95
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	10
<i>R. barbatum</i>	+
Shrub Layer	
Height m	1~1.5
No. of Species	2
Coverage %	10
<i>Daphne bholua</i>	1
<i>Viburnum erubescens</i>	+

Herb Layer Quadrat No. (1m x 1m)	116-216-			M	C
	1	2	3		
Height cm	0~5	0~10		8	
No. of Species	7	6	4	6	
Coverage %	80	50	10	47	
<i>Daphne bholua</i>		+			II
<i>Elatostema obtusa</i>		+			II
<i>Peracarpa carnosa</i>			+		II
<i>Primula denticulata</i>	+				II
<i>Ranunculus</i>	+		+		III
<i>Rubus fockeana</i>		1		0.3	II
<i>Sanicula elata</i>	+				II
<i>Carex</i>	1		+	0.3	III
<i>Actinothuidium hookeri</i>	6	+		2.0	III
<i>Plagiochila grollii</i>	1	1	+	0.7	V
<i>Thidium cymbifolium</i>	3	2		1.7	III

Table 52. Floristic Composition of *Rhododendron campanulatum* Forest (Plot No. 29).

Canopy Plot & Quadrat No. (10m x 10m)	29-64
Height m	4
No. of Species	6
Coverage %	100
<i>Prunus rufa</i>	+
<i>Rhododendron campanulatum</i>	10
<i>Rosa sericea</i>	+
<i>Sorbus foliolosa</i>	+
<i>Arundinaria hookeri</i>	+
<i>Juniperus squarrosa</i>	1

Herb Layer Quadrat No. (1m x 1m)	29-64-			M	C
	1	2	3		
Height cm	15	10	5	10	
No. of Species	13	14	9	12	
Coverage %	10	30	+	13	
<i>Bistorta vivipara</i>	+	+	+		V
<i>Cyananthus 2337</i>	+	+	+		III
<i>Impatiens</i>	1	+	+	0.3	V
<i>Koenigia nepalensis</i>	+				II
<i>Pilea approximata</i>	+	1	+	0.3	V
<i>Pratia montana</i>		+			II
<i>Rhododendron anthopogon</i>	+				II
<i>Rh. campanulatum</i>		+			II
<i>Rh. lepidotum</i>	+		+		III
<i>Rubus fockeana</i>		1		0.3	II
<i>Sorbus foliolosa</i>		+			II
<i>Veronica umbelliformis</i>	+				II
<i>Viola biflora</i>	+				II
<i>Luzura spicata</i>		+			II
<i>Smilacina purpurea</i>		+			II
Gramineae 2335	+				II
<i>Polystichum</i>	+				II
Fern 2336		+	+		II
<i>Actinothuidium hookeri</i>	1	+	+	0.3	V
<i>Symblepharis reinwardtii</i>	+	+	+		V
<i>Plagiochila</i>	+	2	+	0.7	V

Table 53. Floristic Composition of *Rhododendron campanulatum* Forest (Plot No. 53).

Canopy Plot & Quadrat No. (10m x 10m)	53-114
Height m	5~3
No. of Species	5
Coverage %	95
<i>Abies spectabilis</i>	+
<i>Berberis aristata</i>	+
<i>Lyonia ovalifolia</i>	+
<i>Rhododendron barbatum</i>	1
<i>Rh. campanulatum</i>	9

Herb Layer Quadrat No. (1m x 1m)	53-114-			M	C
	1	2	3		
Height cm	20			20	
No. of Species	11	10	8	10	
Coverage %	90	90	50	77	
<i>Ainsliaea pteropoda</i>	2	1	+	1.0	V
<i>Bistorta affine</i>			+		II
<i>Elatostema obtusa</i>	+	+			III
<i>Pilea subalpina</i>	+	+	+		V
<i>Strobilanthes atropurpureus</i>	2	2	1	1.7	V
<i>Triplostegia glandulifera</i>		+			II
<i>Viburnum erubescens</i>	+				II
<i>Carex cruciata</i>	7	6	3	5.3	V
<i>Dryopteris sinofibrillosa</i>	+	+	+		V
Fern A2936	+				II
<i>Polypodium</i>			+		II
<i>Actinothuidium</i>	1	3	2	2.0	V
<i>Thuidium</i>	+	+			III
Moss	+				II
Moss		+			II

Table 54. Floristic Composition of *Rhododendron campanulatum* Forest (Plot No. 58).

Canopy		Herb Layer					
Plot & Quadrat No. (10m x 10m)	58-129	Quadrat No. (1m x 1m)		58-129-	3	M	C
Height m	1.5 <th>1</th> <th>2</th> <th>1</th> <th>2</th> <th>30</th> <th>30</th>	1	2	1	2	30	30
No. of Species	1 <th>No. of Species</th> <td>15</td> <th>17</th> <td>22</td> <th>18</th> <td></td>	No. of Species	15	17	22	18	
Coverage %	100 <th>Coverage %</th> <td>50</td> <th>80</th> <td>90</td> <th>73</th>	Coverage %	50	80	90	73	
<i>Rhododendron campanulatum</i>	10	<i>Polygonum molle</i>	3	1	+	1.3	V
		<i>Acronema tenerum</i>	1	+		0.3	III
		<i>Anaphalis adnata</i>	+		+		III
		<i>Anaphalis triplinervis</i>	+	+	+		V
		<i>Berberis</i>			+		II
		<i>Bistorta affine</i>	+	+			III
		<i>Cremanthodium</i>	+		+		III
		<i>Euphorbia himalayensis</i>		+	+		III
		<i>Fragaria nubicola</i>	+				II
		<i>Geranium polyanthes</i>	+	+	+		V
		<i>Lonicera obovata</i>			+		II
		<i>Oxygraphis polypetala</i>	2	1	2	1.7	V
		<i>Pilea subalpina</i>	+		+		III
		<i>Potentilla</i>	+	+	+		V
		<i>Primula denticulata</i>		+			II
		<i>Salix</i>			+		II
		<i>Sorbus foliolosa</i>			+		II
		<i>Taraxacum</i>			+		III
		<i>Triplostegia glandulifera</i>		1		0.3	II
		<i>Gaultheria trichophylla</i>		+			II
		<i>Aleris pauciflora</i>			+		III
		<i>Carex</i>	+				III
		Gramineae	+		2	0.7	I
		<i>Polygonatum punctatum</i>			+		I
		<i>Actinothuidium</i>	1	1	1	1.0	V
		<i>Cladonia</i>		+	+		III
		<i>Plagiochila</i>	2	4	5	3.7	V
		<i>Thuidium</i>			+		II
		Moss		2	1	1.0	III

Table 56. Floristic Composition of *Betula* Forest (Plot No. 59).

Canopy		Herb Layer					
Plot & Quadrat No. (10m x 10m)	59-130	Quadrat No. (1m x 1m)		59-130-	3	M	C
1st Layer		1	2	1	2	20	23
Height m	9	No. of Species	15	12	6	11 <td></td>	
No. of Species	3	Coverage %	80	90	70	80 <td></td>	
Coverage %	80						
<i>Betula utilis</i>	8	<i>Bistorta affine</i>	1	2	3	2.0	V
<i>Lonicera parvifolia</i>	+	<i>Cremanthodium</i>		1		0.3	II
<i>Rhododendron campanulatum</i>	1	<i>Fragaria nubicola</i>		+			II
		<i>Geranium polyanthes</i>	+	+			III
		<i>Impatiens falciifer</i>	+	1	1	0.7	V
		<i>Parnassia</i>	+				II
		<i>Primula</i>		+			III
		<i>Nardostachys jatamansi</i>	1			0.3	II
		<i>Ainsliaea pteropoda</i>	+	3	2	1.7	V
		<i>Triplostegia glandulifera</i>	1			0.3	II
		<i>Viola biflora</i>	+				II
		<i>Carex</i>	+	+			III
		<i>Juncus</i>	+				II
		Gramineae	+	1		0.3	III
		Fern		+			II
		<i>Actinothuidium</i>	1	3	2	1.7	V
		<i>Cladonia</i>		+			II
		<i>Plagiochila</i>	3		3	2.0	III
		<i>Thuidium</i>	2	2	1	1.7	V

Table 57. Basal Areas and Floristic Composition. (Arranged by altitudinal order of plots.)

	Girth (cm)	ΣG^2	%
Plot No. 74, 20m x 20m x 1, alt. 100m			
<i>Carreya arborea</i>	14	196	0.1
<i>Shorea robusta</i>	65, 72, 150, 105, 67, 41, 67, 171, 112, 170	124278	63.1
<i>Adina cordifolia</i>	140, 130, 160	62100	31.5
Leguminosae	72	5184	2.6
<i>Lagerstroemia parviflora</i>	19	361	0.2
<i>Ougeinia dalbergioides</i>	21, (15, 14, 12)	1006	0.5
4952	14	196	0.1
<i>Ziziphus rugosa</i>	25	625	0.3
4954	52	2704	1.4
<i>Dillenia pentagyna</i>	19	361	0.2
Total & Basal Area %		197011	0.3921
Plot No. 75, 20m x 20m x 1, alt. 100m			
<i>Holarrhena antidysenterica</i>	46	2116	1.0
<i>Terminalia chebura</i>	67	4489	2.2
<i>Shorea robusta</i>	163, 71, 62, 61, 122, 70, 146, 160, 58, 45, 39	112785	55.4
<i>Terminalia tomentosa</i>	151	22801	11.2
<i>Dillenia pentagyna</i>	27, 163	27298	13.4
4955	116	13456	6.6
4950	20	400	0.2
<i>Terminalia berelica</i>	45	2025	1.0
4961	36	1296	0.6
4954	(91, 43)	10130	5.0
<i>Lagerstroemia parviflora</i>	83	6889	3.4
Total & Basal Area %		203685	0.4054
Plot No. 76, 20m x 20m x 1, alt. 100			
<i>Terminalia tomentosa</i>	218	47524	40.0
<i>Lagerstroemia parviflora</i>	50, 30	3400	2.9
<i>Carreya arborea</i>	151, 11	22922	19.2
<i>Brideria retusa</i>	100	10000	8.4
<i>Holoptelea integrifolia</i>	35, 101	11426	9.6
<i>Bauhinia variegata</i>	60, 55	6625	5.6
<i>Mallotus philippinensis</i>	33	1089	0.9
4963	90	8100	6.8
<i>Ziziphus rugosa</i>	22, 33	1573	1.3
<i>Holarrhena antidysenterica</i>	26	676	0.6
4964	50, 26	3176	2.7
<i>Terminalia chebura</i>	51	2601	2.2
Total & Basal Area %		119112	0.2371
Plot No. 80, 20m x 20m x 1, alt. 170m			
<i>Shorea robusta</i>	27, 47, 110, 72, 34, 58, 133, 34, 35, 46, 30, 31, 67, 30, 35, 60, 60, 21, 49, 24, 131, 13	99551	54.3
<i>Adina cordifolia</i>	130, 97, 85	33534	18.3
<i>Eugenia operculata</i>	135	18225	9.9
<i>Elaeocarpus serrata?</i>	94	8836	4.8
<i>Lagerstroemia parviflora</i>	145	21025	11.5
<i>Caesalpinia sepiaria</i>	48	2304	1.3
Total & Basal Area %		183475	0.3652

	Girth (cm)	ΣG^2	%
Plot No. 81, 20m x 20m x 1, alt. 180m			
<i>Lagerstroemia parviflora</i>	90	8100	3.1
<i>Holarrhena antidysenterica</i>	21	441	0.2
<i>Shorea robusta</i>	136, 36, 51, 71, 67, 115, 68, 50, 163, 40, (171, 67), 172, 122, 77, 40, 65, 60, 70, 72, 162, 65, 45, 163, 46, 33, 75	251970	96.7
Total & Basal Area %		260511	0.5185
Plot No. 79, 10m x 10m x 1, alt. 210m			
<i>Acacia eburnea</i>	96, 78, 65	19525	75.1
<i>Trachelospermum lucidum</i>	19, 11, 12, (12, 17), (16, 17)	1604	6.2
<i>Clerodendrum</i>	52	2704	10.4
<i>Colebrookia oppositifolia</i>	22, 17	773	3.0
<i>Caesalpinia</i>	(22, 10)	584	2.2
<i>Erythrina</i>	14	196	0.8
<i>Adina cordifolia</i>	25	625	2.4
Total & Basal Area %		26011	0.2071
Plot No. 71, 10m x 10m x 2, alt. 400m			
<i>Shorea robusta</i>	84, 142, 124, 81, 84, 110, 131	85474	51.6
<i>Semecarpus anacardium</i>	46	2116	1.3
<i>Lagerstroemia parviflora</i>	71	5041	3.0
<i>Holoptelea integrifolia</i>	31	961	0.6
<i>Buchanania latifolia</i>	37, 30, 26, 50, 30, 10	6445	3.9
<i>Terminalia chebura</i>	46, 71	7157	4.3
4928	16, 26	932	0.6
<i>Terminalia tomentosa</i>	239	57121	34.5
<i>Wendlandia exserta</i>	11	121	0.1
<i>Ougeinia dalbergioides</i>	16	256	0.2
Total & Basal Area %		165624	0.6593
Plot No. 72, 10m x 10m x 1, alt. 400			
<i>Shorea robusta</i>	52, 19, 123	17674	65.9
<i>Kydia lobata</i>	43	1849	6.9
<i>Wendlandia exserta</i>	58	3364	12.5
4941	26	676	2.5
<i>Casearia glomerata</i>	(30, 16), 18	1480	5.5
<i>Eugenia jambolana</i>	40	1600	6.0
<i>Machilus</i>	14	196	0.7
Total & Basal Area %		26839	0.2137
Plot No. 73, 10m x 10m x 1, alt. 420m			
<i>Shorea robusta</i>	78, 60, 110	21784	35.8
<i>Semecarpus anacardium</i>	35, 11	1346	2.2
<i>Bauhinia variegata</i>	62, 30, 46	6860	11.3
<i>Buchanania latifolia</i>	35, 81	7786	12.8
<i>Terminalia tomentosa</i>	91	8281	13.6
<i>Lagerstroemia parviflora</i>	77, 72	11113	18.3
<i>Nyctanthus arbor-tristis</i>	(11, 40, 40), 20	3721	6.1
Total & Basal Area %		60891	0.4848

	Girth (cm)	ΣG^2	%
Plot 78, 10m x 10m x 2, alt. 820m			
<i>Shorea robusta</i>	124, 141, 77, 49, 29, 52, 50	57192	78.0
<i>Terminalia tomentosa</i>	30, 25, 25, 41, 27, 45	6585	9.0
<i>Glochidion velutina</i>	40, 30, 25, 10	3225	4.4
<i>Lagerstroemia parviflora</i>	16	256	0.3
<i>Semecarpus anacardium</i>	19	361	0.5
4990	50, 36	3796	5.2
<i>Grewia vestita</i>	23	529	0.7
<i>Embrica officinalis</i>	36	1296	1.8
<i>Ehretia</i>	11	121	0.2
Total & Basal Area %		73361	0.2920
Plot No. 77, 10m x 10m x 2, alt. 1050m			
<i>Schima wallichii</i>	126, 167	43765	62.4
<i>Castanopsis tribuloides</i>	(49, 26), 11, (56, 114), 15	19555	27.9
<i>Machilus odoratissima</i>	80	6400	9.2
<i>Eugenia operculata</i>	20	400	0.6
Total & Basal Area %		70120	0.2791
Plot No. 10, 10m x 10m x 1, alt. 1480m			
<i>Pinus roxburghii</i>	88, 84, 117	28489	100.0
Total & Basal Area %		28489	0.2268
Plot No. 9, 10m x 10m x 2, alt. 1520m			
<i>Myrica esculenta</i>	64	4096	1.8
<i>Pinus roxburghii</i>	185, (110, 122), 200, 157, 179, 141	177780	80.0
<i>Schima wallichii</i>	52, 42, 69, 42, 43, 69, 32, 73, 77, 87, 55	40479	18.2
Total & Basal Area %		222355	0.8852
Plot No. 48, 10m x 10m x 1, alt. 1730m			
<i>Pinus griffithii</i>	160, 125, 85, 100	58450	100.0
Total & Basal Area %		58450	0.4654
Plot No. 67, 10m x 10m x 2, alt. 1750m			
<i>Carpinus viminea</i>	64, 75, 20, 65, 55, 60, 106, 79	38448	52.1
<i>Ilex corymbosa</i>	40, 28	2384	3.22
<i>Machilus duthiei</i>	45, 14	2221	3.0
<i>Lindera pulcherrima</i>	18, (34, 38), 18, 28, 28	4816	6.5
<i>Symplocos theaefolia</i>	35, 35, (16, 21)	3147	4.3
<i>Euonymus tingens</i>	21, 35, 15	1891	2.6
<i>Turpinia cochinchinensis</i>	(38, 54, 27)	5089	6.9
<i>Litsea oblonga</i>	56	3136	4.2
<i>Acer oblongum</i>	26	676	0.9
<i>Quercus lineata</i>	(56, 93)	11785	16.0
<i>Eurya acuminata</i>	15	225	0.3
Total & Basal Area %		73818	0.2939

	Girth (cm)	ΣG^2	%
Plot No. 68, 10m x 10m x 1, alt. 1750m			
<i>Quercus glauca</i>	14	196	0.6
<i>Quercus lineata</i>	46, 50, 51, (37, 40), 28, (38, 45, 23)	15731	45.3
<i>Castanopsis tribuloides</i>	40, 46	3716	10.7
<i>Carpinus viminea</i>	17	289	0.8
<i>Schima wallichii</i>	(70, 14)	5096	14.7
<i>Fraxinus floribunda</i>	50	2500	7.2
<i>Turpinia cochinchinensis</i>	18, 16, 21	1021	2.9
<i>Eurya acuminata</i>	56	3136	9.0
<i>Myrica esculenta</i>	55	3025	8.7
Total & Basal Area %		34710	0.2764
Plot No. 49, 10m x 10m x 2, alt. 1760m			
<i>Meytenus rufa</i>	7, 10	149	0.1
<i>Xylosma controversa</i>	20, 20, 20, 18, 18, 18	1848	1.8
<i>Albizia julibrissin</i>	35, 60, 70, 40	11325	11.0
<i>Acer oblongum</i>	30, 9, 10, 32, 9, 11, 24, 14, 23, 12	3752	3.6
<i>Carpinus viminea</i>	28, 33, 32, 30, 22, 30, 25, 11, 58, 28, 21, 62, 30, 23, 29, 31, (31, 18), 12	19020	18.5
<i>Celtis tetrandra</i>	35, 50, 63, 10	7794	7.6
Climber (not identified)	15, 7, 9	355	0.3
<i>Quercus glauca</i>	9, 17, 15, 9, 13, 15, 36, 9, 13, 9, 13, 9, 20, 14, 45, 15, 13, 14, 29, 35, 16, 19, 12, 9, 9	6200	6.0
<i>Pyrus pashia</i>	13	169	0.2
<i>Jasminum multiflorum</i>	9	81	0.1
<i>Symplocos pyrifolia</i>	23, (24, 45, 35, 37), (14, 20, 23)	6849	6.7
<i>Ligustrum nepalense</i>	24, 10, 18	1000	1.0
<i>Ziziphus incurva</i>	29, 52, 61, 25	7891	7.7
<i>Schima wallichii</i>	65, 48	6529	6.3
<i>Machilus duthiei</i>	160	25600	24.9
<i>Myrica esculenta</i>	(31, 11), 20	1482	1.4
Total & Basal Area %		102991	0.4100
Plot No. 4, 10m x 10m x 6, alt. 1790m			
<i>Acer oblongum</i>	111	12321	5.8
<i>Cornus oblonga</i>	113	12769	6.1
<i>Ligustrum nepalense</i>	102, 72, 77, 50, 57	27266	12.9
<i>Lyonia ovalifolia</i>	45	2025	1.0
<i>Machilus duthiei</i>	90	8100	3.8
<i>Myrica esculenta</i>	103	10609	5.0
<i>Myrsine semiserrata</i>	40, (67, 25, 34), 27, 47, 36, 27	12833	6.1
<i>Phoebe lanceolata</i>	61, 120, 67, 22, 35	24319	11.5
<i>Pyrus pashia</i>	55, 53, 76, 59	15091	7.2
<i>Quercus spicata</i>	129, 110	28741	13.6
<i>Schima wallichii</i>	215, 103	56834	26.9
Total & Basal Area %		210908	0.2799

	Girth (cm)	ΣG^2	%
Plot No. 66, 10m x 10m x 2, alt. 1970m			
<i>Lyonia ovalifolia</i>	60, (80, 48, 77, 47, 37, 72), 23, (48, 14), (40, 20, 26), 68, 58	40688	39.0
<i>Ficus nemoralis</i>	11	121	0.1
<i>Quercus lanuginosa</i>	77, 69, 75, (84, 112, 75)	41540	39.8
<i>Quercus lineata</i>	13, 10	269	0.3
<i>Castanopsis tribuloides</i>	32, 39	2545	2.4
<i>Rhododendron arboreum</i>	60, 42, 65	9589	9.2
<i>Quercus glauca</i>	77	5929	5.7
<i>Machilus duthiei</i>	37	1369	1.3
<i>Schima wallichii</i>	34, 27	1885	1.8
Total & Basal Area %		104335	0.41534
Plot No. 8, 10m x 10m x 5, alt. 2000m			
<i>Acer oblongum</i>	106, 161	37157	12.6
<i>Albizia mollis</i>	228	51984	17.6
<i>Castanopsis tribuloides</i>	118	13924	4.7
<i>Machilus duthiei</i>	170, 125	44525	15.1
<i>Michelia kisopa</i>	183, 157, 131	75299	25.5
<i>Phoebe lanceolata</i>	100, 96, 155, 170	72141	24.5
Total & Basal Area %		295030	0.4698
Plot No. 65, 10m x 10m x 1, alt. 2020m			
<i>Ligustrum nepalense</i>	17	289	0.1
<i>Quercus lineata</i>	317, 237, (90, 30), 170	194558	96.0
<i>Lindera pulcherrima</i>	20, 18, 39, 18, (28, 15), (31, 26, 22, 17, 21)	6429	3.2
<i>Viburnum coriaceum</i>	12	144	0.1
<i>Myrsine semiserrata</i>	15	225	0.1
<i>Machilus duthiei</i>	27	729	0.4
<i>Eurya acuminata</i>	17	289	0.1
Total & Basal Area %		202663	1.6136
Plot No. 64, 10m x 10m x 6, alt. 2030m			
<i>Quercus glauca</i>	(140, 80, 140), (122, 35, 146), 14, 12, 12, (90, 40), 132, 112, 65	127402	24.8
<i>Quercus lineata</i>	(195, 35, 98, 21, 105), 25, 25, 100, (130, 145), 96, 260, (183, 138, 55, 15), 145	263119	51.3
<i>Eurya acuminata</i>	27, 12, 18, 22, 15, 89, 96, (60, 32), 31	24628	4.8
<i>Rhododendron arboreum</i>	130, 126, 28, 15, 15	29062	5.7
<i>Lindera pulcherrima</i>	42, 27, 32, 20, 15, 27	4871	0.9
<i>Meliosma dilleniiifolia</i>	(18, 15), (35, 29), 15, 22, 83	10213	2.0
<i>Symplocos ramosissima</i>	12, (16, 31), 19	1722	0.3
<i>Carpinus viminea</i>	36, 22, 197	40589	7.9
<i>Skimmia</i>	22	484	0.1
<i>Prunus cerasoides</i>	20	400	0.1
<i>Euonymus tingens</i>	38, 35, 71	7710	1.5
<i>Myrsine semiserrata</i>	25	625	0.1
<i>Brassaiopsis</i>	13	169	0.0
<i>Machilus duthiei</i>	19	361	0.1
Total & Basal Area %		513155	0.6809

	Girth (cm)	ΣG^2	%
Plot No. 70, 10m x 10m x 2, alt. 2030m			
<i>Rhododendron arboreum</i>	(50, 44), 69, 60, 47, 101, 76, 44, 70, 84, 70, 80	56175	50.4
<i>Quercus lanuginosa</i>	70, 60, 61, 61, 70, 85, 84, 121	49764	44.7
<i>Wendlandia puberula</i>	14	196	0.2
<i>Lyonia ovalifolia</i>	70	4900	4.4
<i>Myrica esculenta</i>	20	400	0.4
Total & Basal Area %		111435	0.4436
Plot No. 5, 10m x 10m x 4, alt. 2050m			
<i>Lyonia ovalifolia</i>	47, 72	7393	5.3
<i>Myrica esculenta</i>	49	2401	1.7
<i>Quercus lanuginosa</i>	75, 85, 68, 53, 64, 70, 74, 112, 55, 83, 110, 90, 63, 87, 67, 67, 96, 64, 97, 75, 67	130986	93.0
Total & Basal Area %		140780	0.2802
Plot No. 7, 10m x 10m x 1, alt. 2050m			
<i>Quercus lanuginosa</i>	69, 65, 62	12830	100.0
Total & Basal Area %		12830	0.1021
Plot No. 51, 10m x 10m x 1, alt. 2170m			
<i>Quercus lanuginosa</i>	90, 100, 150, 46, 90	50816	63.4
<i>Lyonia ovalifolia</i>	(71, 38), 68	11109	13.9
<i>Rhododendron arboreum</i>	(59, 55), 108	18170	22.7
Total & Basal Area %		80095	0.6377
Plot No. 50, 10m x 10m x 1, alt. 2190m			
<i>Quercus semecarpifolia</i>	(110, 130), 80	35400	98.8
<i>Viburnum stellatum</i>	21	441	1.2
Total & Basal Area %		35841	0.2854
Plot No. 52, 10m x 10m x 1, alt. 2190m			
<i>Quercus lineata</i>	180, (90, 185)	74725	94.5
<i>Rhododendron arboreum</i>	45, 48	4329	5.5
Total & Basal Area %		79054	0.6294
Plot No. 69, 10m x 10m x 1, alt. 2270m			
<i>Lyonia ovalifolia</i>	49	2401	2.4
<i>Myrsine semiserrata</i>	23, 15	754	0.7
<i>Rhododendron arboreum</i>	150, 220, 134	88856	87.6
<i>Quercus lineata</i>	21	441	0.4
<i>Q. semecarpifolia</i>	29, 20, 32, 30, 45, 36, 50	8986	8.9
Total & Basal Area %		101438	0.8076

	Girth (cm)	ΣG^2	%
Plot No. 33, 10m x 10m x 6, alt. 2720m			
<i>Quercus semecarpifolia</i>	98, 75, 50, 72, 41, 65, 99, 80, 37, 58, 86, 260, 180, 284, 147, 74, 45, 73, 45, 138, 85, 69, 122, 65, 73, 54, (95, 60), 72, 79, 91, 134, 130, 70, 37, 69, 210, 147, 86, 60	485575	92.0
<i>Ilex dipyrena</i>	48, 34, 53, 56, (34, 26), 29, 27, (23, 33, 27), 50, 60, 47, (37, 29), (22, 33, 17), 52	30939	5.9
<i>Viburnum erubescens</i>	35	1225	0.2
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	(55, 49)	5426	1.0
<i>Pieris formosa</i>	(42, 31), 23	3254	0.6
<i>Berberis aristata</i>	(27, 20, 21, 20)	1970	0.4
Total & Basal Area %		527689	0.7002
Plot No. 32, 10m x 10m x 6, alt. 2840m			
<i>Osmanthus fragrans</i>	38, 39, 39	4486	0.5
<i>Tsuga dumosa</i>	435, 416, 330	471181	50.9
<i>Abies spectabilis</i>	215, 192, 360, 162, 350	361433	39.0
<i>Ilex dipyrena</i>	(32, 51), (46, 37), 74, 58, 34, 57, 62, 170, 81, 141, 44, 71	86518	9.3
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	47	2209	0.2
Total & Basal Area %		925827	1.2285
Plot No. 44, 10m x 10m x 6, alt. 3000m			
<i>Quercus semecarpifolia</i>	87, 87, 153, 170, (121, 85), 105, 137, 130, 96, (120, 56), (127, 95), 79, 91, 76, 74, (130, 96, 76), 108, 105, (123, 58), 71, 199, (65, 114), 239, 100, 124, 287, 60, 55, (56, 81, 81), 70, (64, 44)	546305	92.5
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	(41, 57), 35, 50, (41, 41, 49, 42), 57, 72, (30, 74, 41), 21, (44, 11)	35170	6.0
<i>Sorbus hedlundi</i>	(65, 71)	9266	1.6
Total & Basal Area %		590741	0.7839
Plot No. 53, 10m x 10m x 1, alt. 3060m			
<i>Lyonia ovalifolia</i>	(130, 90, 50)	27500	29.7
<i>Rhododendron barbatum</i>	(30, 30), (20, 50, 30, 15), (30, 20, 15, 20), 15, 45, (50, 50), (52, 25), (35, 30), 35, 30, 5, 5, 32	23653	25.6
<i>Rhododendron campanulatum</i>	(60, 35), 30, 50, (50, 13), 35, 16, (30, 20, 20, 16, 15), (25, 25), (19, 15, 14), (16, 20, 35, 41), 19, 35, 19, 18, 78, (15, 15), 15, 60, 5, 65, 50, 40	41112	44.5
<i>Abies spectabilis</i>	15	225	0.2
Total & Basal Area %		92490	0.7365

	Girth (cm)	ΣG^2	%
Plot No. 34, 10m x 10m x 6, alt. 2330m			
<i>Lindera bifaria</i>	(194, 114), (115, 116, 90, 110), (106, 147), 108, 120, 92, (100, 142, 177), 140, (60, 111, 109, 202)	314974	55.3
<i>Acer campbellii</i>	(113, 126), 365	161873	28.4
<i>Machilus duthiei</i>	(58, 92), 19, 139	31510	5.5
<i>Juglans regia</i>	168, 165	55449	9.7
<i>Meliosma dilleniifolia</i>	56, 51	5737	1.0
Total & Basal Area %		569543	0.7558

Plot No. 63, 10m x 10m x 6, alt. 2430m			
<i>Quercus lamellosa</i>	(80, 70), 142, 130, (172, 85), 18, 70, 93, 139, 65	122592	36.4
<i>Quercus lineata</i>	163, 24, 75, 18, 64, 63	41159	12.2
<i>Eurya acuminata</i>	39, 78	7605	2.3
<i>Meliosma dilleniifolia</i>	54, 49, 61, 51	11639	3.5
<i>Lindera pulcherrima</i>	15, 55, 57	6499	1.9
<i>Euonymus tingens</i>	75, 104	16411	4.9
<i>Euonymus acuminatus</i>	(62, 50)	6344	1.9
<i>Machilus duthiei</i>	38, 68, 54, (105, 66, 120), 85, 26, 80	53066	15.8
<i>Rhododendron arboreum</i>	130, 26, 40	19176	5.7
<i>Ilex dipyrena</i>	27, 42	2493	0.7
<i>Machilus sericea</i>	30, 25, 36, 100	12821	3.8
<i>Berberis chitria</i>	(27, 15)	954	0.3
<i>Daphne bholua</i>	19	361	0.1
<i>Quercus semecarpifolia</i>	187	34969	10.4
<i>Trichilia connaroides</i>	28	784	0.2
Total & Basal Area %		336903	0.4471

Plot No. 62, 10m x 10m x 6, alt. 2480m			
<i>Quercus semecarpifolia</i>	365, 348, 449	455930	90.1
<i>Rhododendron arboreum</i>	101, 62, 41, 139	35047	6.9
<i>Symplocos theaefolia</i>	19, 30, 50, 71, 55	11827	2.3
<i>Lindera pulcherrima</i>	15	225	0.0
<i>Dodecadenia grandiflora</i>	37	1369	0.3
<i>Berberis chitria</i>	22	484	0.1
<i>Viburnum erubescens</i>	22	484	0.1
<i>Meliosma dilleniifolia</i>	24	576	0.1
Total & Basal Area %		505942	0.6714

Plot No. 61, 10m x 10m x 6, alt. 2540m			
<i>Quercus semecarpifolia</i>	265, 340, 17, 27, 80, 66, 285, 140, 78, (125, 130), 150, 354	484849	94.7
<i>Euonymus tingens</i>	92, 115, 75	27314	5.3
Total & Basal Area %		512163	0.6796

	Girth (cm)	ΣG^2	%
Plot No. 54, 10m x 10m x 6, alt. 3120m			
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	90, 55, 40, (48, 50, 28), 56, (75, 72), 50	34758	4.8
<i>Rhododendron barbatum</i>	(63, 55, 30), 51, 30, 14, 65, 30, (55, 50, 50), (54, 54, 53, 30), 46, 41, 45, 54, 31, 41, 62, 25, 54, (55, 26, 23, 57), (58, 96), (21, 30), (15, 18), 47, (40, 39, 35), (45, 25), (65, 64, 33, 48), 35, 25, (87, 60, 57), 52, 44, (15, 10), 48, (18, 20), 70, (46, 47)	129401	17.7
<i>Abies spectabilis</i>	292, 284, 380, 375, 495	565970	77.3
<i>Viburnum erubescens</i>	(30, 20, 10), 9, 11	1602	0.2
Total & Basal Area %		731731	0.9710
Plot No. 60, 10m x 10m x 3, alt. 3170m			
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	(79, 65), 118, 89, (131, 62, 147), 70, (101, 121, 105, 118), (139, 90, 72), 60, 30, 120, (87, 48), 90, 70, (240, 154, 145)	306335	69.1
<i>Abies spectabilis</i>	370	136900	30.9
Total & Basal Area %		443235	1.1763
Plot No. 55, 10m x 10m x 1, alt. 3180m			
<i>Juniperus recurva</i>	111, 111, 77, 208, (48, 35), 65	81589	100.0
Total & Basal Area %		81589	0.6496
Plot No. 31, 10m x 10m x 1, alt. 3200m			
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	(79, 40, 51, 34), (38, 40, 48), 37, 28, (60, 46), 66, 129, 14, 45	48033	92.4
<i>Kalopanax</i>	63	3969	7.6
Total & Basal Area %		52002	0.4140
Plot No. 30, 10m x 10m x 1, alt. 3210m			
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	(70, 65, 66), 35, (27, 38, 43), (58, 52, 86, 39, 37), 27, 22, (31, 41, 41, 24, 21, 20, 6), 42, 48, 41, 50, 44, 37, 75), 29, 25, 42, (29, 48), (42, 51)	70038	98.2
<i>Cotoneaster acuminatus</i>	(7, 6, 9)	166	0.2
<i>Lonicera acuminata</i>	33	1089	1.5
Total & Basal Area %		71293	0.5676
Plot No. 56, 10m x 10m x 3, alt. 3250m			
<i>Abies spectabilis</i>	400, 262	228644	58.1
<i>Juniperus recurva</i>	65, 235, 86	66846	17.0
<i>Rhododendron arboreum</i> var. <i>campbelliae</i>	(108, 81), (14, 18), 20, 140, 182, (145, 42, 49)	18225	4.6
<i>Viburnum erubescens</i>	15, 21	78834	20.0
		666	0.2
Total & Basal Area %		393215	1.0436

	Girth (cm)	ΣG^2	%
Plot No. 59, 10m x 10m x 1, alt. 3410m			
<i>Betula utilis</i>	82, 92, 75, 40, 113	35182	70.7
<i>Lonicera lanceifolia</i>	(28, 16, 30)	1940	3.9
<i>Rhododendron campanulatum</i>	70, 88	12644	25.4
Total & Basal Area %		49766	0.3962
Plot No. 37, 10m x 10m x 1, alt. 3740m			
<i>Rhododendron campanulatum</i>	24, (13, 14)	941	1.5
<i>Betula utilis</i>	91, 94, 113, 45, (60, 50), 151, 100	60812	93.9
<i>Lonicera purpurascens</i>	(10, 10, 12), (13, 22, 11, 10, 8), (10, 9, 12)	1607	2.5
<i>Sorbus foliolosa</i>	(30, 10), 15, (11, 5)	1371	2.1
Total & Basal Area %		64731	0.5079
Plot No. 35, 10m x 10m x 2, alt. 3750m			
<i>Betula utilis</i>	56, 146, 56, 16, 57, 65, 54, 93, 63, 88, (78, 43), 98, 67	80622	90.5
<i>Sorbus foliolosa</i>	33, 32, (40, 17), (39, 11), (19, 12), (44, 10), 17	8474	9.5
Total & Basal Area %		89096	0.3647
Plot No. 36, 10m x 10m x 1, alt. 3750m			
<i>Betula utilis</i>	133, 143, 175, 103	79372	91.8
<i>Rhododendron campanulatum</i>	(17, 11), 17, 12, (12, 11), (31, 31), (28, 33, 34)	6059	7.0
<i>Lonicera purpurascens</i>	12, (13, 14, 14), (11, 8, 8, 7)	1003	1.2
Total & Basal Area %		86434	0.6882

Table 58. Relative Basal Area in Every 500m Elevation.

Sector (m alt.)	Number of Surveyed Plot	Average Altitude of Surveyed Plots	Average Relative Basal Area (%)
0			
500	9	231	0.3564
1000	2	820	0.2920
1500	1	1265	0.2530
2000	7	1750	0.4323
2500	13	2172	0.6019
3000	3	2700	0.8694
3500	9	3178	0.7487
4000	3	3750	0.5203