SECTION V

DATA

In this study, necessary data was arranged for next year's survey that is expected to prepare an afforestation plan.

1. OBSERVED DATA OF METEOROLOGY

1-1 BAHIA NEGRA OBSERVATORY

(1961-1970, Altitude 96m)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature °C		29.0	28.6	27.8	26.4	24.0	21.9	22.0	24.7	26.6	28.0	29.0	29.2	26.4
Mean of maximum temperatures °C		34.0	33.7	33.1	31.8	29.4	27.4	27.9	31.1	32.8	33.7	34.3	34.7	32.0
Mean of minimum temperatures °C		23.6	23.7	22.3	20.6	18.1	16.3	15.3	17.4	19.8	21.5	22.5	23.4	20.4
Maximum temperature °C		39.5	39.8	39.0	38.0	35.5	35.2	36.9	39.4	41.3	41.9	43.6	41.6	43.6
Minimum temperature °C		18.2	15.6	14.0	9.5	2.9	4.3	3.9	1.3	7.5	12.5	15.8	15.0	1.3
Precipitation mm		167.5	118.0	76.0	78.0	51.8	36.7	15.5	22.4	41.7	120.7	97.7	125.1	951.1
Mean number of rainy days		10	9	7	5	4	4	2	3	3	6	6	8	67
Relative humidity %		68	69	69	69	68	68	62	53	53	58	58	63	63
Wind directions %	N	25	21	19	11	12	15	13	16	17	21	17	22	17
	NE	21	20	28	30	38	33	35	31	25	26	27	25	28
	E	6	5	5	8	4	2	4	4	4	3	6	6	5
	SE	6	6	5	11	8	6	7	10	9	10	10	8	8
	S	8	6	12	14	10	20	16	14	16	11	10	6	12
	SW	2	2	4	3	4	4	6	4	5	2	3	3	4
	W	3	5	3	1	1	2	1	2	3	2	2	2	2
	NW	8	8	6	2	1	2	2	2	3	5	5	8	4
	No wind	21	27	17	20	21	15	16	17	17	20	20	19	19

1-2 NUEVA ASUNCION OBSERVATORY

(1961-1970, Altitude 315m)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature °C		28.5	27.5	26.2	24.6	22.3	19.6	20.2	22.3	25.2	27.3	28.0	28.3	25.0
Mean of maximum temperatures °C		34.5	33.3	31.7	30.2	27.9	24.8	26.2	29.5	31.8	33.0	34.2	34.1	30.9
Mean of minimum temperatures °C		20.7	21.0	19.9	18.2	16.2	13.7	13.0	14.2	17.3	19.8	19.9	20.5	17.9
Maximum temperature °C		41.7	41.6	39.7	38.8	36.5	35.0	37.6	39.6	40.8	40.6	42.6	40.6	42.6
Minimum temperature °C		11.4	12.2	10.7	3.4	0.0	-1.0	-3.0	-4.2	4.2	9.6	11.0	10.5	-4.2
Precipitation mm		80.6	75.9	64.6	53.0	32.6	12.4	2.8	7.0	8.9	34.3	43.9	67.6	483.6
Mean number of rainy days		6	7	7	5	4	3	1	1	1	4	5	6	50
Relative humidity %		58	64	64	65	69	64	57	50	50	52	54	57	59
Wind directions %	N	35	40	32	25	19	29	32	31	28	27	26	38	30
	NE	6	5	9	14	21	7	10	5	8	9	15	8	10
	E	4	2	4	3	3	1	4	1	4	5	5	5	3
	SE	3	1	1	2	2	1	2	1	4	3	2	2	2
	S	20	12	18	22	18	21	13	21	17	19	17	15	18
	SW	4	10	6	10	8	12	15	9	12	9	10	6	9
	W	2	4	3	2	2	1	3	0	1	2	1	3	2
	NW	1	1	1	0	0	0	0	0	2	2	0	0	1
	No wind	23	25	25	22	27	28	20	31	23	23	24	22	24

1-3 MARISCAL ESTIGARRIBIA OBSERVATORY

(1961-1970, Altitude 181m)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature °C		29.7	28.7	27.3	25.1	22.3	19.6	19.8	22.7	25.2	27.6	28.9	29.3	25.5
Mean of maximum temperatures °C		35.5	34.4	32.9	31.0	27.7	25.4	25.8	29.4	31.7	33.8	34.8	35.3	31.5
Mean of minimum temperatures °C		22.3	22.0	20.6	18.5	16.5	14.0	13.0	14.8	17.4	19.7	20.8	21.8	18.5
Maximum temperature °C		42.8	41.0	40.8	39.0	35.5	35.4	35.8	40.0	41.0	42.7	44.0	43.6	44.0
Minimum temperature °C		13.0	13.8	9.6	6.8	-0.5	0.8	-3.0	-2.0	5.1	9.0	10.6	13.0	-3.0
Precipitation mm		95.6	104.7	93.9	76.7	40.4	15.8	18.0	25.4	11.1	35.5	79.9	112.9	709.9
Mean number of rainy days		7	7	7	7	4	3	3	2	3	4	7	7	61
Relative humidity %		61	64	66	68	70	67	62	55	52	51	56	61	61
Wind directions %	N	19	18	24	17	20	17	20	21	22	22	20	20	20
	NE	19	19	13	20	22	21	20	16	15	17	22	25	19
	E	11	11	11	10	11 8	8	8	9	8	13	10	12	10
	SE	9	7	5	8	5	5	4	5	6	9	7	5	6
	S	11	14	11	9	11	14	18	17	22	15	14	8	14
	SW	8	5	6	7	6	11	7	8	6	5	5	6	7
	W	1	0	1	0	0	0	0	0	1	0	1	0	0
	NW	2	1	4	1	0	1	0	1	1	1	1	1	1
	No wind	19	24	24	27	25	22	22	22	19	18	19	22	22

1-4 PEDRO P. PEÑA OBSERVATORY

(1962-1970, Altitude 245m)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature °C		29.0	28.0	26.2	24.0	22.4	18.1	18.2	20.9	24.0	26.4	28.3	28.8	24.5
Mean of maximum temperatures °C		36.0	34.8	32.5	30.2	27.4	24.7	25.1	28.4	31.3	33.1	35.1	35.7	31.2
Mean of minimum temperatures °C		21.5	21.5	19.8	17.4	15.0	11.8	10.6	12.1	15.6	18.4	20.4	21.0	17.1
Maximum temperature °C		44.2	43.5	41.6	41.0	38.5	37.0	37.5	41.5	44.5	44.6	44.8	44.4	44.8
Minimum temperature °C		11.5	11.0	10.5	3.5	1.0	-2.5	-7.0	-5.0	0.0	7.0	6.8	11.8	-7.0
Precipitation mm		68.0	111.2	82.2	40.2	19.9	5.2	3.4	4.6	13.4	32.6	70.7	116.0	567.4
Mean number of rainy days		5	6	6	6	4	3	2	1	2	4	5	6	50
Relative humidity %		61	64	67	59	71	69	64	51	51	55	58	60	62
Wind directions %	N	17	19	19	21	20	15	20	19	17	17	20	17	18
	NE	15	11	13	12	13	9	9	12	11	13	19	16	13
	E	7	5	5	4	4	4	3	4	4	3	4	5	4
	SE	12	12	8	9	8	8	8	5	9	14	9	10	9
	S	20	24	17	15	18	21	20	17	23	23	18	15	19
	SW	7	8	6	7	7	8	6	11	8	6	9	10	8
	W	2	1	5	3	5	4	4	4	3	4	2	2	3
	NW	4	2	3	4	4	4	5	4	11	4	4	5	4
	No wind	16	18	22	24	19	27	25	23	13	15	14	19	20

1-5 PUERTO CASADO OBSERVATORY

(1961-1970, Altitude 86.7m)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature °C		28.7	28.5	27.0	24.9	22.4	20.3	20.1	22.6	24.5	26.4	27.1	28.5	25.1
Mean of maximum temperatures °C		33.8	33.8	32.2	30.6	28.0	25.6	26.1	28.8	30.4	31.8	33.1	33.7	30.7
Mean of minimum temperatures °C		23.1	23.1	21.8	19.2	17.0	15.2	14.6	16.1	18.2	20.1	21.2	22.8	19.4
Maximum temperature °C		40.8	41.1	38.1	38.5	34.6	32.8	35.2	37.1	39.5	40.2	42.2	42.0	42.2
Minimum temperature °C		14.5	15.5	12.7	9.0	3.0	5.0	2.2	-0.1	7.8	11.0	12.0	14.0	-0.1
Precipitation mm		137.3	91.5	109.5	131.0	58.1	74.7	22.7	37.9	54.4	116.8	124.3	160.9	1,119.1
Mean number of rainy days		9	9	7	6	5	5	4	4	5	7	7	8	76
Relative humidity %		68	69	72	72	73	73	65	58	58	62	61	65	66
Wind directions %	N	23	25	20	12	13	17	15	17	16	20	18	19	18
	NE	14	16	17	14	14	16	17	16	14	16	16	19	16
	E	5	6	5	8	7	6	9	5	8	8	8	8	7
	SE	10	8	10	14	15	12	12	15	18	15	15	11	13
	S	13	12	15	21	18	20	19	20	16	19	17	12	17
	SW	6	9	8	10	8	11	12	9	10	5	6	6	8
	W	4	5	4	3	4	3	4	3	4	3	3	4	4
	NW	10	9	9	6	7	6	3	5	6	5	4	10	7
	No wind	14	9	12	12	14	9	9	9	8	8	13	11	10

1-6 PUERTO PINASCO OBSERVATORY

(1961-1966, Altitude 80m)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature °C		29.2	28.7	27.5	25.3	22.4	20.6	20.1	23.4	24.3	26.4	27.9	29.0	25.4
Mean of maximum temperatures °C		34.8	34.6	33.2	30.7	27.5	25.8	25.8	30.0	30.5	31.9	33.4	34.7	31.1.
Mean of minimum temperatures °C		23.2	22.9	21.7	20.2	17.3	15.3	14.0	16.3	18.1	19.6	21.1	22.7	19.4
Maximum temperature °C		42.0	42.0	39.5	38.5	33.8	33.0	35.0	40.0	41.0	42.0	41.5	44.0	44.0
Minimum temperature °C		16.0	17.0	11.5	10.1	5.5	5.0	4.2	3.0	5.0	11.3	13.0	15.0	3.0
Precipitation mm		128.1	135.9	122.0	138.0	71.5	72.3	25.2	32.7	80.1	116.4	167.5	182.7	1,272.4
Mean number of rainy days		10	10	9	9	7	7	4	5	7	8	8	10	94
Relative humidity %		68	70	70	75	75	71	66	57	60	61	62	66	67
Wind directions %	N	22	23	21	13	8	15	15	20	17	14	20	24	18
	NE	15	11	14	12	11	14	14	13	11	9	13	15	13
	E	13	8	9	13	14	14	17	12	11	10	13	15	12
	SE	15	14	10	13	18	10	8	13	14	21	19	10	14
	S	9	14	19	21	22	24	20	18	26	22	17	16	19
	SW	6	6	4	7	5	8	10	6	11	7	3	2	6
	W	2	4	1	1	2	2	3	2	1	2	2	2	2
	NW	5	8	7	4	4	1	3	4	2	2	4	4	4
	No wind	13	12	14	15	15	11	10	11	7	12	9	11	12

1-7 PEDRO JUAN CABALLERO OBSERVATORY

(1961-1970, Altitude 662.2m)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature °C		24.1	24.0	23.2	21.4	19.0	17.3	17.2	19.4	20.9	22.3	23.2	23.9	21.3
Mean of maximum temperatures °C		28.6	28.4	27.9	26.3	23.9	22.1	22.5	25.4	26.0	27.2	27.8	28.3	26.2
Mean of minimum temperatures °C		19.7	19.7	18.9	16.8	14.3	12.8	12.0	13.7	15.4	17.0	18.0	19.3	16.5
Maximum temperature °C		34.0	34.0	33.2	31.5	31.4	29.0	30.0	32.2	34.8	34.8	25.4	34.8	35.4
Minimum temperature °C		13.0	14.3	10.0	7.0	1.2	2.3	-1.0	-1.0	3.0	8.0	8.9	11.8	-1.0
Precipitation mm		177.1	151.2	163.0	113.6	114.3	108.3	46.4	41.0	96.7	170.9	168.5	185.8	1,536.8
Mean number of rainy days		11	10	10	7	6	6	4	4	6	8	9	10	91
Relative humidity %		73	75	75	73	72	72	65	60	66	67	67	72	70
Wind directions %	N	12	12	11	4	6	8	6	9	11	12	12	14	10
	NE	27	30	36	40	48	45	46	42	35	35	32	29	37
	E	23	19	24	25	22	18	20	20	19	19	24	22	21
	SE	6	7	5	9	8	7	6	6	9	11	9	5	7
	S	6	5	6	9	5	9	4	6	9	9	7	4	7
	SW	6	8	6	8	5	8	9	9	9	6	8	5	7
	W	5	4	3	2	2	2	3	3	3	2	1	6	3
	NW	12	13	6	2	2	3	3	4	5	5	6	12	7
	No wind	2	2	1	1	1	0	1	0	0	0	1	1	1

1-8 CONCEPCION OBSERVATORY

(1961-1970, Altitude 74.3m)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature °C		28.2	28.0	26.4	23.7	20.2	19.1	19.0	21.0	23.1	25.4	26.7	28.3	24.1
Mean of maximum temperatures °C		33.2	33.0	31.1	28.7	26.8	24.2	24.6	27.1	28.0	30.5	31.9	33.3	29.4
Mean of minimum temperatures °C		22.3	22.5	20.9	18.0	15.7	13.8	13.0	14.2	16.5	18.7	20.0	21.9	18.1
Maximum temperature °C		39.7	39.9	38.0	37.0	34.5	32.8	34.0	37.3	39.0	41.1	41.2	41.4	41.4
Minimum temperature °C		13.0	15.8	11.0	5.3	2.5	1.0	0.0	-3.0	3.3	8.5	10.4	12.0	-3.0
Precipitation mm		137.4	138.8	133.4	127.5	125.2	64.2	50.4	41.4	67.3	126.4	140.8	153.5	1,306.3
Mean number of rainy days		10	9	9	8	6	7	5	5	7	8	8	8	90
Relative humidity %		66	68	70	73	73	73	69	62	62	62	60	52	67
Wind directions %	N	23	23	19	13	11	10	8	10	11	15	17	24	15
	NE	8	11	15	9	15	20	17	16	12	12	10	11	13
	E	14	17	21	23	25	21	26	18	20	20	22	21	21
	SE	5	6	6	6	9	6	8	8	9	10	7	5	7
	S	20	18	20	26	20	26	21	29	31	27	25	18	23
	SW	4	2	3	5	3	3	4	4	6	4	6	3	4
	W	2	2	2	1	2	3	4	3	3	2	1	3	2
	NW	3	4	3	1	1	1	1	2	1	3	1	3	2
	No wind	19	17	10	16	14	10	11	10	6	7	11	12	12

1-9 PUERTO PRESIDENTE STROESSNER OBSERVATORY

(1961-1970, Altitude 196.4m)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature °C		26.7	26.2	24.9	21.9	18.8	16.6	16.5	18.4	20.2	22.7	24.6	26.4	22.0
Mean of maximum temperatures °C		32.2	31.8	30.6	27.7	24.9	22.6	22.8	24.7	25.8	28.3	330.3	31.8	27.8
Mean of minimum temperatures °C		18.9	19.1	17.7	14.7	11.2	9.3	9.0	10.3	12.7	14.7	16.2	18.3	14.3
Maximum temperature °C		39.4	38.6	38.4	34.4	31.5	30.4	30.5	35.3	36.5	36.5	39.0	38.8	39.4
Minimum temperature °C		8.2	5.5	4.9	4.2	-5.3	-4.7	-1.5	-3.6	-1.0	4.6	6.4	8.2	-5.3
Precipitation mm		153.0	194.5	158.0	142.8	123.4	97.5	73.1	84.7	136.8	254.8	158.2	167.2	1,744.0
Mean number of rainy days		11	11	9	6	6	7	8	8	11	10	9	10	9
Relative humidity %		73	77	77	81	83	83	80	77	77	74	71	70	77
Wind directions %	N	11	10	9	7	6	10	11	12	7	9	9	10	9
	NE	13	12	10	7	9	8	8	10	9	8	11	12	10
	E	15	15	14	10	9	8	11	10	11	15	15	16	12
	SE	13	13	11	15	14	16	14	12	14	17	16	16	14
	S	11	10	15	18	13	16	13	15	17	15	12	9	14
	SW	9	6	9	8	8	11	19	19	13	9	9	8	9
	W	6	6	6	5	3	4	5	7	4	5	6	4	5
	NW	6	8	6	3	4	4	4	4	3	4	4	6	5
	No wind	16	20	20	27	34	23	24	20	21	17	18	18	22

1-10 ASUNCION OBSERVATORY

(1961-1970, Altitude 115.8m)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature °C		28.5	28.1	26.3	23.5	21.3	18.6	18.7	20.0	21.7	24.5	26.7	28.5	23.9
Mean of maximum temperatures °C		32.9	32.9	30.8	28.0	25.8	23.1	23.2	25.0	26.4	29.2	31.3	33.2	28.5
Mean of minimum temperatures °C		22.5	22.7	21.4	18.8	16.8	14.2	13.9	14.6	16.5	18.6	20.6	22.4	18.6
Maximum temperature °C		41.4	38.8	38.1	36.2	33.1	32.3	32.2	35.5	37.1	40.3	39.9	41.5	41.5
Minimum temperature °C		14.9	14.0	10.0	7.0	4.2	1.5	1.8	3.0	7.0	9.2	11.4	14.4	1.5
Precipitation mm		164.3	158.8	197.8	176.3	89.2	63.7	38.8	44.0	81.7	110.8	156.0	138.4	1,419.8
Mean number of rainy days		6	7	9	5	5	5	5	5	7	7	7	7	75
Relative humidity %		63	67	68	70	71	72	69	66	65	63	61	60	66
Wind directions %	N	11	10	9	4	3	4	3	3	3	6	10	11	6
	NE	17	19	21	20	26	24	30	22	19	18	19	22	21
	E	17	18	20	21	26	22	22	20	22	19	18	19	20
	SE	13	13	12	10	9	10	6	7	9	15	11	11	10
	S	18	19	18	22	17	20	17	23	31	26	24	20	21
	SW	5	2	4	3	3	4	7	8	6	5	3	5	5
	W	2	2	2	2	0	2	2	3	1	1	2	2	2
	NW	1	1	1	1	0	0	1	1	0	0	1	1	1
	No wind	14	14	13	16	15	12	11	11	8	9	11	9	13

1-11 SAN LORENZO OBSERVATORY

(1961-1970, Altitude 119.7m)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature °C		27.8	27.5	25.6	22.6	20.0	18.2	17.7	19.2	20.9	23.9	25.9	27.7	23.1
Mean of maximum temperatures °C		32.9	32.7	30.9	28.0	25.6	23.0	23.2	25.1	26.2	28.9	30.9	31.7	28.3
Mean of minimum temperatures °C		19.9	20.1	18.6	15.4	13.1	110	10.8	11.9	13.9	16.0	17.6	18.5	15.6
Maximum temperature °C		40.1	39.6	39.7	36.1	33.0	32.4	33.0	36.1	38.5	40.7	40.3	40.8	40.8
Minimum temperature °C		11.4	11.4	7.3	4.7	0.2	-0.7	-1.2	-2.7	1.7	5.6	7.4	8.8	-2.7
Precipitation mm		172.0	175.2	196.0	179.4	91.3	70.8	41.5	48.0	106.3	128.9	170.3	160.6	1,540.3
Mean number of rainy days		7	8	8	6	5	5	5	5	8	8	7	8	80
Relative humidity %		68	72	75	78	79	77	75	71	72	69	67	66	72
Wind directions %	N	11	11	11	8	11	10	11	11	8	8	9	12	10
	NE	16	16	13	12	18	22	22	18	21	18	19	20	18
	E	3	4	4	3	4	3	5	6	6	5	5	4	4
	SE	6	5	3	5	2	4	2	4	5	13	6	6	5
	S	14	15	17	21	14	16	13	22	24	21	21	16	18
	SW	12	11	10	9	9	13	13	10	14	11	7	10	11
	W	4	2	2	2	1	1	1	2	1	1	2	2	2
	NW	3	1	4	2	1	1	1	1	1	2	2	2	2
	No wind	29	34	35	37	40	28	31	25	19	21	29	27	30

1-12 CAACUPE OBSERVATORY

(1961-1970, Altitude 228m)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature °C		26.5	26.0	24.6	21.9	19.8	17.4	17.5	18.9	20.4	22.8	24.7	26.4	22.2
Mean of maximum temperatures °C		32.0	31.6	29.8	27.2	24.9	22.3	22.5	25.8	28.5	28.0	31.0	31.9	28.0
Mean of minimum temperatures °C		20.4	20.5	19.0	16.3	14.2	12.0	11.2	12.9	14.8	17.0	18.6	20.3	16.4
Maximum temperature °C		39.0	37.0	38.0	35.0	32.0	30.5	31.5	35.5	37.0	39.0	38.5	39.5	39.5
Minimum temperature °C		13.0	12.0	7.0	5.0	3.2	-1.0	-3.5	-1.5	2.0	7.5	10.5	12.0	-3.5
Precipitation mm		177.7	159.6	158.3	153.4	104.5	77.8	50.4	48.7	114.5	135.4	155.9	150.3	1,486.5
Mean number of rainy days		7	8	7	7	5	5	5	4	8	8	6	6	76
Relative humidity %		69	73	74	77	77	76	73	69	71	69	67	65	72
Wind directions %	N	3	4	3	2	2	3	3	3	2	3	4	4	3
	NE	30	28	33	25	33	37	38	34	32	30	29	34	32
	E	11	12	11	17	18	15	16	13	13	14	14	17	14
	SE	15	19	16	19	17	16	15	22	21	24	22	17	19
	S	4	4	4	7	5	8	9	7	11	8	6	5	6
	SW	2	4	4	2	1	2	3	3	5	6	3	2	3
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	2	2	2	0	1	0	0	1	1	1	1	2	1
	No wind	31	27	26	28	22	18	15	16	14	13	20	18	21

1-13 VILLARRICA OBSERVATORY

(1961-1970)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature °C		26.8	26.3	24.3	22.1	19.5	17.2	17.2	18.8	20.3	22.7	24.8	26.6	22.2
Mean of maximum temperatures °C		32.0	31.6	30.0	27.5	25.2	23.0	23.0	24.8	25.7	28.0	29.9	31.8	27.7
Mean of minimum temperatures °C		20.3	20.6	19.1	16.3	13.9	12.0	11.9	13.1	14.8	16.5	18.1	19.9	16.4
Maximum temperature °C		37.9	37.2	36.8	34.4	31.5	31.3	31.2	34.5	35.5	35.5	37.3	38.6	38.6
Minimum temperature °C		12.5	11.0	7.6	4.9	1.0	-0.5	-1.7	-2.4	2.0	7.0	6.8	8.4	-2.4
Precipitation mm		200.5	169.5	181.8	140.2	113.0	98.7	56.5	84.4	133.5	172.0	143.3	165.9	1,659.3
Mean number of rainy days		9	9	8	6	6	7	6	7	9	9	7	9	92
Relative humidity %		69	72	74	76	76	76	72	68	70	68	66	65	71
Wind directions %	N	16	12	15	9	9	8	6	8	8	10	11	16	11
	NE	17	17	19	16	27	30	32	27	21	16	18	17	21
	E	8	9	9	11	12	9	13	9	11	14	9	13	11
	SE	4	5	2	4	1	2	3	3	4	4	6	5	4
	S	26	27	25	26	22	28	23	31	36	34	32	24	28
	SW	3	3	1	2	0	1	2	2	2	2	3	2	2
	W	2	2	2	1	2	1	1	2	1	2	1	2	2
	NW	2	2	2	1	1	1	1	2	1	2	2	1	1
	No wind	21	22	25	29	26	20	18	16	154	15	18	19	20

1-14 SAN JUAN BAUTISTA OBSERVATORY

(1961-1970, Altitude 125.7m)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature °C		27.2	26.8	25.0	22.1	19.3	16.9	16.9	18.0	20.0	22.6	24.9	26.9	22.2
Mean of maximum temperatures °C		32.2	31.7	29.8	27.2	24.6	22.1	22.2	23.6	24.8	27.4	29.7	32.4	27.3
Mean of minimum temperatures °C		21.1	20.9	19.4	16.7	14.0	11.7	11.4	12.0	14.3	16.6	18.7	20.5	16.4
Maximum temperature °C		39.0	38.6	37.8	35.3	32.6	31.6	31.6	34.5	36.6	36.6	38.0	39.2	39.2
Minimum temperature °C		13.4	12.2	9.9	5.2	1.6	0.8	-1.0	-0.6	2.7	7.2	9.0	11.8	-1.0
Precipitation mm		191.1	168.0	151.5	130.8	100.3	91.1	69.6	70.6	112.0	169.4	162.4	154.6	1,571.4
Mean number of rainy days		7	6	8	5	5	4	5	6	8	8	7	7	76
Relative humidity %		63	67	69	71	71	72	70	66	66	63	62	60	67
Wind directions %	N	9	11	12	7	9	8	8	8	6	6	9	11	9
	NE	26	26	26	27	30	30	31	25	22	23	22	28	26
	E	16	12	13	17	22	18	22	18	20	20	21	15	18
	SE	22	23	20	19	13	13	12	16	18	22	20	22	18
	S	16	14	18	18	18	20	17	22	24	18	19	14	18
	SW	3	4	2	3	2	3	4	5	4	4	2	3	3
	W	1	1	1	1	1	1	2	2	1	1	1	1	1
	NW	2	2	2	2	1	1	1	1	1	1	1	3	2
	No wind	5	7	5	6	4	4	3	3	3	4	4	3ç	4

1-15 PILAR OBSERVATORY

(1961-1970, Altitude 55.8m)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature	°C	27.7	27.2	25.3	22.3	19.9	16.9	16.8	18.0	20.0	22.9	25.4	27.5	22.5
Mean of maximum temperatures	°C	32.8	32.2	30.0	27.0	24.9	21.8	22.0	23.4	25.1	27.7	30.1	32.6	27.5
Mean of minimum temperatures	°C	21.3	21.5	20.1	16.7	14.9	12.1	11.7	12.2	14.2	16.8	19.0	20.6	16.8
Maximum temperature	°C	42.1	40.5	38.5	36.4	33.3	31.8	31.8	43.9	37.0	39.4	40.4	41.6	42.1
Minimum temperature	°C	14.5	13.5	8.5	7.7	4.0	1.0	0.7	1.0	5.6	8.0	9.8	12.5	0.7
Precipitation	mm	192.1	129.1	174.6	163.6	76.4	38.3	52.0	40.1	75.6	142.6	162.2	111.2	1,357.8
Mean number of rainy days		8	7	8	7	5	4	4	4	7	7	7	7	75
Relative humidity	%	64	69	71	74	75	76	74	70	68	66	64	61	69
Wind directions %	N	14	14	16	10	12	14	11	8	8	7	11	15	12
	NE	22	21	17	23	28	26	29	27	26	24	25	24	24
	E	13	13	13	16	14	12	17	13	17	24	21	16	16
	SE	16	18	16	13	10	12	8	13	14	18	13	14	14
	S	9	6	10	8	8	12	12	15	17	10	10	9	10
	SW	3	4	3	3	2	4	4	5	4	4	3	3	4
	W	1	0	1	0	0	1	0	1	0	0	0	1	0
	NW	2	1	1	1	1	1	1	1	1	1	1	2	1
	No wind	20	23	23	26	25	17	17	15	13	12	15	14	18

1-16 CAPITAN MIRANDA OBSERVATORY (1964-1970)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature	°C	25.7	25.5	23.3	21.1	18.5	15.7	15.8	16.7	18.5	21.2	23.5	25.3	20.9
Mean of maximum temperatures	°C	31.7	31.1	28.7	26.5	24.2	20.9	21.1	22.3	23.7	26.7	29.0	30.8	26.4
Mean of minimum temperatures	°C	18.4	19.1	17.0	14.7	12.1	9.9	9.7	10.3	11.8	14.0	16.0	17.5	14.2
Maximum temperature	°C	37.0	37.0	36.5	33.5	31.5	30.5	30.6	31.6	33.5	35.6	37.0	38.5	38.5
Minimum temperature	°C	9.0	12.0	3.5	4.5	0.0	-1.5	-3.0	-2.0	0.0	2.5	4.0	7.5	-3.0
Precipitation	mm	151.6	174.3	162.3	109.2	104.3	100.0	106.5	122.7	137.1	170.5	116.9	192.5	1,647.9
Mean number of rainy days		7	8	7	6	5	6	5	7	9	8	6	7	81
Relative humidity	%	65	71	73	76	77	80	77	75	76	71	66	66	73
Wind directions %	N													
	NE													
	E													
	SE													
	S													
	SW													
	W													
	NW													
	No wind													

1-17 ENCARNACION OBSERVATORY

(1961-1970, Altitude 91m)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature	°C	26.8	26.2	24.5	21.4	18.6	16.2	16.2	17.8	19.4	22.0	24.2	26.3	21.6
Mean of maximum temperatures	°C	31.9	31.4	29.7	24.3	24.4	21.7	21.8	23.4	24.3	26.9	29.2	31.4	26.7
Mean of minimum temperatures	°C	19.3	19.8	18.5	14.7	12.2	10.4	10.4	11.4	13.3	14.9	17.0	18.8	15.1
Maximum temperature	°C	40.0	38.6	39.3	34.4	33.0	31.6	31.4	34.8	35.6	36.4	37.0	39.6	40.0
Minimum temperature	°C	9.3	7.0	8.4	2.5	-1.2	-2.5	-3.5	-2.8	0.2	1.6	43.8	7.0	-3.5
Precipitation	mm	138.9	145.4	145.7	133.7	112.0	102.8	183.6	100.5	150.9	169.0	144.2	147.7	1,674.4
Mean number of rainy days		7	8	9	6	6	7	6	8	9	9	8	8	91
Relative humidity	%	62	72	75	77	79	79	76	73	74	71	69	66	73
Wind directions %	N	5	5	7	3	3	6	5	6	3	3	4	6	4
	NE	14	17	16	13	20	23	24	18	16	13	13	19	17
	E	22	24	23	27	30	25	26	24	22	26	26	22	25
	SE	16	14	15	14	13	11	8	13	16	17	16	15	14
	S	15	14	16	17	12	15	13	15	20	19	19	16	16
	SW	10	8	7	4	4	3	7	8	6	8	7	8	7
	W	3	1	2	2	1	1	3	2	2	2	1	2	2
	NW	3	4	2	1	1	1	0	2	2	1	2	2	2
	No wind	12	!#	12	18	15	15	14	12	12	10	12	10	13

1-18 YACYRETA OBSERVATORY

(1963-1970, Altitude 86m)

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Mean temperature °C		26.7	26.6	24.8	22.1	19.3	16.4	17.0	17.3	19.0	22.4	24.5	26.4	21.9
Mean of maximum temperatures °C		33.0	32.7	30.5	27.9	25.5	22.1	22.5	23.5	24.7	28.0	29.6	32.0	27.6
Mean of minimum temperatures °C		20.0	20.5	18.8	15.1	12.8	11.6	11.5	11.4	13.6	16.6	18.5	20.0	15.9
Maximum temperature °C		39.5	39.4	40.0	36.0	34.0	32.0	31.2	34.0	35.7	37.8	38.5	40.8	40.8
Minimum temperature °C		12.6	13.8	9.0	2.0	0.0	0.0	0.0	-0.2	4.2	7.4	10.6	11.8	-0.2
Precipitation mm		133.4	159.5	167.3	112.6	88.0	121.4	81.8	64.6	128.9	195.5	149.6	184.5	1,587.1
Mean number of rainy days		7	7	8	6	5	5	5	5	6	8	7	6	75
Relative humidity %		67	72	73	75	76	77	77	75	75	71	70	67	73
Wind directions %	N	12	14	18	18	23	21	18	15	9	13	11	19	16
	NE	12	14	14	11	15	16	18	14	12	11	11	13	13
	E	16	16	11	12	14	14	15	13	17	18	17	17	15
	SE	13	10	12	10	6	8	3	9	6	12	9	9	10
	S	22	26	26	26	22	22	20	24	30	27	31	23	25
	SW	2	1	1	2	1	2	1	5	4	1	2	1	2
	W	3	2	2	1	2	3	3	1	3	1	1	1	2
	NW	3	1	1	1	1	1	1	1	1	1	1	2	1
	No wind	17	14	14	19	16	12	20	16	18	15	17	15	16

1-19 SAN ESTANISLAO OBSERVATORY

Year \ Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
	Mean temperature °C												
1975				21.8	18.4	18.2	15.5		20.8	21.3	23.0	25.5	
1976	26.6	24.9	23.9	29.9		15.7	17.4	17.5					
1977													
1978	27.0	26.9	26.5	20.0	17.3	18.0	20.5	17.0	20.4	23.9	24.8	26.5	
1979	26.7	26.2	24.6	20.6									
	Mean of maximum temperatures °C												
1975				28.1	24.0	23.7	23.4		26.2	27.6	28.9	31.2	
1976	31.5	30.6	29.9	26.8		22.0	24.4	24.4					
1977													
1978	33.2	34.3	34.4	30.2	26.7	25.9	27.4	24.1	27.0	30.9	30.9	33.2	
1979	33.1	33.9	31.3	26.4									
	Mean of minimum temperatures °C												
1975				17.5	15.0	15.2	10.9		17.3	16.6	17.8	20.2	
1976	22.9	19.8	19.4	14.9		11.8	12.1	11.8					
1977													
1978	20.6	20.5	20.4	12.1	11.0	12.1	16.3	12.4	15.4	18.6	19.6	20.1	
1979	20.0	20.3	19.1	15.9									

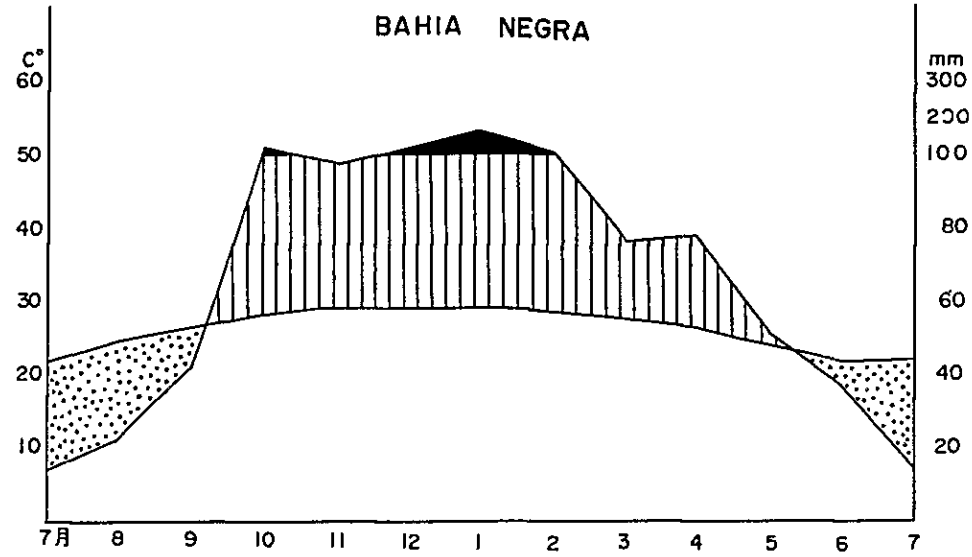
1-19 SAN ESTANISLAO OBSERVATORY

Month / Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
	Maximum temperature °C												
1975				32.0	29.8	30.0	32.0		33.3	35.0	25.2	35.0	
1976	35.0	36.0	36.0	34.2		29.5	32.6	33.2					
1977													
1978	38.6	37.8	39.0	35.2	33.6	31.0	33.0	32.0	34.4	38.0	36.2	37.0	
1979	36.4	38.0	35.4	33.0									
	Minimum temperature °C												
1975				5.0	5.0	3.0	-3.0		10.0	8.2	10.0	9.0	
1976	19.2	13.4	7.3	5.0			-2.6	0.8					
1977													
1978	14.4	15.2	15.0	4.6	2.8	-1.2	1.1	-2.0	7.0	10.0	13.0	15.0	
1979	13.0	17.0	11.4	9.0		-2.2							
	Recepitation mm												
1975				222.3	93.0	138.7	66.0		220.5	94.3	229.4	205.5	
1976	204.1	45.4	54.7			107.2	6.2	13.6					
1977													
1978	43.0	76.0	73.0	15.0	35.0	66.4	86.7	64.2	181.3	193.2	132.6	183.4	1,150.0
1979	30.7	78.3	55.8	313.9	173.9	1.1	42.8	125.4	133.6	222.4	208.4	238.5	1,624.8

1-19 SAN ESTANISLAO OBSERVATORY

Year \ Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
	Number of rainy days												
1975				6	8	10	4		10	8	7	12	
1976	8	5	6			5	3	4					
1977													
1978	4	5	6	2	3	5	6	3	9	8	8	16	73
1979	8	10	3	7	9	1	6	10	8	10	9	16	97
	Maximum daily precipitation mm												
1975				85.4	39.7	47.0	31.8		56.4	35.7	55.9	98.5	
1976	63.2	19.7	33.0			87.3	4.2	5.8					
1977													
1978	20.0	36.0	25.0	12.0	27.6	29.7	29.5	32.8	70.8	52.7	50.8	87.5	
1979	10.0	21.7	28.0	137.0	52.2	1.1	16.6	25.6	38.0	66.5	40.0	80.0	
	Relative humidity %												
1975				81	82	82	70		75	75	74	77	
1976	76	73	72	78		79	70	70					
1977													
1978	78	75	76	70	72	73	76	69	74	70	73	71	
1979	70	73	76	84									

2. FIGURE OF OBSERVED DATA OF THE METEOROLOGY
(Walter's climatic diagram)



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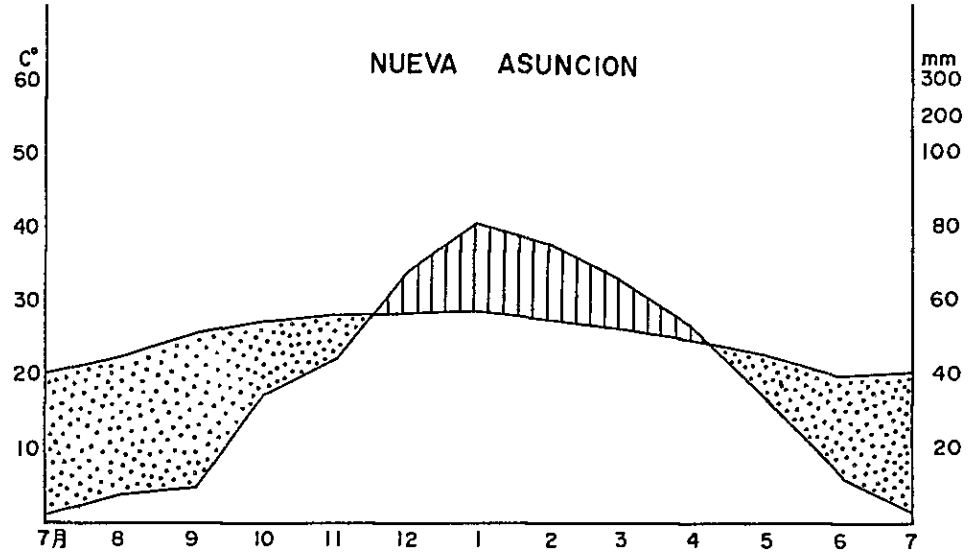

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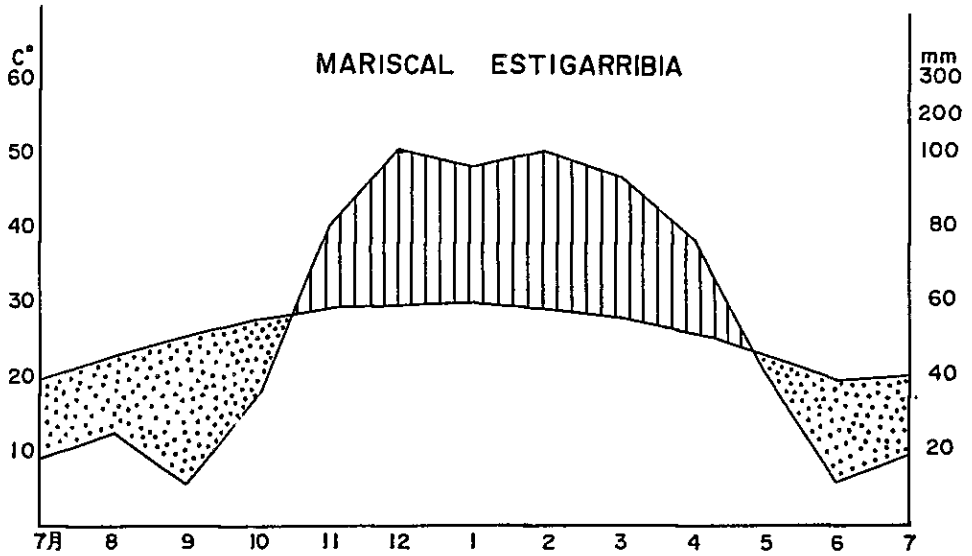

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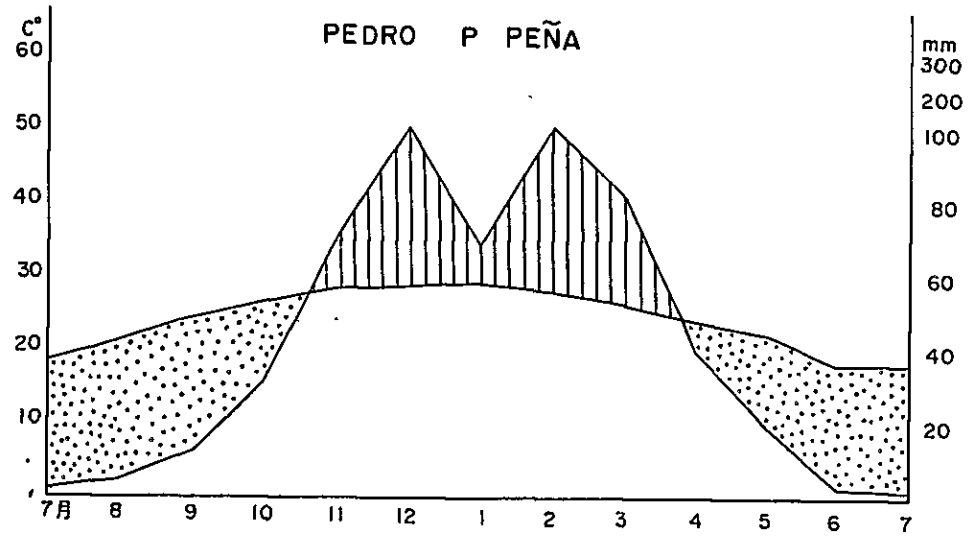
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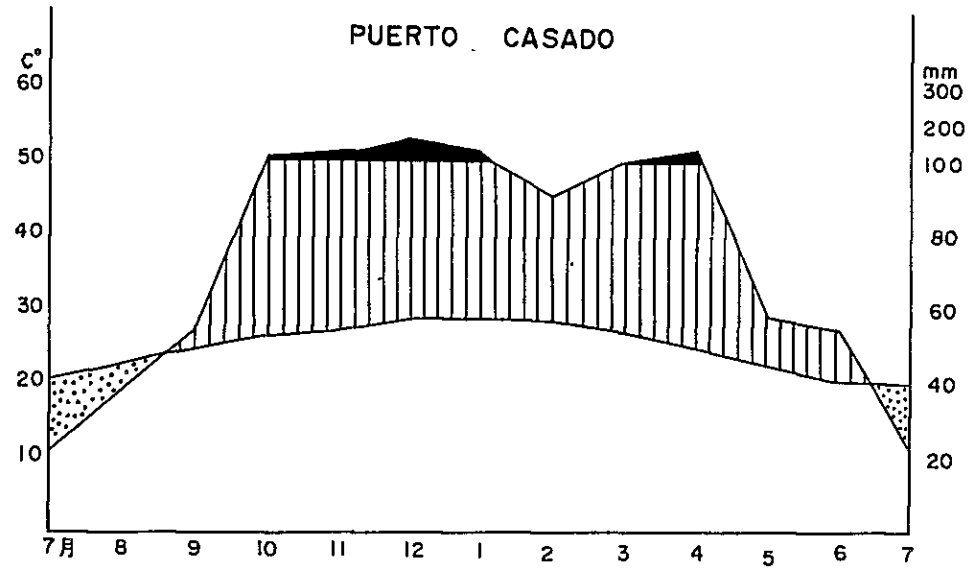
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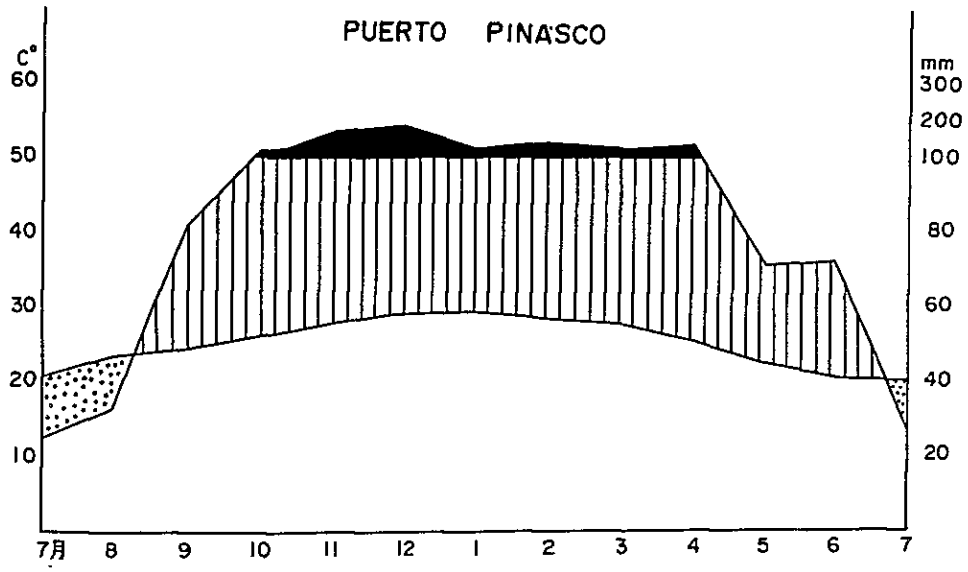
PUERTO PINASCO
C°
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7月 8 9 10 11 12 1 2 3 4 5 6 7

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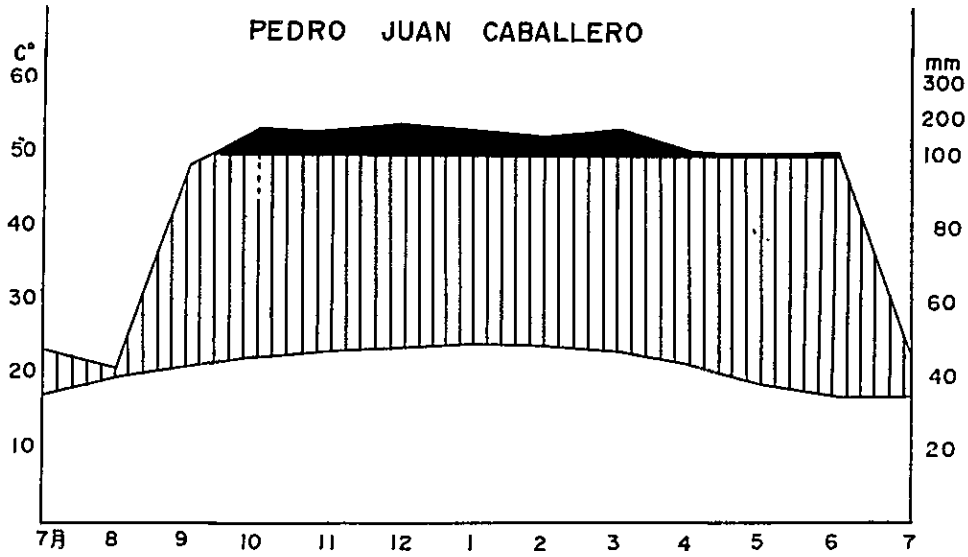
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C°
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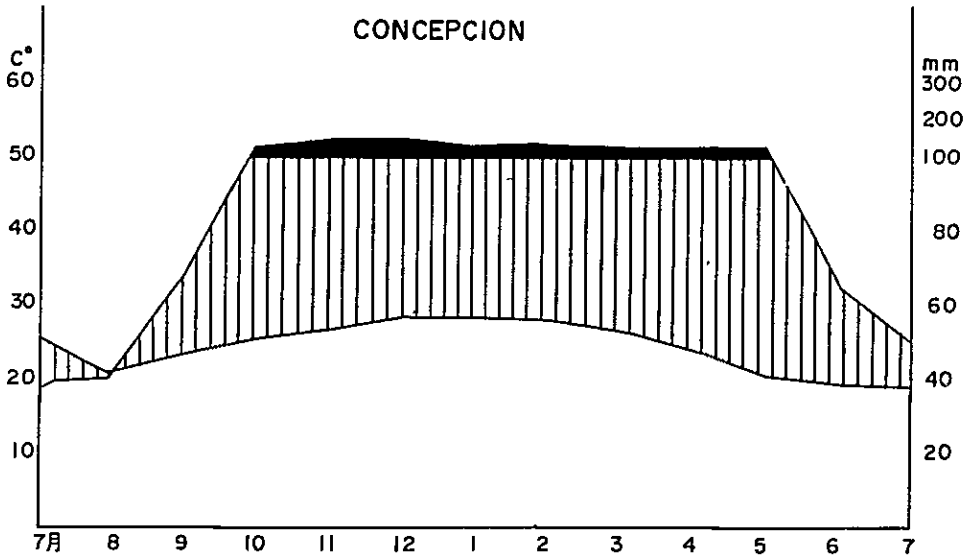
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7月 8 9 10 11 12 1 2 3 4 5 6 7

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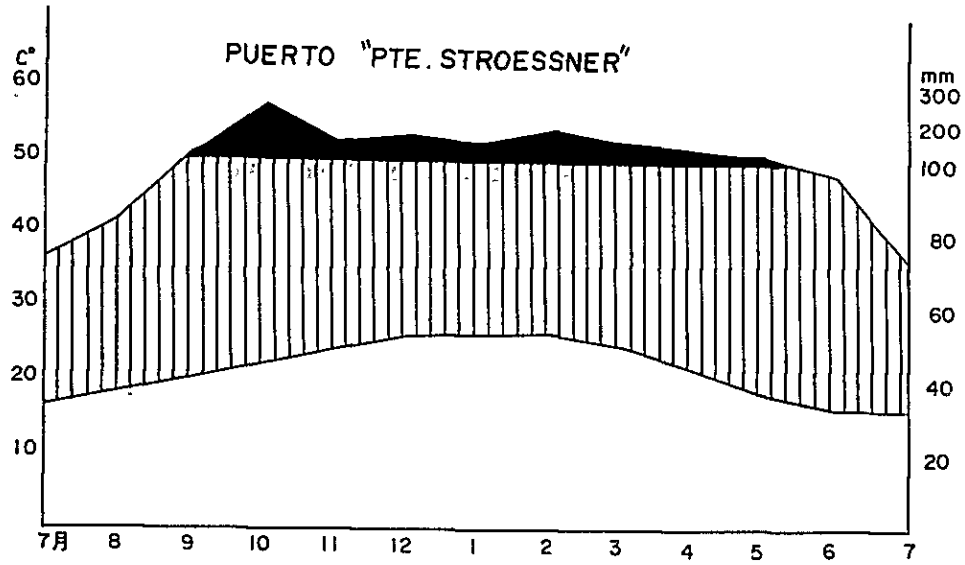
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C°
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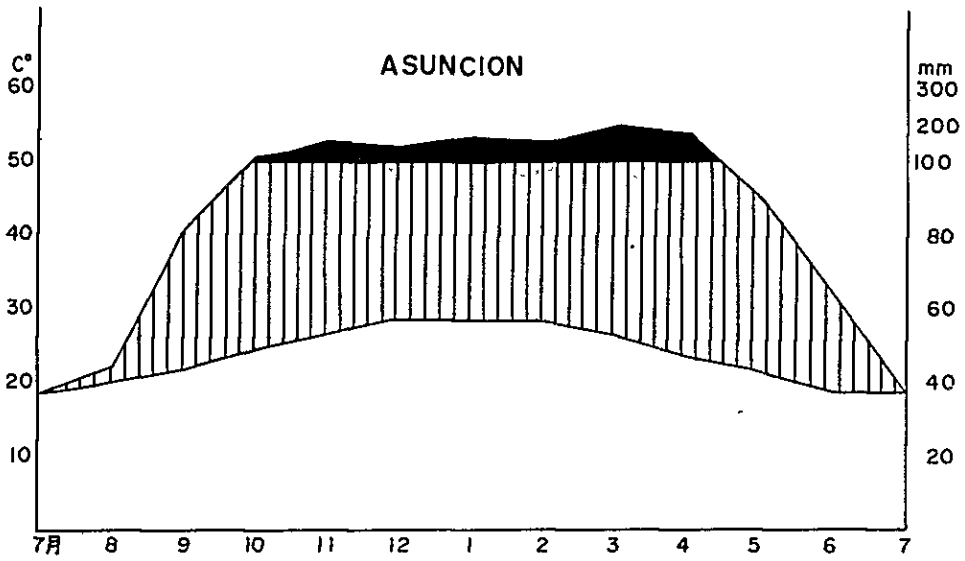
7月 8 9 10 11 12 1 2 3 4 5 6 7

2 — 9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7月 8 9 10 11 12 1 2 3 4 5 6 7

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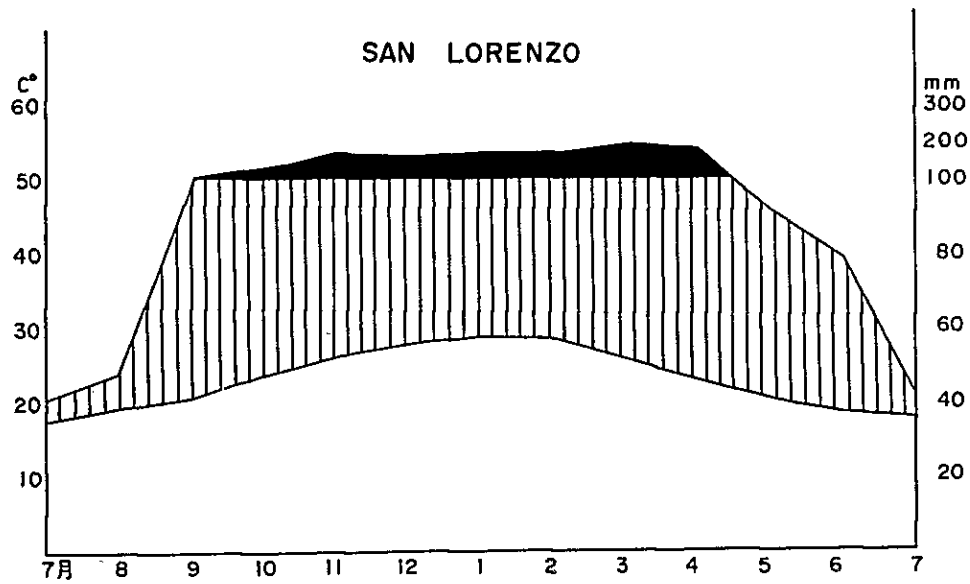
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C°
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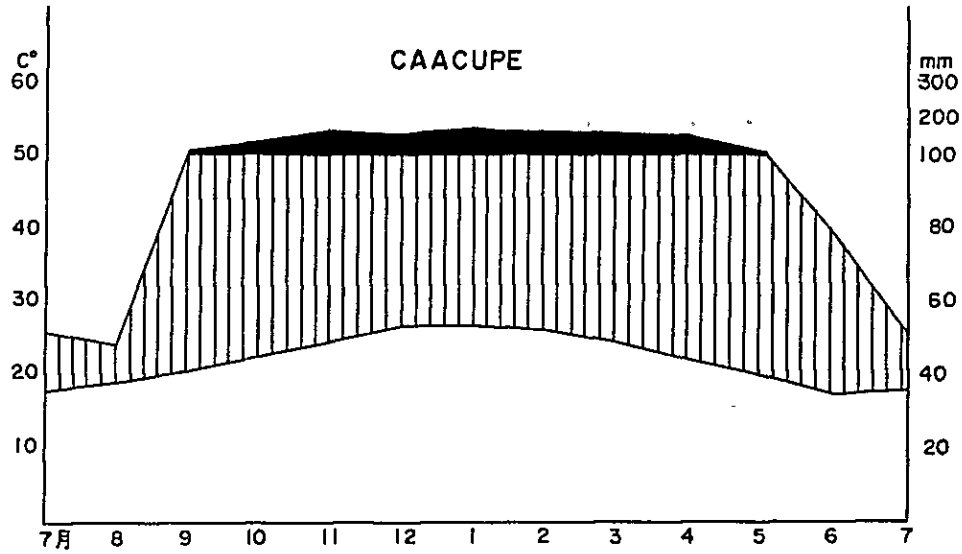
2 — 11


CAACUPE
C°
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7月 8 9 10 11 12 1 2 3 4 5 6 7

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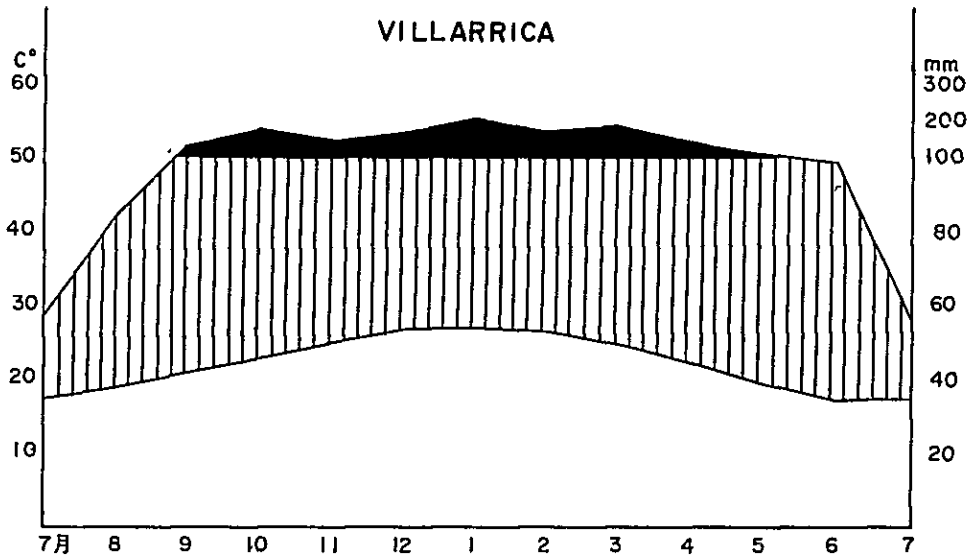
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C°
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7月 8 9 10 11 12 1 2 3 4 5 6 7

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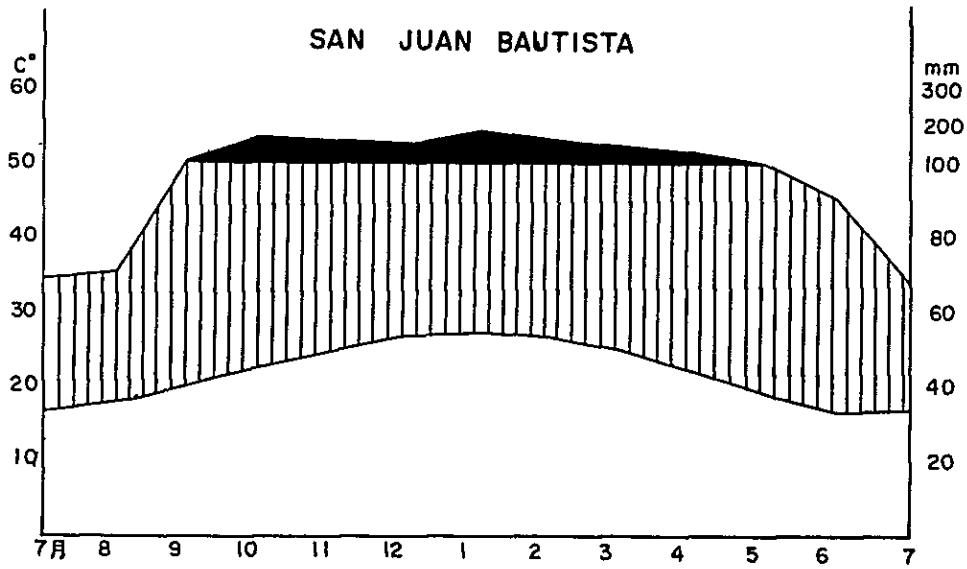
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C°
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7月 8 9 10 11 12 1 2 3 4 5 6 7

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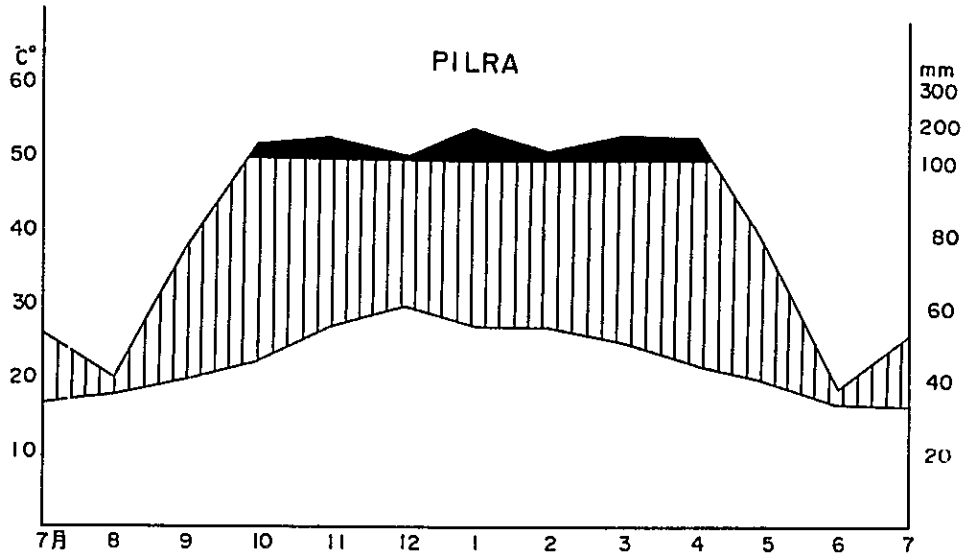
PILRA
C°
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7月 8 9 10 11 12 1 2 3 4 5 6 7

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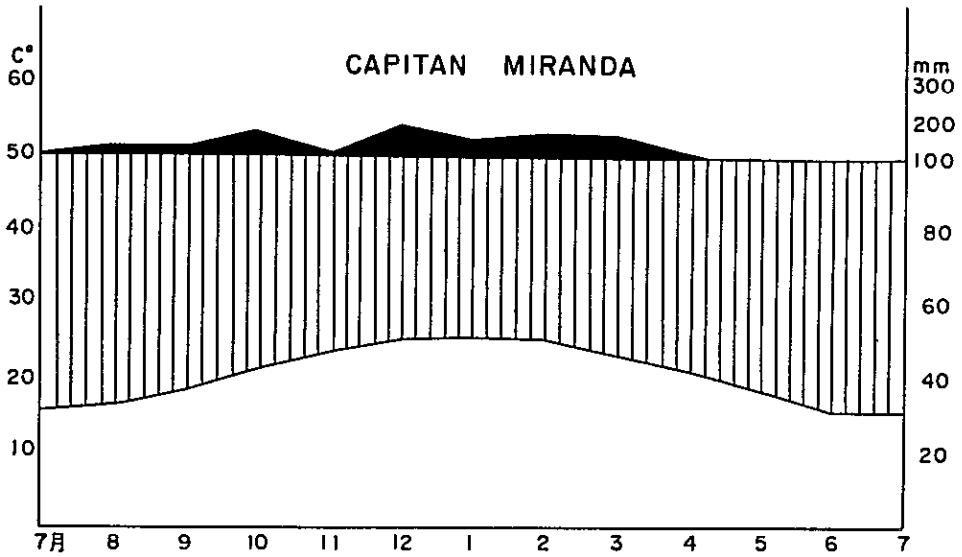
CAPITAN MIRANDA
C°
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7月 8 9 10 11 12 1 2 3 4 5 6 7

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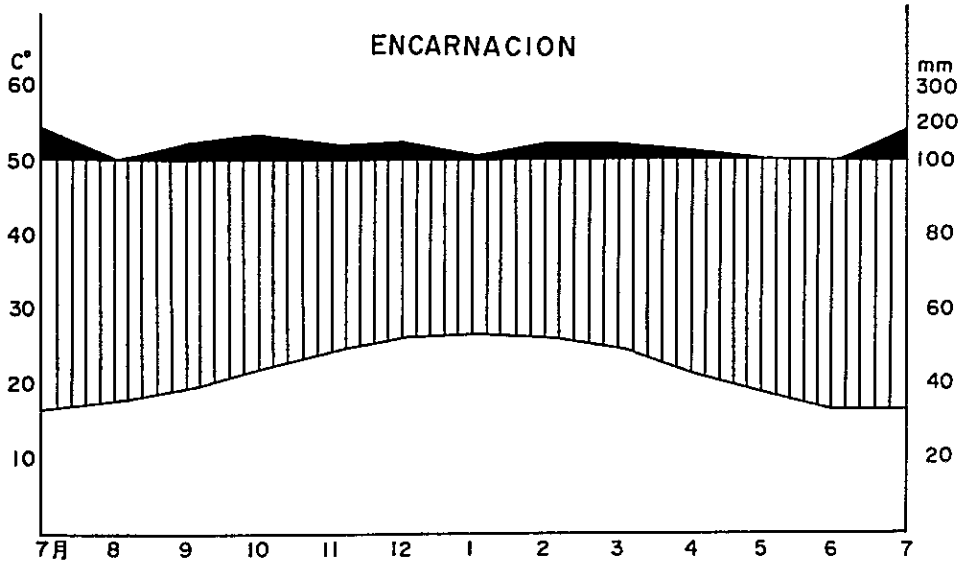
ENCARNACION
C°
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7月 8 9 10 11 12 1 2 3 4 5 6 7

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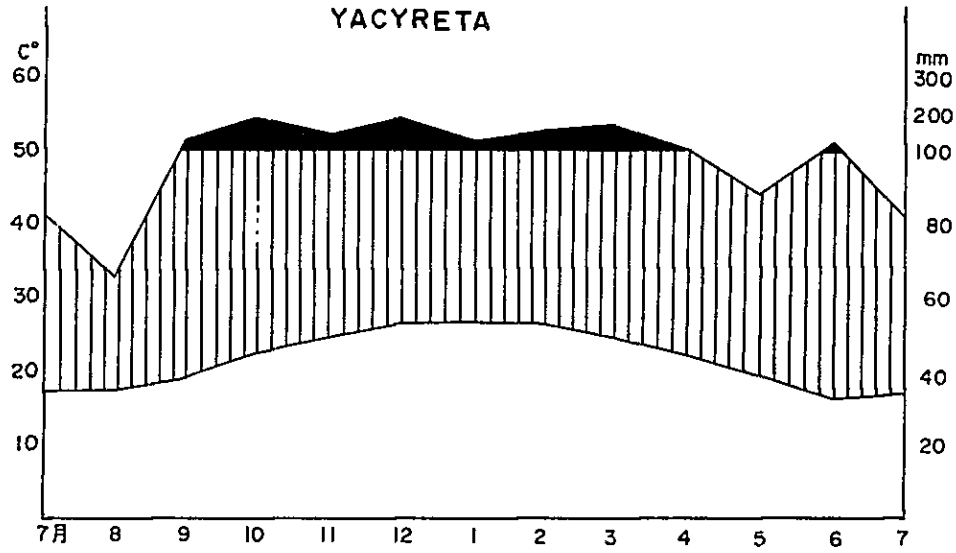
YACYRETA
C°
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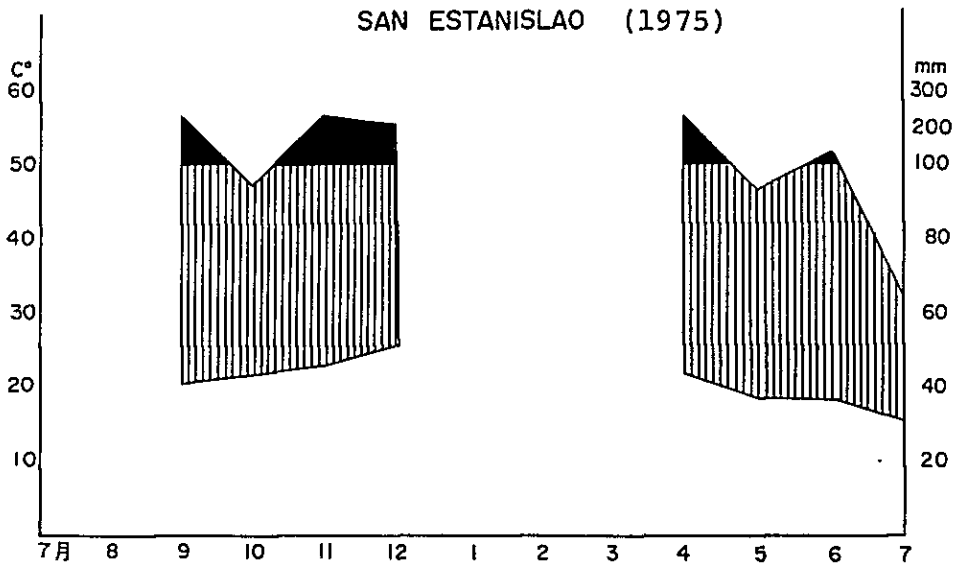
7月 8 9 10 11 12 1 2 3 4 5 6 7

2 — 1 8


SAN ESTANISLAO (1975)
C°
60
50
40
30
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mm
300
200
100
80
60
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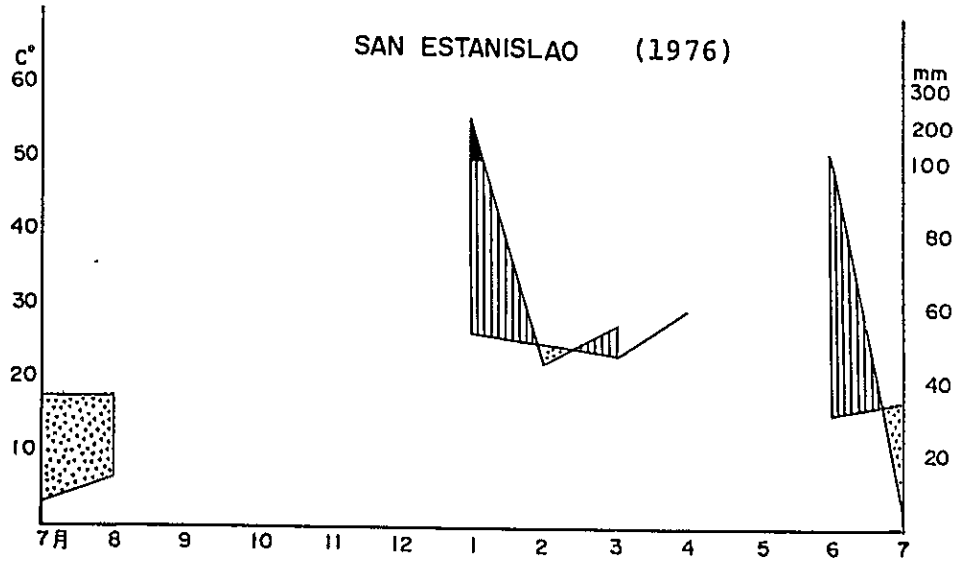
7月 8 9 10 11 12 1 2 3 4 5 6 7

2 — 1 9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C°
60
50
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mm
300
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100
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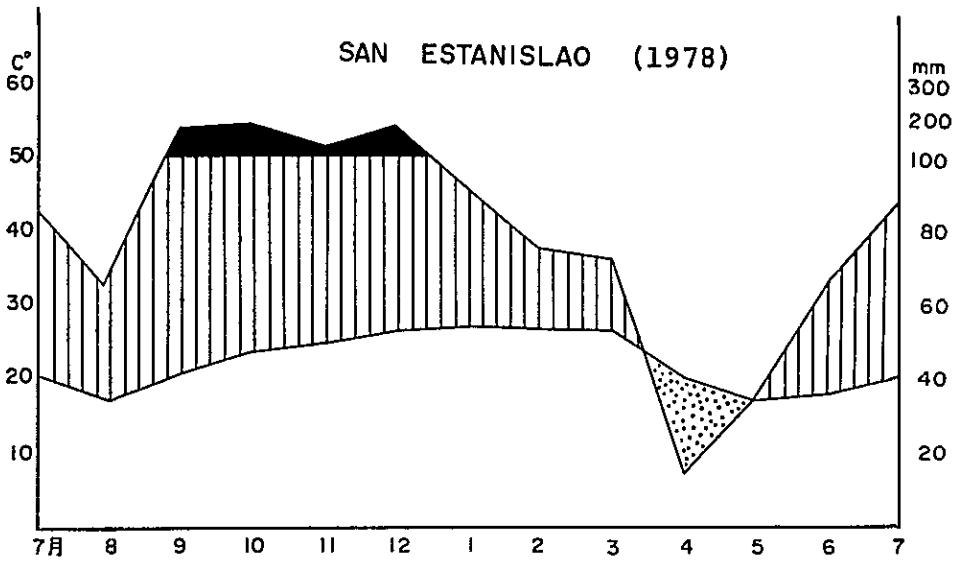
7月 8 9 10 11 12 1 2 3 4 5 6 7

2 − 2 0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C°
60
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mm
300
200
100
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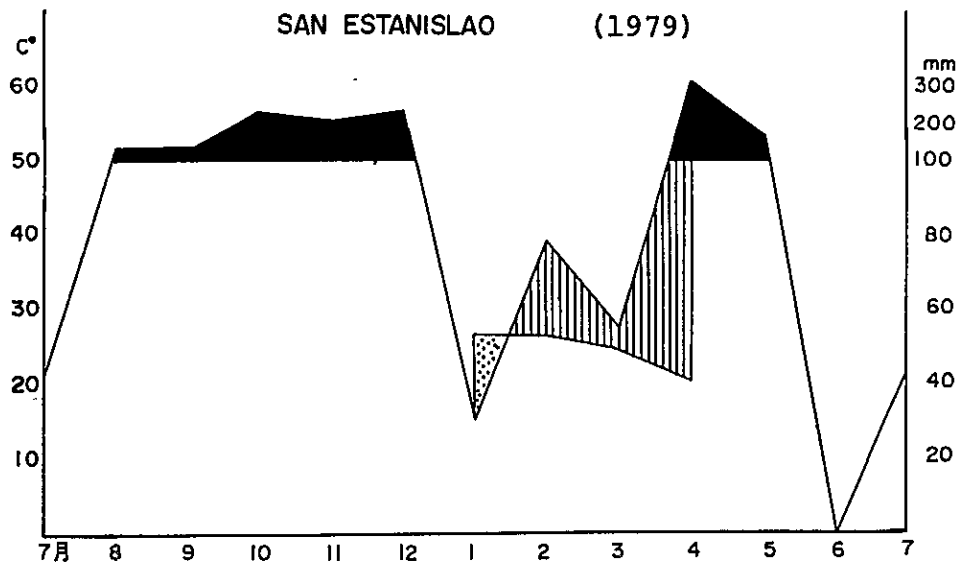
20
7月 8 9 10 11 12 1 2 3 4 5 6 7

2 − 2 1


SAN ESTANISLAO (1979)
C°
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30
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mm
300
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100
80
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7月 8 9 10 11 12 1 2 3 4 5 6 7

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o Graphic Representation by Walter's Climatic Diagram

The horizontal axis of the climatic diagram is scaled in the sequential order of January to December from the point of origin in the northern hemisphere whereas in the southern hemisphere it is scaled from July to June, so that the center of the summer season always comes at the center of the axis. On the vertical axis, atmospheric temperature is scaled on the left-hand side in intervals of 10°C, and precipitation on the right-hand side in intervales of 20 mm to make the graduation of the atmospheric temperature of 30°C coincide with the graduation of precipitation of 60 mm. Scaling of precipitation in excess of 100 mm is reduced to 1/10.

With respect to precipitation, (1) portions of the area where the curve of annual change in precipitation is above the 100 mm line is indicated in black, (2) portions of the area where the curve of annual change in precipitation is below the 100 mm line and above the curve of annual change in temperature is shadowed in thin lines, and (3) portions of the area where the curve of annual change in precipitation is below the curve of annual change in temperature is shadowed by sand grains (dots).

On these graphic representations, the following explanation is given (by Kira, 1979, 1980).

The period in which the curve of annual change in precipitation, shown on the climatic diagram, comes under the curve of annual change in temperature is the dry season, and the area represented in sand grains (dots) indicates the severity of dryness.

Even for the months with the same amount of rainfall, the amount of transpiration is larger and the degree of

dryness is intensified when the temperature is higher. Empirically, this relationship is best represented when 30°C is matched with 60 mm. Furthermore, based on the assumption that water shortage is unlikely to occur when monthly precipitation exceeds 100 mm, the portion in excess of 100 mm line is entirely colored in black and the graduation on the precipitation axis is also reduced in scale.

3. RESULTS OF SAMPLE PLOT SURVEY (NUMBER OF TREES PER 0.4 ha)

Plot No.	Forest type	More than 10 cm of d.b.h. total	More than 41 cm of d.b.h. within 10 cm of d.b.h. total	More than 10 cm of d.b.h. wholesome tree					More than 10 cm of d.b.h. defective tree					More than 41 cm of d.b.h. within 10 cm of d.b.h. wholesome tree					More than 41 cm of d.b.h. within 10 cm of d.b.h. defective tree				
				A	B	C	D+E	Total	A	B	C	D+E	Total	A	B	C	D+E	Total	A	B	C	D+E	Total
1	M	124	14	12	1	24	84	121	1	0	0	2	3	5	0	3	5	13	0	0	0	1	1
2	M	100	14	12	14	28	46	100	0	0	0	0	0	2	4	6	2	14	0	0	0	0	0
3	M	71	9	13	1	20	33	67	0	1	0	3	4	3	1	4	0	8	0	0	0	1	1
4	B	150	1	0	2	8	138	148	0	0	0	2	2	0	0	0	1	1	0	0	0	0	0
5	A	97	13	13	6	16	62	97	0	0	0	0	0	1	3	5	4	13	0	0	0	0	0
6	A	99	20	12	10	13	56	91	1	0	1	6	8	3	1	5	9	18	0	0	0	2	2
7	A	116	14	24	4	8	75	111	0	0	1	4	5	6	0	3	4	13	0	0	0	1	1
8	A	86	19	20	7	10	45	82	0	0	1	3	4	9	2	3	5	19	0	0	0	0	0
9	A	74	9	13	5	13	42	73	1	0	0	0	1	3	1	2	2	8	1	0	0	0	1
10	M	98	15	11	4	18	65	98	0	0	0	0	0	4	1	2	8	15	0	0	0	0	0
11	A	65	14	6	7	8	42	63	0	0	0	2	2	2	1	1	10	14	0	0	0	0	0
12	A	107	19	14	9	18	64	105	0	0	0	2	2	4	5	5	4	18	0	0	0	1	1
13	A	89	15	17	5	14	50	86	2	0	0	1	3	8	1	4	1	14	0	0	0	1	1
14	M	81	10	12	7	8	44	71	0	1	4	5	10	2	3	3	1	9	0	1	0	0	1
15	A	114	10	22	5	24	62	113	0	0	0	1	1	3	1	3	3	10	0	0	0	0	0
16	M	108	12	23	8	12	65	108	0	0	0	0	0	7	2	2	1	12	0	0	0	0	0
17	A	94	9	18	2	17	56	93	0	0	0	1	1	6	0	3	0	9	0	0	0	0	0
18	A	115	10	20	4	17	74	115	0	0	0	0	0	5	2	3	0	10	0	0	0	0	0
19	A	95	11	9	4	14	63	90	0	0	1	4	5	2	2	4	2	10	0	0	1	0	1
20	A	114	22	7	11	19	74	111	0	0	0	3	3	2	4	8	8	22	0	0	0	0	0
21	M	90	9	6	1	15	66	88	0	0	0	2	2	1	0	7	1	9	0	0	0	0	0
22	A	115	14	20	5	19	70	114	0	0	0	1	1	3	0	6	5	14	0	0	0	0	0
23	M	117	13	11	4	20	80	115	0	0	1	1	2	4	1	5	3	13	0	0	0	0	0
24	M	106	8	8	8	16	73	105	0	0	0	1	1	2	3	1	2	8	0	0	0	0	0
25	M	112	7	17	6	14	72	109	0	0	0	3	3	2	1	2	1	6	0	0	0	1	1
26	M	113	25	11	7	25	67	110	0	0	0	3	3	5	5	4	11	25	0	0	0	0	0
27	M	93	9	12	5	8	66	91	0	0	0	2	2	3	1	2	3	9	0	0	0	0	0
28	A	95	11	14	3	13	63	93	0	0	0	2	2	3	1	2	4	10	0	0	0	1	1
29	M	156	7	11	2	11	123	147	0	0	1	8	9	1	0	2	3	6	0	0	0	1	1
30	M	138	12	15	7	25	89	136	0	0	0	2	2	4	2	5	1	12	0	0	0	0	0
31	B	109	4	14	1	15	77	107	0	0	1	1	2	0	0	1	3	4	0	0	0	0	0
32	M	92	8	5	3	19	63	90	0	0	0	2	2	0	0	7	1	8	0	0	0	0	0
Total	-	3,333	387	422	168	509	2,149	3,248	5	2	11	67	85	105	48	113	108	374	1	1	1	10	13

4. RESULTS OF SAMPLE PLOT SURVEY (VOLUME PER 0.4 ha)

(m^3)

Plot No.	Forest type	More than 10 cm of d.b.h. total	More than 41 cm of d.b.h. within 10 cm of d.b.h. total	More than 10 cm of d.b.h. wholesome tree					More than 10 cm of d.b.h. defective tree					More than 41 cm of d.b.h. within 10 cm of d.b.h. wholesome tree					More than 41 cm of d.b.h. within 10 cm of d.b.h. defective tree				
				A	B	C	D+E	Total	A	B	C	D+E	Total	A	B	C	D+E	Total	A	B	C	D+E	Total
1	M	33.81	15.51	7.48	0.15	8.22	16.68	32.53	0.40	0.00	0.00	0.88	1.28	5.71	0.00	3.31	5.74	14.76	0.00	0.00	0.00	0.75	0.75
2	M	20.49	9.96	4.21	4.76	6.37	5.15	20.49	0.00	0.00	0.00	0.00	0.00	1.90	3.51	3.65	0.90	9.96	0.00	0.00	0.00	0.00	0.00
3	M	18.82	7.73	5.35	0.75	8.15	4.17	18.42	0.00	0.09	0.00	0.31	0.40	2.08	0.75	4.74	0.00	7.57	0.00	0.00	0.00	0.16	0.16
4	B	16.45	0.68	0.00	0.19	2.02	13.92	16.13	0.00	0.00	0.00	0.32	0.32	0.00	0.00	0.00	0.68	0.68	0.00	0.00	0.00	0.00	0.00
5	A	18.78	8.72	3.19	3.38	4.20	8.01	18.78	0.00	0.00	0.00	0.00	0.00	0.72	2.93	2.99	2.08	8.72	0.00	0.00	0.00	0.00	0.00
6	A	35.92	21.82	5.89	5.31	7.00	14.82	33.02	0.11	0.00	0.04	2.75	2.90	4.11	3.16	5.93	7.50	20.70	0.00	0.00	0.00	1.12	1.12
7	A	27.18	12.46	9.52	0.92	3.46	12.23	26.13	0.00	0.00	0.02	1.03	1.05	5.44	0.00	2.49	3.71	11.64	0.00	0.00	0.00	0.82	0.82
8	A	36.01	24.51	12.78	7.33	4.99	10.21	35.31	0.00	0.00	0.33	0.37	0.70	10.33	5.78	2.75	5.65	24.51	0.00	0.00	0.00	0.00	0.00
9	A	25.02	12.85	6.41	4.59	5.81	7.30	24.11	0.91	0.00	0.00	0.00	0.91	3.16	3.48	3.86	1.44	11.94	0.91	0.00	0.00	0.00	0.91
10	M	30.81	17.21	7.00	2.17	5.24	16.40	30.81	0.00	0.00	0.00	0.00	0.00	4.89	1.93	2.58	7.81	17.21	0.00	0.00	0.00	0.00	0.00
11	A	26.69	16.41	3.75	2.52	3.35	16.87	26.49	0.00	0.00	0.00	0.20	0.20	1.83	0.86	2.18	11.54	16.41	0.00	0.00	0.00	0.00	0.00
12	A	32.21	21.84	6.40	9.56	6.19	9.10	31.25	0.00	0.00	0.00	0.96	0.96	4.60	9.00	4.02	3.28	20.90	0.00	0.00	0.00	0.94	0.94
13	A	27.15	14.05	10.07	1.86	4.21	10.06	26.20	0.49	0.00	0.00	0.46	0.95	9.04	0.84	2.80	0.91	13.59	0.00	0.00	0.00	0.46	0.46
14	M	23.87	13.95	4.80	3.82	6.69	6.42	21.73	0.00	0.97	0.72	0.45	2.14	3.20	2.61	5.69	1.48	12.98	0.00	0.97	0.00	0.00	0.97
15	A	32.22	15.35	11.99	3.29	7.23	9.49	32.00	0.00	0.00	0.00	0.22	0.22	6.68	2.25	3.07	3.35	15.35	0.00	0.00	0.00	0.00	0.00
16	M	31.09	13.34	13.46	3.64	4.35	9.64	31.09	0.00	0.00	0.00	0.00	0.00	7.32	2.54	2.69	0.79	13.34	0.00	0.00	0.00	0.00	0.00
17	A	24.37	9.95	11.06	0.67	5.74	6.76	24.23	0.00	0.00	0.00	0.14	0.14	7.52	0.00	2.43	0.00	9.95	0.00	0.00	0.00	0.00	0.00
18	A	33.12	20.79	13.22	8.73	5.35	5.82	33.12	0.00	0.00	0.00	0.00	0.00	9.00	8.38	3.41	0.00	20.79	0.00	0.00	0.00	0.00	0.00
19	A	31.48	16.19	4.54	3.68	9.23	12.64	30.09	0.00	0.00	0.88	0.51	1.39	3.37	2.72	6.12	3.10	15.31	0.00	0.00	0.88	0.00	0.88
20	A	46.47	30.53	3.17	5.52	18.60	18.56	45.85	0.00	0.00	0.00	0.62	0.62	1.81	4.18	15.72	8.82	30.53	0.00	0.00	0.00	0.00	0.00
21	M	21.69	10.54	3.54	0.19	9.63	8.10	21.69	0.00	0.00	0.00	0.23	0.23	2.08	0.00	7.84	0.62	10.54	0.00	0.00	0.00	0.00	0.00
22	A	36.45	14.96	10.69	1.78	9.20	14.73	36.40	0.00	0.00	0.00	0.05	0.05	3.89	0.00	5.81	5.26	14.96	0.00	0.00	0.00	0.00	0.00
23	M	32.25	15.30	7.44	1.52	9.22	13.87	32.05	0.00	0.00	0.11	0.09	0.20	5.33	0.87	6.02	3.08	15.30	0.00	0.00	0.00	0.00	0.00
24	M	30.00	9.57	4.27	6.50	5.83	13.10	29.70	0.00	0.00	0.00	0.30	0.30	1.89	4.85	0.91	1.92	9.57	0.00	0.00	0.00	0.00	0.00
25	M	20.80	8.13	3.56	1.63	2.71	10.13	18.03	0.00	0.00	0.00	2.77	2.77	1.45	0.92	1.52	1.77	5.66	0.00	0.00	0.00	2.47	2.47
26	M	35.11	23.83	5.93	7.91	6.36	14.38	34.58	0.00	0.00	0.00	0.53	0.53	4.18	7.73	3.52	8.40	23.83	0.00	0.00	0.00	0.00	0.00
27	M	26.10	13.87	6.24	1.77	5.13	12.56	25.70	0.00	0.00	0.00	0.40	0.40	5.32	0.67	2.99	4.89	13.87	0.00	0.00	0.00	0.00	0.00
28	A	26.55	15.17	6.38	1.79	5.67	11.95	25.79	0.00	0.00	0.00	0.76	0.76	4.33	1.18	3.43	5.70	14.64	0.00	0.00	0.00	0.53	0.53
29	M	26.85	8.65	3.07	0.54	5.02	16.71	25.34	0.00	0.00	0.21	1.30	1.51	0.78	0.00	2.76	4.68	8.22	0.00	0.00	0.00	0.43	0.43
30	M	35.06	17.24	7.20	3.96	12.33	11.49	34.98	0.00	0.00	0.00	0.08	0.08	5.11	3.22	7.77	1.14	17.24	0.00	0.00	0.00	0.00	0.00
31	B	13.75	2.37	2.16	0.20	3.36	7.92	13.64	0.00	0.00	0.07	0.04	0.11	0.00	0.00	0.48	1.89	2.37	0.00	0.00	0.00	0.00	0.00
32	M	26.19	10.21	1.26	0.63	12.73	11.41	26.03	0.00	0.00	0.00	0.16	0.16	0.00	0.00	9.20	1.01	10.21	0.00	0.00	0.00	0.00	0.00
Total	-	902.76	453.69	206.03	101.26	213.59	360.60	881.71	1.91	1.06	2.38	15.93	21.28	127.07	74.36	132.68	109.14	443.25	0.91	0.97	0.88	7.68	10.44

5. SUMMARY OF OBSERVED SPECIES

〔Class A〕

Spacies No.	Local Name	Family	Genus	Species
1	Cedro	Meliaceae	Cedrela	sp.
2	Guatambú	Rutaceae	Balfourodendron	riedelianum
3	Incienso	Leguminosae	Myrcarpus	frondosus
4	Kurupay	Leguminosae	Piptadenia	sp.
5	Lapacho	Bignoniaceae	Tabebuia	sp.
	Tajý			
6	Peterevý	Boraginaceae	Cordia	trichotoma
	Loro negro			
7	Taperyva guasú	Leguminosae	Ferreirea	spectabilis
	Taperyva			
8	Urunce y mi	Anacardiaceae	Astronium	urundeuva
9	Yvyrá ró	Leguminosae	Pterogine	sp.

〔Class B〕

Spacies No.	Local Name	Family	Genus	Species
17	Cancharana	Meliaceae	Cabralea	sp.
19	Kurupay rá	Leguminosae	Piptadenia	rigida
20	Laurel aju ý	Lauraceae	Ocotea	sp.
21	Laurel guaicá	Lauraceae	Nectandra	sp.
22	Tatajyvá	Moraceae	Clorophora	tinctoria
23	Timbó	Leguminosae	Enterolobium	contorticiliauum
24	Yvyrá peré	Leguminosae	Apvleia	praecos
25	Yvyrá pytá	Leguminosae	Peltophorum	dubium
27	Kurupay curú	Leguminosae	Piptadeniamacrocar	macrocarpa

〔Class C〕

Spacies No.	Local Name	Family	Genus	Species
37	Colita	Boraginaceae	Cordia	ecalyculata
38	Chipá rupá	Euphorbiaceae	Alchornea	sp.
39	Gua ja y ví	Boraginaceae	Patagonula	americana

42	Kupa ý	Leguminosae	Copaifera	sp.
43	Laurel canela	Lauraceae	Nectandra	sp.
44	Laurel hú	Lauraceae	Nectandra	sp.
46	Laurel sa y jú	Lauracear	Nectandra	sp.
47	Laurel	Lauracear	Nectandra	
49	Marme lero	Polygonaceae	Ruprechtia	sp.
	Yvyrá piú guasú			
51	Tata j yvá	Moraceae	Chlorophora	tinctoria
	Kai ka á y guá			
52	Urunde y pará	Anacardiaceae	Astonium	fraxinifolium
53	Yvá ró	Rosaceae	Prunus	sellovii
55	Yvyrá ovi	Rutaceae	Helietta	longifoliata
56	Yvyrá pepé	Leguminosae	Holocalyx	balansae
	Alecrin			
57	Zota caballo	Tiliaceae	Luehea	sp.
	Ka á ovetí			
	Ka á ovetí guasú			

〔Class D〕

Spacies No.	Local Name	Family	Genus	Species
77	Aguaí	Sapotaceae	Chrysophyllum	gonocarpum
82	Canelón	Myrsinaceae	Rapanea	sp.
	Canelón pytá			
84	Cedrillo	Meliaceae	Guarea	pohlii
85	Narania jai	Rutaceae	Citrus	sp.
	Naranja			
	Naranjita			
86	Tembetary	Rutaceae	Fagara	rhoifolia
	Tembetary hú			
	Kuratu rá			
89	Jagua rata ý	Sapindaceae	Cupania	vernalis
94	Kokú	Sapintaceae	Allophylus	edulis
96	Loro blanco	Malvaceae	Bastarcliopsis	densiflora

98	Mbavý	Flacourtiaceae	Banara	macrophylla
	Mbavý rá			
101	Pakurí	Guttiferae	Rhoedia	sp.
105	Para para ý	Araliaceae	Pentapanax	warmingianus
	Para para ý guasú			
	Pino rá			
107	Pykasú rembiú	Sapotaceae	Chrysophyllum	marginatum
	Paloma rembiú			
109	Sapirangý	Apocynaceae	Peschier	sp.
112	Tarumá	Verbenaceae	Vitex	cimosa
113	Ombu rá	Euphorbiaceae	Tetrorchidivm	rubrirenium
115	Ysapy ý morotí	Leguminosae	Machaerium	stipitatum
116	Ysapy ý pytá	Leguminosae	Machaerium	paraguarense
	Ysapy ý			
118	Yvá poro itý	Myrtaceae	Myrciaria	baporeti
120	Yvyrá jú	Leguminosae	Albizzia	hassleri
121	Yvyrá katú	Annonaceae	Xilopia	brasilensis
122	Yvyrá piú	Sapindaceae	Diatenopteryx	sorbifolia
	Maria preta			
124	Yvyrá taí	Rutaceae	Pilocarpus	pennatifolius

(Class E)

Spacies No.	Local Name	Family	Genus	Species
146	Ñuati arroyo	Achatocarpaceae	Achatocarpus	ohovatus
	Nuati hó			
148	Aratikú	Annonaceae	Rollinia	intermedia
	Aratikú guasú			
153	Ñangapiry	Myrtaceae	Eugenia	uniflera
	Arrai jan			
	Kai rainga			
	Typycha ka a tí			
	Tya jhaí			
	Yvyra kerozen			
	Yvyra jepiro			
	Cerolla			

154	Fumobraro Hui moneha	Solanaceae	Solanum	sp.
155	Guapo ý	Moraceae	Ficus	monckii
158	Guavi rá Guavi rá pytá	Myrtaceae	Cubmanesia	xantocarpa
159	Ingá	Leguminosae	Inga	sp.
162	Jukerí guasú Jakerí	Leguminosae	Acacia	glomerosa
164	Katigua Katigua pytá	Meliaceae	Trichilia	catigua
167	Mborevi ka á Mborevi rembiu	Rubiaceae	Rudgea	major
173	Ñandypá Ñandypá mí	Moraceae	Sorocea	conplandéi
177	Ñuati kurusú	Loganiaceae	Strychnos	brasilensis
183	Robo itá Yvyra itá	Leguminosae	Lonchocarpus	sp.
185	Samu hú	Bombacaceae	Chorisia	speciosa
186	Sangre de dragón	Euphorbiaceae	Croton	urucurana
190	Yvyra kambý	Euphorbiaceae	Sebastiana	brasiliensis
196	No Identificado	—	—	—
198	Pindó 216 Yvyrá Tanimbú	Palmaceae	Arecastrom	romanzofiomuas

[Bark Thickness] Table of Species Included in Each Group

Species No.	Local Name
	Group I
4	Kurupay
8	Urunde y mí
19	Kurupay rá
24	Yvyrá peré
25	Yvyrá pytá
39	Gua ja y ví
42	Kupa ý
43	Laurel canela
44	Laurel hú
47	Laurel
49	Marmelero
52	Urunde y pará
55	Yvyrá ovi
56	Yvyrá pepé
57	Zota caballo
82	Canelón
84	Cedrillo
85	Naranja jai
86	Tembetary
89	Jagua rata ý
94	Kokú
98	Mbavý

Species No.	Local Name
101	Pakurí
112	Tarumá
115	Ysapy ý morotí
116	Ysapy ý pytá
122	Yvyrá piú
154	Fumobrabo
155	Guapo ý
158	Guavi rá
162	Jukerí guasú
164	Katigua
177	Ñuati kurusú
186	Sangre de dragón
	Group II
2	Guatambú
3	Incienso
5	Lapacho
6	Peterevý
9	Yvyrá ró
17	Cancharana
21	Laurel guaicá
23	Timbó
27	Kurupay curú

Species No.	Local Name
37	Colita
38	Chipá rupá
46	Laurel sa y jú
51	Tata jyvá
53	Yvá ró
77	Aguaí
96	Loro blanco
107	Pykasú rembiú
109	Sapirangý
113	Ombu rá
118	Yvá poroitý
120	Yvá jú
121	Yvyrá katú
124	Yvyrá taí
146	Nuati arroyo
148	Aratikú
159	Ingá
167	Mborebi ka á
173	Ñandypá
183	Robo itá
196	No Idefificado
198	Pindó
216	Yvyrá tanimbú

Species No.	Local Name
	Group III
20	Laurel aju ý
105	Para para ý
153	Ñangapiry
	Group IV
1	Cedro
7	Taperyva guasú
22	Tatajyvá
185	Samu hú
190	Yvyrá Kambý

6. NO. OF TREES BY PLOTS, BY SPECIES (per ha, includes defective trees)

Species No.	Local name \ Plot No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Total
	A Class																																	
1	Cedro		7.5	7.5		5.0	5.0	2.5	7.5	7.5	5.0	2.5	5.0	7.5	5.0	7.5	12.5	10.0			2.5		10.0			2.5	2.5	7.5	7.5			2.5	2.5	135.0
2	Guatambú	22.5	22.5	20.0		20.0	22.5	25.0	15.0	17.5	20.0	5.0	20.0	17.5	12.5	25.0	25.0	25.0	42.5	7.5	12.5	10.0	32.5	20.0	12.5	32.5	12.5	22.5	17.5	20.0	30.0	27.5	2.5	617.5
3	Incienso			2.5												2.5	5.0																	10.0
4	Kurupay					7.5		12.5	20.0	10.0		2.5	2.5	17.5	10.0	10.0	12.5	2.5	2.5	5.0	2.5		2.5	2.5	2.5		2.5		5.0	2.5	2.5			137.5
5	Lapecho	7.5						10.0					2.5	2.5		5.0	2.5			5.0			2.5	5.0	2.5	2.5	2.5				5.0		5.0	60.0
6	Peterevý	2.5		2.5			5.0		5.0		2.5	5.0	2.5		2.5	2.5		5.0	2.5	2.5		2.5	2.5		2.5	2.5	7.5		5.0	5.0		5.0	2.5	75.0
7	Taperyva guasú							2.5																										2.5
8	Urunde y mí							2.5					2.5	2.5																				7.5
9	Yvyrá ró							5.0	2.5							2.5		2.5	2.5	2.5		2.5				2.5								22.5
	B Class																																	
17	Cancharana	2.5	25.0			5.0	17.5	7.5	10.0	2.5	5.0	10.0	15.0	12.5	15.0	7.5	20.0	5.0	2.5	7.5	22.5	2.5	10.0	7.5	7.5	7.5	2.5	12.5	2.5	2.5	15.0	2.5	2.5	267.5
19	Kurupay rá		5.0										2.5		2.5												7.5					5.0	22.5
20	Laurel aju ý		2.5		2.5						2.5	2.5														5.0				2.5	2.5			20.0
21	Laurel guaicá		2.5	2.5			7.5	2.5	2.5												2.5						7.5							27.5
22	Tatajyvá																		2.5															2.5
23	Timbó					5.0				2.5			2.5																					10.0
24	Yvyrá peré				2.5					7.5		5.0			2.5	2.5			2.5	2.5	2.5				10.0	2.5								40.0
25	Yvyrá pytá					5.0			5.0		2.5		2.5			2.5			2.5				2.5	2.5	2.5				2.5					30.0
27	Kurupay curú			2.5																									2.5					5.0
	C Class																																	
37	Colita											2.5																						2.5
38	Chipá rupá		10.0			15.0	2.5						5.0	5.0	2.5																			40.0
39	Gua jay ví	2.5	10.0			2.5			5.0		7.5				2.5	5.0			7.5	5.0	2.5	2.5	15.0	10.0	7.5	2.5	10.0				20.0		2.5	120.0
42	Kupa ý																2.5																7.5	10.0
43	Laurel canela			2.5							2.5						2.5					2.5	2.5		2.5	2.5	2.5	5.0		10.0	2.5	5.0	17.5	60.0
44	Laurel hú	22.5	20.0	17.5	15.0	10.0	15.0	10.0	10.0	20.0	5.0	10.0	27.5	15.0	7.5	20.0	17.5	12.5	2.5	15.0	22.5	15.0	12.5	15.0	5.0	7.5	20.0	7.5	12.5	7.5	10.0	15.0	5.0	427.5
46	Laurel sa y jú	5.0	2.5	2.5			12.5	2.5	2.5					2.5	5.0		2.5									2.5			2.5		2.5			45.0
47	Laurel								2.5	7.5		2.5	5.0	2.5		2.5			5.0								10.0							37.5
49	Marmelero																		2.5															2.5
51	Tata j yvá											2.5							2.5			2.5							2.5		5.0	2.5		17.5
52	Urunde y pará			2.5			5.0	2.5	2.5	2.5		2.5	7.5	10.0	7.5		5.0	7.5	15.0	7.5	15.0	12.5	5.0	2.5		5.0	5.0	2.5	10.0	5.0	12.5	5.0	2.5	160.0
53	Yvá ró			2.5	2.5			2.5								5.0		5.0		2.5	2.5	2.5	2.5		2.5				2.5		2.5	2.5		37.5
55	Yvyrá ovi				2.5																			5.0	7.5	12.5				5.0	2.5	7.5		42.5

6. (continued)

Species No.	Local name \ Plot No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Total
56	Yvyrá pepé	300	27.5	22.5		12.5		5.0	5.0	2.5	30.0				5.0	27.5		17.5	7.5	7.5	5.0		10.0	17.5	10.0		15.0	5.0	2.5	2.5	5.0	2.5	2.5	277.5
57	Zota caballo																							2.5	5.0	2.5							10.0	20.0
	D Class																																	
77	Aguaí	35.0	47.5	32.5		40.0	27.5	37.5	47.5	47.5	35.0	37.5	40.0	55.0	22.5	27.5	27.5	27.5	22.5	27.5	32.5	52.5	20.0	32.5	25.0	20.0	42.5	40.0	57.5	17.5	47.5	25.0	17.5	1067.5
82	Canelón				2.5			2.5	2.5	2.5	10.0	2.5		5.0	5.0	2.5	7.5	5.0	5.0	7.5	15.0	7.5	5.0		2.5	5.0			5.0	10.0	7.5	5.0		122.5
84	Cedrillo					2.5									2.5			7.5	10.0	2.5		5.0				10.0		5.0			2.5		2.5	50.0
85	Naranja jat			2.5																														2.5
86	Tembetary									2.5												2.5											2.5	7.5
89	Jagua rata ý		2.5		5.0	12.5	2.5	5.0	2.5	5.0	5.0		2.5	7.5	2.5	7.5		5.0	7.5	2.5		2.5	10.0	2.5			2.5	10.0		2.5	5.0	10.0		120.0
94	Koku	5.0		2.5		12.5	2.5	2.5			5.0		2.5					2.5	2.5		5.0		10.0	2.5	2.5	2.5	2.5	7.5	2.5		7.5	12.5	2.5	95.0
96	Loro blanco						7.5	2.5	2.5	2.5		12.5	2.5	2.5		2.5	2.5	5.0	2.5	2.5	10.0	7.5				7.5	2.5	5.0	25.0	25.0	2.5	12.5	7.5	152.5
98	Mbavy				5.0			5.0	5.0	2.5	5.0		5.0		2.5	7.5	2.5	2.5	15.0	2.5	2.5	10.0				2.5	5.0	2.5		2.5	7.5	2.5		95.0
101	Pakuríí			2.5		5.0							5.0	5.0	2.5			5.0	10.0	22.5	7.5	5.0				2.5		12.5	12.5	17.5	25.0	30.0		170.0
105	Para para ý						2.5																						2.5					5.0
107	Pykasú rembiú		5.0	2.5										2.5														2.5		2.5	2.5			17.5
109	Sapirangý							2.5										2.5												2.5				7.5
112	Tarumá				2.5																					2.5								5.0
113	Ombu rá							5.0	2.5	2.5	7.5	5.0					5.0										2.5				2.5	5.0		37.5
115	Ysapy ý morotí	12.5	2.5	7.5	5.0	12.5	2.5	12.5	2.5	7.5		17.5	5.0		17.5	10.0	12.5	12.5		5.0	2.5	5.0	12.5		6.0	10.0	2.5	2.5	15.0	5.0	2.5		7.5	215.0
116	Ysapy ý pytá	2.5	2.5		12.5		5.0		7.5						2.5		2.5		7.5					10.0	7.5	2.5					5.0			67.5
118	Yvá porotý	122.5	7.5	17.5	140.0	22.5		60.0	10.0	2.5	42.5				10.0	47.5	40.0	7.5	35.0					67.5	67.5	100.0	60.0	40.0	22.5	2.5	185.0	50.0	42.5	87.5	1290.0
120	Yvá jú									7.5									2.5															10.0
121	Yvyrá katú				2.5																											5.0		7.5
122	Yvyrá piu	10.0	5.0	2.5	42.5	15.0		12.5	10.0		10.0		10.0			10.0	5.0	2.5		2.5		2.5	7.5	20.0	17.5	17.5	10.0	5.0		15.0	2.5		200	255.0
124	Yvyrá taí										2.5				5.0		2.5									2.5	2.5							15.0
	E Class																																	
146	Ñuati arroyo				65.0			12.5	5.0	2.5			2.5			22.5	17.5	15.0	5.0	2.5	2.5	7.5	7.5	25.0		10.0	15.0	2.5	2.5	7.5	2.5	10.0	7.5	250.0
148	Aratikú																											2.5					2.5	5.0
153	Ñangapiry	7.5			65.0		2.5	10.0			7.5					5.0	7.5	5.0	2.5	7.5	5.0		2.5	17.5	2.5	10.0	2.5			5.0		2.5		167.5
154	Fumobraro										2.5																							2.5
155	Guapo ý						17.5			2.5		17.5	10.0	2.5	2.5					5.0	22.5					2.5			17.5		7.5			107.5
158	Guavi rá	10.0	15.0	2.5		10.0	2.5	20.0	20.0	5.0	10.0		5.0	2.5		2.5	7.5	15.0	5.0	5.0	7.5	2.5	15.0	15.0	12.5	2.5	7.5	2.5	2.5	2.5	12.5	7.5		227.5
159	Ingá						2.5					5.0	17.5		7.5	2.5			5.0		10.0							2.5	2.5			2.5		57.5
162	Jukerí guasú		2.5																											2.5		2.5		7.5

6. (concluded)

Species No.	Local name \ Plot No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Total
164	Katigua		5.0	2.5		7.5	5.0				5.0				2.5	7.5	15.0	10.0	7.5			2.5	10.0			5.0	20.0	5.0	2.5		17.5	7.5		137.5
167	Mborevi ka á	2.5	2.5	7.5			60.0			10.0		7.5	50.0	30.0	27.5			5.0	30.0	60.0	62.5	57.5						35.0	10.0	7.5	5.0	12.5		482.5
173	Ñandypá			2.5		5.0	2.5							2.5																				12.5
177	Ñuati kurusú	5.0		2.5		2.5			2.5		2.5				2.5									5.0	5.0						2.5			30.0
183	Robo ità		10.0		2.5	7.5	7.5				12.5	2.5	5.0	5.0	5.0		7.5		7.5	10.0			7.5	5.0	2.5	7.5	17.5	5.0	2.5	2.5	7.5		5.0	145.0
185	Samu hú	2.5		2.5				7.5		2.5		2.5	2.5	7.5	2.5	2.5		7.5	2.5	2.5	7.5		2.5			2.5					2.5			60.0
186	Sangre de dragór		7.5																															7.5
190	Yvyra Kambý																								2.5					5.0				7.5
196	No Identificado																									2.5				10.0				12.5
198	Pindó						2.5																											2.5
216	Yvyrá tanimbú						2.5																											2.5
	Total	310.0	250.0	177.5	375.0	242.5	247.5	290.0	215.0	185.0	245.0	162.5	267.5	222.5	202.5	285.0	270.0	235.0	287.5	237.5	285.0	225.0	287.5	292.5	265.0	280.0	282.5	232.5	237.5	390.0	345.0	272.5	230.0	8332.5

7. VOLUME BY PLOTS, BY SPECIES (per ha, without bark, exludes defective trees)

(Unit: m^3)

Species No.	Plot No. / Local name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Total
	A Class																																	
1	Cedro		2.33	3.21		1.18	0.48	3.08	2.71	1.49	2.26	1.73	1.78	2.16	1.16	4.93	6.01	2.53			1.18		4.83			0.40	1.43	1.01	3.03			0.78	0.33	30.03
2	Guatambú	12.67	8.23	8.34		5.17	13.84	5.64	10.08	9.65	14.19	4.58	7.34	12.27	1.31	6.65	10.22	18.58	27.92	7.33	6.34	7.51	16.56	8.79	6.74	5.96	9.17	14.62	10.62	5.70	11.92	3.99	0.20	292.13
3	Incienso			1.65												0.08	5.01																	6.74
4	Kurupay					1.66		4.96	16.46	4.94		2.15	2.48	10.54	8.73	15.66	10.35	2.85	1.45	2.76	0.43		3.80	6.35	1.43		0.78		2.13	0.35	5.80			106.06
5	Lapacho	4.48						3.73					3.85	0.25		1.11	2.13			0.33			0.95	3.48	0.63	0.13	1.60				0.33		2.11	25.11
6	Peterevý	1.58		0.20			0.43		0.30		1.08	0.93	0.45		0.83	1.20		3.05	0.43	0.53		0.63	0.63		1.90	1.75	1.89		0.20	1.65		0.65	0.53	20.84
7	Taperyva guasú							2.23																										2.23
8	Urunde y mí							0.23					0.13																					0.36
9	Yvyrá ró							3.98	2.43							0.40		0.68	3.28	0.43		0.73				0.70								12.63
	B Class																																	
17	Cancharana	0.38	5.05			0.38	4.90	2.21	3.76	0.48	0.55	3.24	7.81	4.66	7.13	1.98	9.13	1.68	7.38	4.41	11.25	0.48	3.64	3.03	3.06	0.60	0.05	4.45	0.63	1.13	9.53	0.50	0.20	103.68
19	Kurupay rá		4.26										0.23		0.10												13.58						1.38	19.55
20	Laurel aju ý		2.58		0.43						0.05	0.20														1.18				0.23	0.38			5.05
21	Laurel guaicá		0.05				8.41	0.10	0.13												2.45						6.16							17.30
22	Tatajyvá																		0.20															0.20
23	Timbó					6.70				8.70			5.90																					21.3
24	Yvyrá peré				0.05					12.31		2.88			2.33	0.63			0.68	4.80	0.13				5.53	2.30								21.64
25	Yvyrá pytá					1.38			14.45		4.83		9.98			5.63			13.58				0.83	0.78	7.68				2.95					62.09
27	Kurupay curú			1.88																									0.90					2.78
	C Class																																	
37	Colita											0.10																						0.10
38	Chipá rupá		1.73			5.59	0.30						3.66	2.98	0.55																			14.81
39	Gua ja y ví	2.13	5.04			0.13			2.70		4.31					4.55			2.36	2.05	2.63	2.00	9.26	7.01	5.11	2.05	4.22				8.51		2.60	66.66
42	Kupa ý																3.85																7.46	11.31
43	Laurel canela			0.38							0.25						0.60					0.48	0.53		0.85	0.10	0.08	1.63		3.14	0.50	1.38	10.08	20.00
44	Laurel hú	4.53	3.76	5.17	4.34	2.18	4.87	2.65	4.79	4.99	0.70	2.44	4.13	1.74	0.18	4.70	2.93	6.71	0.75	9.94	8.14	4.58	2.94	3.51	1.63	0.34	4.31	6.55	2.84	2.16	1.18	3.16	5.90	118.74
46	Laurel sa y jú	1.25	0.10	0.10			2.91	0.88						0.35	0.33		0.35									0.18			0.18		0.53			8.16
47	Laurel								2.75	0.91		0.20	0.10	0.15		0.68			0.26																5.55
49	Marmelero																		1.80																1.80
51	Tata j yvá											0.20							0.98			2.75							0.13		0.56	0.05		4.67
52	Urunde y pará			5.45			9.46	0.63	1.15	8.38		5.45	7.63	5.33	11.48		3.16	1.41	6.87	3.93	28.91	11.56	0.83	0.68		0.35	1.81	3.33	10.03	5.36	15.45	0.80	2.60	152.04
53	Yvá ró			0.48	0.20			2.30								0.85		1.18			0.35	2.73	4.03		0.95				0.93		0.30	2.08		14.38
55	Yvyrá ovi				0.53																			1.03	2.46	3.61				1.23	1.48	2.23		12.57

7. (continued)

Species No.	Plot No. / Local name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Total
56	Yvyrá pepé	12.69	5.35	7.87		2.63		2.21	1.11	0.28	7.89				4.20	7.37		5.09	0.41	7.19	6.51		5.46	9.72	1.39		5.06	1.33	0.10	0.70	2.38	0.73	0.30	97.97
57	Zota caballo																							1.15	2.23	0.18							2.93	6.49
	D Class																																	
77	Aguaí	6.98	2.63	5.90		4.44	6.22	4.10	8.45	6.28	7.66	4.81	6.97	13.89	3.18	3.20	5.88	3.42	2.81	3.66	8.38	9.85	3.16	4.17	3.55	2.00	3.93	6.26	4.39	2.17	7.98	2.55	3.04	161.91
82	Canelón				0.10			0.13	0.05	0.13	0.56	0.05		1.01	0.75	0.05	0.55	0.26	0.30	1.06	3.06	0.54	0.10			0.88			0.36	1.03	0.54	0.90		12.41
84	Cedrillo					0.03												0.33	0.34	0.05		0.11				0.66		0.18			0.13		0.18	2.01
85	Naranja jai			0.05																														0.05
86	Tembetary									0.43												0.70											1.00	2.13
89	Jagua rata ý		0.03		1.80	2.09	0.08	0.35	0.05	0.35	0.98		0.15	1.53	0.05	0.66		0.91	0.38	0.15		0.20	1.99	0.80			2.40	1.38		0.13	0.26	0.31		17.03
94	Kokú	0.20		0.18		0.98	0.05	0.05			0.40		0.35					0.10	0.18		0.23		1.48	0.25	0.38	0.25	0.08	0.28	0.13		0.44	0.59	0.10	6.70
96	Loro blanco						2.75	0.63		2.28		9.76	0.25			0.40	0.70	1.55	0.43	0.85	2.43	2.00				5.89	0.25	4.20	7.00	10.55	1.25	4.36	2.55	59.78
98	Mbavý				0.75			0.18	0.13	0.33	0.20		0.43		0.10	0.51	0.08	0.35	0.78	0.20		1.34				0.90	0.50	0.65		0.35	0.71	0.25		8.74
101	Pakurí			0.35		0.28							0.20	0.28	0.70			0.43	0.87	5.04	1.13	0.56				0.03		1.82	1.73	1.92	1.76	3.03		20.13
105	Para para ý						4.43																						6.55					10.98
107	Pykasú rembiú		0.38	0.15										0.98														0.10		0.18	0.08			1.87
109	Sapirangý							0.58										0.33												0.13				1.04
112	Tarumá				1.70																					0.38								2.08
113	Ombu rá							1.95	2.18	0.63	2.58	1.06					1.76										0.18				0.68	0.71		11.73
115	Yspy ý morotí	4.51	0.23	0.45	0.35	1.76	1.43	3.04	0.08	0.81		2.02	0.51		2.41	1.51	3.25	1.28		1.28	0.08	0.25	1.26		0.68	0.56	0.30	1.28	3.80	0.61	0.83		1.33	35.90
116	Ysapy ý pytá	0.55	1.00		2.41		2.78		1.13						0.23		0.43		0.80					1.09	0.86	0.13					0.83			12.24
118	Yvá poroity	13.74	0.61	1.97	10.90	1.32		4.72	0.69	0.18	7.09				0.43	3.92	3.53	1.43	2.99				7.81	9.84	12.06	5.75	2.97	1.85	0.08	16.43	6.39	2.71	10.19	129.60
120	Yvá jú									3.73									0.45															4.18
121	Yvyrá katú				0.10																											2.70		2.80
122	Yvyrá piu	10.58	2.38		7.26	5.17		5.41	10.13		4.75		4.80			9.81	1.55	0.58		5.45		0.23	4.66	10.23	9.92	4.34	7.06	1.48		5.57	0.23		7.55	119.14
124	Yvyrá taí										0.05				0.28		0.03									0.03	0.05							0.44
	E Class																																	
146	Ñuati arroyo				5.61			0.99	0.58	0.23			0.13			1.64	2.77	1.41	0.40	0.13	0.45	1.06	5.63	3.33		0.66	3.59	0.30	0.65	0.36	0.23	0.26	0.68	31.09
148	Aratikú																											6.73					0.25	6.98
153	Ñangapiry	0.96			3.20		1.48	1.01			1.98					0.53	0.83	0.91	0.38	0.88	2.28		1.43	1.26	0.48	0.41	0.10			0.25		0.45		18.82
154	Fumobraro										0.03																							0.03
155	Guapo ý						8.27			0.88		12.27	0.34	0.30	0.30					1.66	13.78								4.54		2.13			44.47
158	Guavi rá	2.11	1.22	0.13		1.44		2.11	2.04	0.58	4.47		0.11	0.58		0.40	0.43	0.89	0.30	0.18	3.20	0.05	4.52	1.87	3.52	0.25	2.91	0.05	0.10	0.20	1.40	0.38		35.44
159	Ingá						0.30					6.41	1.42		1.23	0.18			0.33		0.77							0.08	0.10			0.08		10.90
162	Jukerí guasú		0.10																											0.25		0.30		0.65

7. (concluded)

Species No. / Local name \ Plot No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Total
164 Katigua		0.25	0.13		0.11	1.08				008				013	021	045	0.27	0.21			0.08	0.23			0.25	0.42	0.33	0.08		0.77	0.16		5.24
167 Mborevi ka á	0.13	003	0.28			5.69			0.55		0.29	490	2.06	1.10			0.15	1.56	4.31	5.80	346						2.14	0.39	0.41	0.18	0.26		3369
173 Nandypá			008		016	005							008																				037
177 Nuati kurusú	0.38		0.10		010			013		048				0.18									1.03	1.25									3.65
183 Robo itá		3.35		093	2.31	098				9.83	2.10	1.81	2.13	4.25		2.03		0.85	6.19			4.16	0.98	0.15	1.38	11.34	2.45	0.13	0.85	1.43		2.11	61.74
185 Samu hú	1.75		0.75				5.49		095		3.53	0.53	2.14	0.83	0.85		2.43	0.38	0.68	4.99		0.55			0.43					0.70			27.28
186 Sangre de dragón		0.79																															079
190 Yvyra kamby																								010					023				033
196 No Identificado																									033				049				082
198 Pindó						060																											060
216 Yvyrá tanimbu						098																											098
217 Defective trees	3.21	-	1.01	0.80	-	7.27	2.64	1.76	2.28	-	0.51	2.40	2.38	5.38	0.55	-	0.35	-	3.48	1.56	0.58	0.13	0.51	0.75	6.93	1.33	1.00	1.91	3.80	0.21	0.28	0.40	53.41
Total	84.81	51.48	47.26	41.46	47.19	90.04	68.21	90.22	62.75	77.25	66.91	80.77	68.09	59.86	80.84	78.01	61.14	83.09	78.95	116.46	54.46	91.40	80.89	75.29	52.27	88.05	65.48	66.61	67.56	88.01	34.63	65.70	2265.14

8. NO. OF TREES BY PLOT, BY DIAMETER GRADE, BY CLASS (per ha)

Forest type M — Plot No. 1

(Unit: diameter cm)

Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	10.0	2.5	5.0	7.5	5.0						30.0
B		2.5									2.5
C	12.5	17.5	22.5	5.0		2.5					60.0
D	82.5	75.0	15.0	5.0		2.5	2.5				182.5
E	10.0	12.5	2.5	2.5							27.5
Defective trees		2.5	2.5	2.5							7.5
Total	115.0	112.5	47.5	22.5	5.0	5.0	2.5				310.0

Forest type M — Plot No. 2

Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	10.0	5.0	10.0	2.5	2.5						30.0
B	10.0	10.0	5.0	2.5	5.0	2.5					35.0
C	27.5	17.5	10.0	7.5	2.5	2.5	2.5				70.0
D	50.0	15.0	5.0		2.5						72.5
E	25.0	5.0	10.0	2.5							42.5
Defective trees											
Total	122.5	52.5	40.0	15.0	12.5	5.0	2.5				250.0

Forest type M — Plot No. 3

Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	5.0	10.0	10.0	7.5							32.5
B				2.5							2.5
C	12.5	15.0	12.5	5.0	2.5	2.5					50.0
D	32.5	22.5	10.0								65.0
E	15.0		2.5								17.5
Defective trees	5.0	2.5		2.5							10.0
Total	70.0	50.0	35.0	17.5	2.5	2.5					177.5

Forest type B — Plot No. 4

Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A											
B	2.5	2.5									5.0
C	2.5	12.5	5.0								20.0
D	125.0	67.5	20.0	2.5							215.0
E	100.0	22.5	7.5								130.0
Defective trees	2.5	2.5									5.0
Total	232.5	107.5	32.5	2.5							375.0

Forest type A — Plot No. 5

Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	12.5	7.5	10.0	2.5							32.5
B	5.0		2.5	5.0			2.5				15.0
C	16.5	5.0	5.0	7.5	5.0						40.0
D	52.5	50.0	12.5	5.0	2.5						122.5
E	20.0	2.5	7.5		2.5						32.5
Defective trees											
Total	107.5	65.0	37.5	20.0	10.0		2.5				242.5

Forest

Plot No.	6	type	A								
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	12.5	7.5	2.5	2.5	5.0						30.0
B	5.0	10.0	7.5				2.5				25.0
C	10.0	7.5	2.5	7.5	2.5		2.5				32.0
D	15.0	7.5	12.5	7.5		2.5					45.0
E	50.0	22.5	10.0	7.5	5.0						95.0
Defective trees	5.0	2.5	7.5	2.5	2.5						20.0
Total	97.5	57.5	42.5	27.5	15.0	2.5	5.0				247.5

Forest

Plot No.	7	type	A								
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	20.0	12.5	12.5	10.0	5.0						60.0
B	5.0		5.0								10.0
C	5.0	5.0	2.5	5.0	2.5						20.0
D	62.5	57.5	12.5	2.5	2.5						137.5
E	22.5	22.5		5.0							50.0
Defective trees	5.0	5.0			2.5						12.5
Total	120.0	102.5	32.5	22.5	12.5						290.0

Forest

Plot No.	8	type	A								
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	150	2.5	10.0	15.0	5.0	2.5					50.0
B	2.5	2.5	7.5				5.0				17.5
C	50		12.5	5.0	2.5						25.0
D	400	22.5	12.5	5.0	5.0		2.5				87.5
E	100	15.0									25.0
Defective trees	2.5	2.5	5.0								10.0
Total	75.0	45.0	47.5	25.0	12.5	2.5	7.5				215.0

Forest

Plot No.	9	type	A								
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	5.0	12.5	7.5	2.5	5.0						32.5
B	2.5	2.5	5.0				2.5				12.5
C	7.5	15.0	5.0	2.5			2.5				32.5
D	42.5	27.5	7.5	2.5	2.5						82.5
E	10.0	10.0	2.5								22.5
Defective trees					2.5						2.5
Total	67.5	67.5	27.5	7.5	10.0		5.0				185.0

Forest

Plot No.	10	type	M								
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	2.5	10.0	5.0	5.0	5.0						27.5
B	5.0	2.5				2.5					10.0
C	20.0	15.0	5.0		5.0						45.0
D	65.0	30.0	20.0	5.0	2.5						122.5
E	17.5	5.0	5.0	7.5	2.5	2.5					40.0
Defective trees											
Total	110.0	62.5	35.0	17.5	15.0	5.0					245.0

8. (continued)

Forest type A

Plot No. 11											
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	2.5	2.5	5.0	5.0							15.0
B	2.5	7.5	5.0	2.5							17.5
C	10.0	2.5	5.0			2.5					20.0
D	20.0	37.5	5.0	5.0	2.5						70.0
E	7.5	2.5	7.5	10.0	7.5						35.0
Defective trees		2.5	2.5								5.0
Total	42.5	55.0	30.0	22.5	10.0	2.5					162.5

Forest type A

Plot No. 12											
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	12.5	7.5	5.0	7.5	2.5						35.0
B	5.0	5.0		5.0	2.5		2.5		2.5		22.5
C	22.5	2.5	7.5	10.0	2.5						45.0
D	30.0	27.5	2.5	5.0	2.5						67.5
E	67.5	20.0	2.5	2.5							92.5
Defective trees	2.5				2.5						5.0
Total	140.0	62.5	17.5	30.0	12.5		2.5		2.5		267.5

Forest type A

Plot No. 13											
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	17.5	2.5	2.5	12.5	2.5	5.0					42.5
B	2.5	5.0	2.5	2.5							12.5
C	12.5	10.0	2.5	10.0							35.0
D	15.0	32.5	25.0	2.5							75.0
E	27.5	15.0	7.5								50.0
Defective trees	2.5		2.5			2.5					7.5
Total	77.5	65.0	42.5	27.5	2.5	7.5					222.5

Forest type M

Plot No. 14											
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	12.5	12.5		2.5		2.5					30.0
B	2.5	2.5	5.0	5.0	2.5						17.5
C	7.5	2.5	2.5		2.5	5.0					20.0
D	35.0	22.5	5.0								62.5
E	32.5	10.0	2.5		2.5						47.5
Defective trees	10.0	10.0	2.5		2.5						25.0
Total	100.0	60.0	17.5	7.5	10.0	7.5					202.5

Forest type A

Plot No. 15											
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	12.5	20.0	15.0	2.5		2.5	2.5				55.0
B	2.5	5.0	2.5			2.5					12.5
C	17.5	25.0	10.0	5.0		2.5					60.0
D	75.0	22.5	7.5	2.5	2.5	2.5					112.5
E	30.0	10.0	2.5								42.5
Defective trees			2.5								2.5
Total	137.5	82.5	40.0	10.0	2.5	10.0	2.5				285.0

8. (continued)

Forest type M

Plot No. 16											
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	7.5	12.5	20.0	15.0	2.5						57.5
B	5.0	5.0	5.0	2.5	2.5						20.0
C	7.5	17.5		2.5	2.5						30.0
D	62.5	25.0	17.5	2.5							107.5
E	30.0	22.5	2.5								55.0
Defective trees											
Total	112.5	82.5	45.0	22.5	7.5						270.0

Forest type A

Plot No. 17											
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	5.0	17.5	7.5	10.0	2.5		2.5				45.0
B	2.5		2.5								5.0
C	7.5	20.0	7.5	5.0	2.5						42.5
D	47.5	27.5	7.5								82.5
E	42.5	7.5	7.5								57.5
Defective trees		2.5									2.5
Total	105.0	75.0	32.5	15.0	5.0		2.5				235.0

Forest type A

Plot No. 18											
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	10.0	12.5	15.0	5.0	2.5	2.5	2.5				50.0
B	2.5	2.5					2.5	2.5			10.0
C	15.0	15.0	5.0	5.0	2.5						42.5
D	87.5	30.0	2.5								120.0
E	47.5	17.5									65.0
Defective trees											
Total	162.5	77.5	22.5	10.0	5.0	2.5	5.0	2.5			287.5

Forest type A

Plot No. 19											
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	7.5	7.5	2.5	2.5		2.5					22.5
B			5.0	2.5		2.5					10.0
C		12.5	12.5	2.5	2.5	2.5	2.5				35.0
D	30.0	27.5	10.0			2.5					70.0
E	62.5	10.0	12.5	2.5							87.5
Defective trees	5.0	5.0		2.5							12.5
Total	105.0	62.5	42.5	12.5	2.5	10.0	2.5				237.5

Forest type A

Plot No. 20											
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	2.5	5.0	5.0	5.0							17.5
B	5.0	10.0	2.5	7.5	2.5						27.5
C	12.5	5.0	10.0	7.5		5.0	7.5				47.5
D	15.0	40.0	7.5	5.0							67.5
E	65.0	25.0	12.5	10.0	2.5		2.5				117.5
Defective trees		5.0	2.5								7.5
Total	100.0	90.0	40.0	35.0	5.0	5.0	10.0				285.0

8. (continued)

Forest

Plot No.	21	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	2.5	5.0	5.0			2.5					15.0
B		2.5									2.5
C	7.5	7.5	5.0	7.5	10.0						37.5
D	40.0	40.0	12.5	2.5							95.0
E	60.0	7.5	2.5								70.0
Defective trees		2.5	2.5								5.0
Total	110.0	65.0	27.5	10.0	10.0	2.5					225.0

Forest

Plot No.	22	type	A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	2.5	20.0	20.0	2.5	5.0						50.0
B	2.5	5.0	5.0								12.5
C	5.0	17.5	10.0	7.5	7.5						47.5
D	57.5	67.5	2.5	5.0							132.5
E	12.5	15.0	7.5	5.0		2.5					42.5
Defective trees	2.5										2.5
Total	82.5	125.0	45.0	20.0	12.5	2.5					287.5

Forest

Plot No.	23	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	5.0	5.0	7.5	7.5			2.5				27.5
B		7.5		2.5							10.0
C	12.5	20.0	5.0	5.0	7.5						50.0
D	67.5	42.5	15.0	5.0		2.5					132.5
E	35.0	30.0	2.5								67.5
Defective trees	2.5	2.5									5.0
Total	122.5	107.5	30.0	20.0	7.5	2.5	2.5				292.5

Forest

Plot No.	24	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	2.5	5.0	7.5	5.0							20.0
B	2.5	5.0	5.0	5.0				2.5			20.0
C	7.5	12.5	17.5	2.5							40.0
D	80.5	60.0	12.5	2.5	2.5						157.5
E	7.5	12.5	5.0								25.0
Defective trees		2.5									2.5
Total	100.0	97.5	47.5	15.0	2.5			2.5			265.0

Forest

Plot No.	25	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	25.0	10.0	2.5	5.0							42.5
B	7.5	5.0		2.5							15.0
C	22.5	7.5		5.0							35.0
D	87.5	40.0	10.0			2.5					140.0
E	27.5	12.5									40.0
Defective trees	2.5	2.5						2.5			7.5
Total	172.5	77.5	12.5	12.5		2.5		2.5			280.0

8. (continued)

Forest

Plot No.	26	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	7.5	2.5	5.0	10.0	2.5						27.5
B	2.5	2.5		2.5	2.5	5.0	2.5				17.5
C	30.0	15.0	7.5	2.5	5.0	2.5					62.5
D	52.5	35.0	10.0	5.0			2.5				105.0
E	30.0	7.5	5.0	20.0							62.5
Defective trees		5.0	2.5								7.5
Total	122.5	67.5	30.0	40.0	10.0	7.5	5.0				282.5

Forest

Plot No.	27	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	17.5	5.0			5.0	2.5					30.0
B		5.0	5.0		2.5						12.5
C	2.5	2.5	10.0	2.5	2.5						20.0
D	62.5	30.0	12.5	2.5		2.5					110.0
E	40.0	7.5	5.0				2.5				55.0
Defective trees	2.5		2.5								5.0
Total	125.0	50.0	35.0	5.0	10.0	5.0	2.5				232.5

Forest

Plot No.	28	type	A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	15.0	7.5	5.0	2.5	2.5	2.5					35.0
B		2.5	2.5	2.5							7.5
C	12.5	7.5	7.5	2.5		2.5					32.5
D	80.0	22.5	7.5	2.5	2.5	2.5					117.5
E	25.0	10.0	2.5	2.5							40.0
Defective trees			2.5	2.5							5.0
Total	132.5	50.0	27.5	15.0	5.0	7.5					237.5

Forest

Plot No.	29	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	12.5	5.0	7.5	2.5							27.5
B	2.5		2.5								5.0
C	7.5	10.0	5.0		5.0						27.5
D	150.0	102.5	5.0		2.5	2.5	2.5				265.0
E	40.0	2.5									42.5
Defective trees	5.0	10.0	5.0			2.5					22.5
Total	217.5	130.0	25.0	2.5	7.5	5.0	2.5				390.0

Forest

Plot No.	30	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	15.0	7.5	5.0	7.5		2.5					37.5
B	2.5	7.5	2.5	2.5		2.5					17.5
C	17.5	25.0	7.5	5.0	5.0	2.5					62.5
D	117.5	37.5	10.5		2.5						167.5
E	37.5	15.0	2.5								55.0
Defective trees	2.5	2.5									5.0
Total	192.5	95.0	27.5	15.0	7.5	7.5					345.0

8. (concluded)

Forest type B

Plot No. 31											
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	22.5	7.5	5.0								35.0
B			2.5								2.5
C	10.0	15.0	10.0	2.5							37.5
D	92.5	35.0	15.0	5.0	2.5						150.0
E	37.5	5.0									42.5
Defective trees	5.0										5.0
Total	167.5	62.5	32.5	7.5	2.5						272.5

Forest type M

Plot No. 32											
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	5.0	5.0	2.5								12.5
B	5.0		2.5								7.5
C	7.5	7.5	15.0	7.5	5.0	5.0					47.5
D	57.5	67.5	17.5		2.5						145.0
E	5.0	2.5	5.0								12.5
Defective trees	2.5		2.5								5.0
Total	82.5	82.5	45.0	7.5	7.5	5.0					230.0

9. VOLUME BY PLOT, BY DIAMETER GRADE AND BY CLASS
(per ha, without bark)

Forest

Plot No.	1	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	1.01	0.80	2.63	6.93	7.36						18.73
B		0.38									0.38
C	074	2.74	8.84	4.03		4.25					20.60
D	5.47	12.50	5.98	3.56		4.10	4.95				36.56
E	0.69	1.89	1.00	1.75							5.33
Defective trees		0.33	1.00	1.88							3.21
Total	7.91	18.64	19.45	18.15	7.36	8.35	4.95				84.81

Forest

Plot No.	2	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.46	1.56	3.79	1.25	3.50						10.56
B	0.50	1.04	1.61	1.10	4.21	3.48					11.94
C	1.24	2.77	2.83	3.68	063	2.45	2.38				15.98
D	2.21	2.27	1.33		1.45						7.26
E	0.88	0.78	3.28	0.80							5.74
Defective trees											
Total	5.29	8.42	12.84	6.83	9.79	5.93	2.38				51.48

Forest

Plot No.	3	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.53	1.81	5.86	5.20							13.40
B				1.88							1.88
C	0.72	2.53	5.34	3.38	3.03	5.45					20.45
D	2.04	3.37	3.64								9.05
E	0.72		0.75								1.47
Defective trees	0.38	0.23		0.40							1.01
Total	4.39	7.94	15.59	10.86	3.03	5.45					47.26

Forest

Plot No.	4	type	B							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A											
B	0.05	043									0.48
C	0.20	2.76	2.11								5.07
D	6.09	10.31	7.27	1.70							25.37
E	4.19	2.79	2.76								9.74
Defective trees	0.10	0.70									0.80
Total	10.63	16.99	12.14	1.70							41.46

Forest

Plot No.	5	type	A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.89	1.26	4.06	1.80							8.01
B	0.38		0.75	3.28			4.05				8.46
C	0.64	1.10	1.30	3.36	4.13						10.53
D	2.08	6.27	3.48	2.16	2.08						16.07
E	0.60	0.33	2.21		0.98						4.12
Defective trees											
Total	4.59	8.96	11.80	10.60	7.19		4.05				47.19

(Unit: m^3, diameter cm)

9. (continued)

Forest type

Plot No.	6		A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	1.23	2.16	1.08	2.15	8.13						14.75
B	0.26	2.09	3.06				7.90				13.31
C	0.75	1.31	0.63	5.39	4.08		5.38				17.54
D	0.69	1.73	5.29	5.60		4.43					17.74
E	2.84	4.29	3.56	2.91	5.83						19.43
Defective trees	0.46	0.10	3.91	0.40	2.40						7.27
Total	6.23	11.68	17.53	16.45	20.44	4.43	13.28				90.04

Forest type

Plot No.	7		A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	1.99	2.93	5.31	7.44	6.18						23.85
B	0.35		1.96								2.31
C	0.28	1.28	0.88	4.10	2.13						8.67
D	3.21	9.10	4.40	1.05	3.38						21.14
E	1.31	3.43		4.86							9.60
Defective trees	0.18	0.41			2.05						2.64
Total	7.32	17.15	12.55	17.45	13.74						68.21

Forest type

Plot No.	8		A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.84	0.90	4.41	13.78	7.70	4.35					31.98
B	0.13	0.25	3.51				14.45				18.34
C	0.28		5.34	4.13	2.75						12.50
D	1.93	3.05	3.77	4.93	4.61		4.60				22.89
E	0.64	2.07									2.75
Defective trees	0.10	0.10	1.56								1.76
Total	3.96	6.37	18.59	22.84	15.06	4.35	19.05				90.22

Forest type

Plot No.	9		A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.46	3.10	4.61	1.13	6.78						16.08
B	0.25	0.48	2.06				8.70				11.49
C	0.71	2.91	1.28	1.28			8.38				14.56
D	2.87	4.94	3.73	1.33	2.28						15.15
E	0.55	1.69	0.95								3.19
Defective trees					2.28						2.28
Total	4.84	13.12	12.63	3.74	11.34		17.08				62.75

Forest type

Plot No.	10		M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.20	2.54	2.56	4.70	7.53						17.53
B	0.20	0.40				4.83					5.43
C	1.42	3.34	1.93		6.46						13.15
D	3.84	4.44	8.84	3.45	3.70						24.27
E	0.59	0.86	3.03	5.43	2.63	4.33					16.87
Defective trees											
Total	6.25	11.58	16.36	13.58	20.32	9.16					77.25

9. (continued)

Forest

Plot No.	11	type	A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	013	0.80	3.88	4.58							9.39
B	0.20	1.96	2.01	2.15							6.32
C	0.58	0.48	1.88			5.45					8.39
D	1.57	6.20	1.65	4.83	3.45						17.70
E	0.29	0.53	3.18	8.71	11.89						24.60
Defective trees		0.13	0.38								0.51
Total	2.77	10.10	12.98	20.27	15.34	5.45					66.91

Forest

Plot No.	12	type	A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	046	1.66	2.40	7.66	3.85						16.03
B	048	0.93		368	2.95		5.90		9.98		23.92
C	1.37	0.50	3.59	6.21	3.85						15.52
D	1.45	4.61	0.90	3.20	3.50						13.66
E	3.01	3.75	0.98	1.50							9.24
Defective trees	005				2.35						2.40
Total	6.82	11.45	7.87	22.25	16.50		5.90		9.98		80.77

Forest

Plot No.	13	type	A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	1.17	0.58	0.85	10.46	3.05	9.11					25.22
B	0.28	1.23	1.05	2.10							4.66
C	0.69	2.10	0.75	7.01							10.55
D	0.76	5.65	9.00	2.28							17.69
E	1.21	2.57	3.81								7.59
Defective trees	018		1.05			1.15					2.38
Total	4.29	12.13	16.51	21.85	3.05	10.26					68.09

Forest

Plot No.	14	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	1.16	2.87		1.85		6.15					12.03
B	0.10	0.80	2.13	3.93	2.60						9.56
C	051	0.55	1.45		3.43	10.80					16.74
D	2.03	4.27	1.83								8.13
E	1.41	2.08	0.83		3.70						8.02
Defective trees	0.46	1.49	1.00		2.43						5.38
Total	5.67	12.06	7.24	5.78	12.16	16.95					59.86

Forest

Plot No.	15	type	A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.97	4.95	7.41	2.25		6.65	7.80				30.03
B	0.23	1.13	1.25			5.63					8.24
C	0.90	599	3.58	3.78		3.90					18.15
D	4.79	3.85	3.04	1.70	2.90	3.78					20.06
E	1.56	1.40	0.85								3.81
Defective trees			0.55								0.55
Total	8.45	17.32	16.68	7.73	2.90	19.96	7.80				80.84

9. (continued)

Forest

Plot No.	16	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.91	3.46	11.02	14.55	3.78						33.72
B	0.23	0.93	1.16	2.48	3.88						9.13
C	0.83	3.33		2.88	3.85						10.89
D	3.89	4.65	7.24	1.98							17.76
E	1.16	4.70	0.65								6.51
Defective trees											
Total	7.02	17.07	20.52	21.89	11.51						78.01

Forest

Plot No.	17	type	A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.48	4.49	3.91	9.41	2.85		6.55				27.69
B	0.20		1.48								1.68
C	0.63	4.57	3.11	3.68	2.40						14.39
D	2.70	5.54	2.73								10.97
E	2.07	1.41	2.58								6.06
Defective trees		0.35									0.35
Total	6.08	16.36	13.81	13.09	5.25		6.55				61.14

Forest

Plot No.	18	type	A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.63	1.91	8.03	5.65	3.28	4.20	9.38				33.08
B	0.20	0.68					7.38	13.58			21.84
C	0.99	2.18	1.73	3.73	4.80						13.43
D	4.52	4.80	0.95								10.33
E	2.17	2.24									4.41
Defective trees											
Total	8.51	11.87	10.71	9.38	8.08	4.20	16.76	13.58			83.09

Forest

Plot No.	19	type	A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.43	1.39	1.13	2.33		6.10					11.38
B			2.41	2.00		4.80					9.21
C		2.34	5.45	2.13	3.13	3.88	6.18				23.11
D	2.50	5.53	4.26			5.45					17.74
E	3.82	1.66	6.25	2.30							14.03
Defective trees	0.28	1.00		2.20							3.48
Total	7.03	11.92	19.50	10.96	3.13	20.23	6.18				78.95

Forest

Plot No.	20	type	A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.10	0.91	2.41	4.53							7.95
B	0.21	2.53	0.63	6.23	4.23						13.83
C	1.28	1.25	4.69	7.13		11.63	20.56				46.54
D	0.85	8.18	2.63	3.65							15.31
E	4.05	4.62	4.19	8.13	3.13		7.15				31.27
Defective trees		0.73	0.83								1.56
Total	6.49	18.22	15.38	29.67	7.36	11.63	27.71				116.46

9. (continued)

Forest

Plot No.	21	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.20	1.36	2.11			5.20					8.87
B		0.48									0.48
C	0.40	1.41	2.68	6.25	13.36						24.10
D	3.08	6.56	4.59	1.55							15.78
E	2.81	0.96	0.88								4.65
Defective trees		0.28	0.30								0.58
Total	6.40	11.05	10.56	7.80	13.36	5.20					54.46

Forest

Plot No.	22	type	A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.33	5.09	11.62	2.63	7.05						26.77
B	0.28	1.63	2.56								4.47
C	0.58	4.05	3.88	5.33	9.21						23.05
D	3.99	11.51	0.98	3.98							20.46
E	0.61	2.69	4.04	4.38		4.80					16.52
Defective trees	0.13										0.13
Total	5.92	24.97	23.08	16.37	16.26	4.80					91.40

Forest

Plot No.	23	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.30	0.95	4.04	6.98			6.35				18.62
B		1.63		2.18							3.81
C	0.81	4.94	2.28	4.23	10.84						23.10
D	4.57	8.48	5.63	3.55		4.15					26.38
E	2.14	5.38	0.95								8.47
Defective trees	0.23	0.28									0.51
Total	8.05	21.66	12.90	16.94	10.84	4.15	6.35				80.89

Forest

Plot No.	24	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.13	1.33	4.51	4.73							10.70
B	0.08	1.03	3.03	4.45				7.68			16.27
C	0.59	3.06	8.69	2.28							14.62
D	5.19	12.24	5.21	2.13	2.68						27.45
E	0.48	2.79	2.23								5.50
Defective trees		0.75									0.75
Total	6.47	21.20	23.67	13.59	2.68			7.68			75.29

Forest

Plot No.	25	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	1.90	1.96	1.45	3.63							8.94
B	0.60	1.18		2.30							4.08
C	1.48	1.53		3.80							6.81
D	5.69	7.29	4.39			4.43					21.80
E	1.54	2.17									3.71
Defective trees	0.10	0.65						6.18			6.93
Total	11.31	14.78	5.84	9.73		4.43		6.18			52.27

9. (continued)

Forest

Plot No.	26	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.34	0.78	3.28	7.37	3.10						14.87
B	0.05	0.40		2.08	2.98	6.73	7.55				19.79
C	1.50	2.20	3.46	1.18	4.06	3.58					15.98
D	2.23	4.28	3.40	4.28			3.53				17.72
E	0.70	1.86	2.58	13.22							18.36
Defective trees		0.63	0.70								1.33
Total	4.82	10.15	13.42	28.13	10.14	10.31	11.08				88.05

Forest

Plot No.	27	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.97	1.35			7.58	5.73					15.63
B		0.76	2.01		1.68						4.45
C	0.10	0.60	4.66	3.33	4.15						12.84
D	3.31	5.41	5.26	1.40		4.10					19.48
E	1.92	0.98	2.45				6.73				12.08
Defective trees	0.20		0.80								1.00
Total	6.50	9.10	15.18	4.73	13.41	9.83	6.73				65.48

Forest

Plot No.	28	type	A							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.73	1.79	2.63	2.35	2.80	5.68					15.98
B		0.63	0.90	2.95							4.48
C	0.91	1.44	3.28	2.95		5.63					14.21
D	4.64	3.79	3.33	2.83	2.90	6.55					24.04
E	1.00	2.16	0.85	1.98							5.99
Defective trees			0.58	1.33							1.91
Total	7.28	9.81	11.57	14.39	5.70	17.86					66.61

Forest

Plot No.	29	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	1.19	1.00	3.56	1.95							7.70
B	0.23		1.13								1.36
C	0.66	2.99	2.03		6.91						12.59
D	7.93	16.55	2.88		2.50	4.83	4.38				39.07
E	2.19	0.85									3.04
Defective trees	0.33	1.43	0.96			1.08					3.80
Total	12.53	22.82	10.56	1.95	9.41	5.91	4.38				67.56

Forest

Plot No.	30	type	M							
Class \ dia.	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	1.29	1.61	2.36	6.99		5.80					18.05
B	0.15	1.21	0.50	2.85		5.20					9.91
C	1.26	5.25	4.94	3.88	9.43	6.13					30.89
D	8.04	7.31	3.91		2.85						22.11
E	2.03	3.26	1.55								6.84
Defective trees	0.08	0.13									0.21
Total	12.85	18.77	13.26	13.72	12.28	17.13					88.01

9. (concluded)

Forest

Plot No.	31	type	B							
dia. / Class	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	
A	1.31	1.78	2.33								5.42
B			0.50								0.50
C	0.41	3.39	3.43	1.20							8.43
D	3.57	4.87	4.94	3.40	1.33						18.11
E	1.14	0.75									1.89
Defective trees	0.28										0.28
Total	6.71	10.79	11.20	4.60	1.33						24.63

Forest

Plot No.	32	type	M								
dia. / Class	10–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101–	Total
A	0.53	1.11	1.53								3.17
B	0.30		1.28								1.58
C	0.73	1.41	6.72	7.23	6.90	8.88					31.87
D	4.02	11.78	7.31		2.53						25.64
E	0.53	0.40	2.11								3.04
Defective trees	0.05		0.35								0.40
Total	6.16	14.70	19.30	7.23	9.43	8.88					65.70

10. MEAN DIAMETER AND MEAN HEIGHT BY PLOTS (More than 10 cm of d.b.h.)

Plot No.	Diameter Breast Height cm	Commercial Height m	Total Tree Height m	Diameter at 5 m cm	Diameter at Commercial Height cm	No. of Trees
1	26.01	4.80	17.06	23.06	22.01	124
2	25.80	3.88	13.31	20.34	19.98	100
3	26.31	4.73	15.68	23.39	22.35	71
4	19.53	3.69	15.12	17.23	17.04	150
5	25.82	3.62	13.36	21.80	21.46	97
6	29.00	4.98	15.59	25.59	24.31	99
7	25.13	4.54	16.83	22.05	21.16	116
8	29.84	4.90	17.13	26.36	24.55	86
9	27.20	5.02	17.65	24.26	23.20	74
10	26.09	4.96	17.66	23.06	21.87	98
11	30.11	5.37	18.08	26.57	25.00	65
12	25.43	4.39	15.83	22.44	21.69	107
13	27.34	5.02	17.24	24.26	22.94	89
14	25.26	4.76	16.21	21.72	20.63	81
15	24.72	4.94	17.01	21.77	20.79	114
16	25.48	5.19	17.59	22.57	21.38	108
17	24.87	4.87	16.83	22.01	20.81	94
18	22.47	4.84	16.42	19.68	18.67	115
19	26.67	5.17	17.11	23.15	21.75	95
20	28.80	5.31	17.98	25.19	23.66	114
21	23.88	4.86	17.42	20.60	19.59	90
22	26.83	5.80	19.75	23.55	21.71	115
23	24.93	5.21	16.60	21.95	20.81	117
24	25.42	5.44	18.64	22.25	20.77	106
25	21.30	4.77	16.72	18.68	17.88	112
26	27.37	4.46	13.71	22.58	21.85	113
27	24.45	4.69	15.94	21.35	20.48	93
28	23.85	4.82	16.72	21.17	20.28	95
29	21.83	4.29	16.28	19.15	18.54	156
30	23.12	5.13	18.20	20.22	19.11	138
31	20.51	3.69	11.47	17.35	17.07	109
32	26.61	4.96	17.46	23.48	22.53	92
Mean	25.09	4.76	16.50	21.90	20.90	104.2

11. MEAN DIAMETER AND MEAN HEIGHT BY PLOTS
(More than 41 cm of d.b.h. within 10 cm d.b.h.)

Plot No. /16	Diameter Breast Height cm	Commercial Height m	Total Tree Height m	Diameter at 5 m cm	Diameter at Commercial Height cm	No. of Trees
1	51.00	7.36	23.07	43.57	39.29	14
2	54.00	4.74	19.50	39.21	38.43	14
3	47.11	6.59	22.00	40.22	36.56	9
4	45.00	5.00	21.00	42.00	42.00	1
5	50.00	4.46	18.77	42.54	41.69	13
6	51.70	6.94	21.70	44.25	39.60	20
7	48.29	6.50	21.07	42.64	39.21	14
8	53.32	7.47	21.95	46.79	41.26	19
9	55.44	6.11	21.56	51.44	49.89	9
10	50.67	7.27	23.00	45.60	42.20	15
11	49.50	7.79	22.21	45.14	40.86	14
12	52.53	6.37	21.11	46.79	43.89	19
13	48.80	6.63	21.73	44.47	40.07	15
14	56.70	7.10	22.90	48.50	44.00	10
15	58.00	6.70	21.60	52.90	50.00	10
16	47.75	8.17	24.08	43.17	38.92	12
17	49.56	7.33	22.89	44.56	40.78	9
18	59.40	8.70	23.30	54.00	49.30	10
19	56.00	7.36	22.36	50.55	45.82	11
20	53.50	7.36	22.64	48.45	43.82	22
21	51.22	7.44	22.33	45.00	41.67	9
22	49.50	7.18	23.86	45.07	41.86	14
23	50.85	7.31	20.15	46.00	41.92	13
24	49.37	7.88	23.13	44.38	40.00	8
25	51.57	7.00	21.57	46.43	42.71	7
26	51.12	6.44	20.84	42.08	40.08	25
27	58.56	7.78	23.89	49.33	45.11	9
28	52.36	7.91	25.09	48.00	43.82	11
29	58.57	6.21	21.86	52.14	47.86	7
30	52.42	8.42	24.42	47.42	43.00	12
31	49.00	4.50	16.00	41.25	40.25	4
32	54.00	6.88	21.38	48.87	45.62	8.
Mean	52.11	6.97	22.03	45.85	42.23	12.1

12. RESULTS OF SOIL SURVEY

No.	Soil characteristics												Ao	Chorography and floor condition	Stand inventory and floor vegetation	Stand type	
	Horizon	Thickness, cm	Color	Humus	Gravel	Soil texture	Grain size	Consistency	Soil moisture	Rootage	Hardness	Soil type					
1	AB	0- 4	10R 3/4	h2		SL	Gr	d2	W2	r2	3	II	LF 1cm	Flat, 210m Spares distribu-bution of LF layer	Native broad-leaved trees A-class trees such as Lapocho and Guatambú are seen at every level. C-class trees such as Laurel hú and Yvyrá pepé are conspicuous at lower levels.	M	
	B1	4-15	" 3/6	h1		"		d3	"	"	8						
	B21	15-50	7.5R 3.5/6	"		"		"	"	"	11						
	B22	50-80	" 3/8	"		"		d3,4	"	"	17						
	B23	80-	" 3/6	"		"		"	"	"	16						
2	AB	0- 5	2.5YR 4/4	h2		SL	Bl	d2	W2	r2	7	III	LF 1cm (HA)	Flat, 260m Sparse distribu-tion of LF layer; locally HA layer	Native broad-leaved trees Cedro at upper level; Guatambú at every level; Laurel hú and Yvyrá pepé are abundant at the lower level.	M	Fine roots extending 60cm or deeper
	B11	5-15	" 3/6	h1		"		d3	"	r1	9						
	B12	15-37	" 3/6	"		"		d2,3	"	"	9						
	B21	37-65	" 3/6	"		"		"	"	"	10						
	B22	65-	10R 3.5/6	"		"		d3	"	"	13						
3	AB	0- 5	10R 3/3	h2		SL	Gr	d2	W2	r3	5	II	LF 1cm	Flat, 260m Sparse distribu-tion of LF layer.	Native broad-leaved trees A-class Cedro and Guatambú at upper level; C-class laurel hú and Yvyrá pepé are abundant at lower level.	M	
	B1	5-25	" 3/6	h1		"		d3	"	r2	11						
	B21	25-66	7.5R 3/6	"		"		"	"	"	10						
	B22	66-	" 3/6	"		"		d4	"	r1	20						
4	B11	0-11	5YR 5/8	h1		SL		d2	W2	r2	4	IV	LF 1cm	Moderate slope, 210m	Native broad-level trees No noteworthy trees but laurel aju y and Yvyrá; bamboo groves seen	B	Pronounced Fe specks in B11 B12 and B21 (g); B22(g) subjected to gleyification
	B12	11-30	7.5YR 5/6	"		"		d3	"	"	12						
	B21(g)	30-70	" 5.5/6	"		"		d2,3	"	r1	8						
	B22(g)	70-	" 6/6	"		"		d3	"	"	10						
5	HA	0- 1	2.5YR 2/3	h3		SL	Bl	d1	W2	r3	3	II	L 1cm F 1cm	Flat, 250m Finely detrited F layer	Native broad-leaved trees Many A-class trees of Guatambú, Cedro and Kurupay, etc. standing 10m or higher	A	
	AB	1-11	" 3/4	h2		"		d2	"	"	4						
	B11	11-25	10R 3/5	h1		"		d3	"	r2	12						
	B12	25-50	" 3.5/6	"		"		d2,3	"	"	8						
	B21	50-70	" 3/6	"		"		d2,3	"	r1	7						
	B22	70-	7.5R 3/6	"		"		d4	"		18						

No.	Soil characteristics												Ao	Chorography and floor condition	Stand inventory and floor vegetation	Stand type
	Horizon	Thickness, cm	Color	Humus	Gravel	Soil texture	Grain size	Consistency	Soil moisture	Rootage	Hardness	Soil type				
6	AB	0-10	10R 4/6	h2		SL	Gr	d2	W2	r3	4	I	LF 1cm	Flat, 310m Sparse distribution of F layer	Native broad-leaved trees A-class Guatambú of 10m and higher at each level; Cedro and Peterevy; No tress of classes A and B which are less than 10m	A
	B11	10-30	" 3.5/6	h1		"		d3	"	r2	9					
	B12	30-50	" 3.5/6	"		"		d2	"	"	5					
	B21	50-80	" 3.5/6	"		"		d3	"	r1	9					
	B22	80-	" 3/6	"		"		d3,4	"		14					
7	HA	0- 2	2.5YR 2/3	h3		SL	Gr	d1	W2	r3	2	II	LF 2cm	Flat, 240m Sparse distribution of LF layer; loose HA Layer	Native broad-leaved trees Many A-class Guatambú, Kurupay and Cedro, etc. at upper level; 10m or shorter chiefly accounted for by B and C classes	A
	AB	2- 8	2.5YR-10R 3/4	h2		"	Bl	d2,3	"	'	5					
	B11	8-20	10R 4/6	h1		"	"	d3,4	"	r2	10					
	B12	20-38	" 4/6	"		"		d3	"	"	9					
	B21	38-77	" 3.5/6	"		"		"	"	r1	8					
	B22	77-	" 3.5/6	"		"		d3,4	"	"	15					
8	AB	0- 9	2.5YR 3/4	h2		SL	Bl	d2	W2	r3	6		LF 1cm	Flat, 290m Sparse distribution of LF layer; comparatively dry	Native broad-leaved trees Many commercially valuable trees such as Cedro, Guatambu, Kurupay, Peterevy and Cancharama	
	B1	9-33	10R 3/6	h1		"		d3	"	r2	12					
	B21	33-63	" 3.5/6	"		"		d4	"	r1	14					
	B22	63-	" 4/6	"		L		d4	W2,3	"	20 *1					
9	HA	0- 1	2.5YR 2/2	h3		SL	Gr	d1	W2	r3	2	II	LF 1cm	Flat, 270m Sparse distribution of LF layer	Native broard-leaved trees Cedro, Guatambú and Kurupay, etc. seen even at lower levels	A
	AB	1-15	" 3/6	h2		:	Bl	d1	"	r2	4					
	B1	15-42	10R-2.5YR 4/6	h1		"		d2,3	"	r1	6					
	B2	42-	2.5YR 4/6	"		"		"	"	"	5					
10	HA	0- 2	2.5YR 2/4	h3		SL	Gr	d1	W2	r3	3	II	LF 2cm	Flat, 250m Sparse distribution of LF layer	Native broad-leaved trees Guatambú of 15m up seen; shorter trees accounted for by B-class such as Cancharama	M Forest roads totally saturated with water after heavy storm; no distinct gullying
	AB	2-12	" 3/6	h2		"	Bl	d2,3	"	r2	7					
	B1	12-40	10R 4/6	h1		"		d3	"	r1	10					
	B21	40-80	" 3.5/6	"		"		"	"	"	9					
	B22	80-	" 3/6	"		SL.L		d4	W2,3	"	16 *2					

(Note) *1: Clay accumulation
*2: Weak degree of clay accumulation

12. (continued)

No.	Soil characteristics												Ao	Chorography and floor condition	Stand inventory and floor vegetation	Stand type
	Horizon	Thickness, cm	Color	Humus	Gravel	Soil texture	Grain size	Consistency	Soil moisture	Rootage	Hardness	Soil type				
11	AB	0-12	2.5YR 3/3.5	h2		SL	Bl	d3	W2	r1	8	III	LF 1cm (HA)	Flat, 270m Sparse distribution of LF layer; local growth of HA layer under LF layer	Native broad-leaved trees Cedro, Guatambú, etc. seen at high level; few A-class trees of 15m uner.	A All horizons consistent; B12 horison and layers below are heavily viscous viscous
	B11	12-32	" 3/4	h1		"		"	"	"	8					
	B12	32-67	" 3/4	"		L	"	"	"	"	12 *1					
	B21	67-88	" 3.5/4	"		"		d4	"		18					
	B22	88-	" 3/4	"		"		d4	"		20					
12	AB	0-10	2.5YR 3/4	h2		SL	Bl	d2,3	W2	r2	5	II	LF 1cm (HA)	Flat, 310m Sparse distribution of LF layer;	Native broad-leaved trees A-class Cedro, Guatambú, etc. seen even below 15m ; A-class trees of 25m and higher, probably because of indiscriminate felling.	A
	B1	10-38	" 3/6	h1		"		d3	"	r1	8					
	B21	38-77	10R-2.5YR 3/6	"		L		d3,4	"	"	16 *2					
	B22	77-	10R 3/6	"		CL		d4	"	"	23					
13	AB	0- 8	2.5R 3/3	h2		SL	Bl	d1	W2	r3	3	II	LF 1cm	Flat, 310m Sparse distribution of LF layer	Native broad-leaved trees A-class trees distributed wide down to lower levels.	A
	B1	8-42	" 3/4	h1		"		d3,4	"	r2	14					
	B21	42-70	10R-2.5YR 3/4	"		L		d3	"	"	8 *3					
	B22	70-	10R 3/4	"		CL		d4	"		22					
14	HA	0- 2	2.5YR 2/2	h3		SL	Gr	d1	W2	r3	2	II	LF 1cm	Flat, 290m Sparse distribution of LF layer; loose HA layer	Native broad-leaved trees Few A-class trees; mostly B and C classes of Chancharana, Laurel hu, etc.	M
	AB	2-23	" 4/4	h2		:		d3	"	"	8					
	B1	23-48	" 4/6	h1		"		"	"	r2	9					
	B2	48-	10R 4/6	"		"		"	"	r1	7					
15	HA	0- 2	2.5YR 2/2	h3		SL	Gr	d1	W2	r3	2	II	LF 2cm	Flat, 270m Sparse distribution of LF layer	Native broad-leaved trees A broad distribution of A and B class trees from upper to lower levels, particularly Guatambú.	A
	AB	2- 8	" 3/4	h2		"	Bl	d3	"	"	6					
	B1	8-30	" 4/4	h1		"		d3,4	"	r2	12					
	B21	30-70	10R 4/5	"		"		d3	"	r1	8					
	B22	70-	" 4/6	"		SL.L			"	"	14 *4					

(Note) *1,*2 and *3: Clay accumulation
*4: Weak Weak degree of clay accumulation

12. (continued)

No.	Soil characteristics												Ao	Chorography and floor condition	Stand inventory and floor vegetation	Stand type
	Horizon	Thickness, cm	Color	Humus	Gravel	Soil texture	Grain size	Consistency	Soil moisture	Rootage	Hardness	Soil type				
16	HA	0- 2	2.5YR 3/2	h3		SL	Ge	d1	W1	r2	2	II	LF 1cm	Flat, 300, Sparse distribution of LF layer	Native broad-leaved trees Many A-class trees of 15m up, led by Cedro and Guatambú	M
	AB	2-12	" 4/5	h2		"		d3	W2	"	6					
	B1	12-30	" 4/6	h1		"		d3,4	"	r1	11					
	B21	30-80	10R 4/6	"		"		d3	"	"	8					
	B22	80-	" 3/6	"		SL.L		"	"		8 *1					
17	HA	0- 2	2.5YR 2/2	h3		SL	Gr	d1	W2	r3	2	II III	LF 1cm	Flat, 300m Sparse distribution of LF layer	Native broad-leaved trees Wide distributin of A-class trees, mainly Guatambú, down to lower levels	A Heavily viscous clay below B21 horizon
	AB	2-15	" 3/3	h2		"	Bl	d3	"	r2	6					
	B1	15-54	" 3/4	h1		"		"	"	"	8					
	B21	54-80	10 3/4	"		SL.L		d3,4	"	r1	15 *2					
	B22	80-	" 3/6	"		L		d4	"	"	18 *3					
18	AB	0-15	10R 3/3	h2		SL	Ge	d2	W2	r2	7	II	LF 1cm (HA)	Flat, 350m Sparse distribution of LF layer; local growth of HA thereunder	Native broad-leaved trees Wide distribution of Guatambú from the upper to lower levels; many C-class trees at lower levels	A
	B1	15-48	" 3.5/4	h1		"	Bl	d3	"	"	9					
	B21	48-86	" 3.5/6	"		"		"	"	r1	11					
	B22	86-	" 3/6	"		"		d3,4	"		13					
19	HA	0- 1	2.5YR 2/3	h3		SL	Gr	d1	W2	r3	2	I	LF 1cm	Flat, 350m Sparse distribution of LF layer; loose HA	Native broad-leaved trees Wide distribution of A-class trees down to lower levels; many C-class trees including Laurel hu	A
	AB	1-15	" 3/5	h2		:	Gr,Bl	d3	"	"	8					
	B1	15-32	" 3/6	h1		"		"	"	r2	10					
	B21	32-80	10R 4/6	"		:		:	:	r1	8					
	B22	80-	" 4/5	"		"		d3,4	W2.3	"	13					
20	HA	0- 1	2.5YR 2/2	h3		SL	Gr	d1	W2	r2	2	I	LF 1cm	Flat, 350m Sparse distribution of LF layer	Native broad-leaved trees Few A-class trees except Guatambu; mainly B- and C-class trees such as Cancharana, Laurel hu, etc.	A Few commercially valuable trees of 25m up probably because of indistriminate felling.
	AB	1-10	" 3/5	h2		"	Gr,Bl	"	d3	"	r2	6				
	B1	10-35	10R 3/5	h1		"		d3,4	"	r1	10					
	B21	35-70	" 3/5	"		"		"	"	"	10					
	B22	70-	" 3/4	"		L		d4	W2.3	"	19 *4					

(Note) *1,*2: Weak accumulation of clay
*3,*4: Clay accumulation

12. (continued)

No.	Soil characteristics												Ao	Chorography and floor condition	Stand inventory and floor vegetation	Stand type
	Horizon	Thickness, cm	Color	Humus	Gravel	Soil texture	Grain size	Consistency	Soil moisture	Rootage	Hardness	Soil type				
21	AB	0-12	2.5YR 3/3.5	h2		SL	Gr	d3	W2	r2	5	II	LF 1cm (HA)	Flat, 350m Sparse distribu-tion of LF layer;	Native broad-leaved trees Guatambú seen at high level; mainly trees of B and C classes	A
	B1	12-30	" 3/4	h1		"	Bl	"	"	"	8					
	B21	30-78	10R 3/5	"		"		"	"	"	6					
	B22	78-	" 3.5/6	"		"		"	"	r1	9					
22	HA	0- 1	10R 2/3	h3		SL	Gr	d1	W1	r3	2	II	LF 1cm	Flat, 300m Fair to poor LF layer	Native broad-leaved trees Many A-class trees of Cedro, Guatambu, etc.; many B- and C-class trees; excellent stands	A
	AB	1-10	" 3/4	h2		"	Bl	d3	W1,2	"	13					
	B1	10-38	" 3/4	h1		"		"	W2	r2	9					
	B21	38-77	" 3/5	"		"		"	"	r1	9					
	B22	77-	" 3/6	"		"	d4	"	"	"	16					
23	AB	0-13	2.5YR 3/4	h2		SL	Gr,Bl	d3	W2	r2	8	II	LF 2cm	Flat, 270m Sparse distribu-tion of LF layer	Native broad-leaved trees A-class Guatambú at every level; mainly trees of B and C classes	M
	B1	13-44	10R 3.5/4	"		"		d3,4	"	r1	13					
	B21	44-82	" 3.5/6	h1		"		d3	"	"	10					
	B22	82-	" 4/6	"		"		d3,4	"		13					
24	HA	0- 2	5YR 2/3	h3		SL	Gr	d1	W1	r3	2	I,II	LF 2cm	Flat, 290m Sparse distribu-tion of LF layer	Native broad-leaved trees Guatambú taller than 15 seen; mainly B- and C-class trees of Cancharana, Yvyrá pepe, etc	M
	AB	2-18	" 4/8	h1		"	Gr,Bl	"	W2	"	5					
	B1	18-49	2.5YR 4.5/6	"		"		"	W2	"	9					
	B21	49-72	" 5/7	"		"		"	"	r1	8					
	B22	72-	" 4/8	"		"		d3,4	"	"	12					
25	A	0- 3	2.5YR 4/4	h2		SL	Gr	d1	W1	r3	2	II	LF 2cm	Falt, 320m Sparse distribu-tion of LF layer,	Bative broad-leaved trees Guatambú seen at each level; mainly B and C classes	M
	AB	3-13	"	4/5		"	Bl	d3,4	W2	r2	10					
	B1	13-33	" 4/8	h1		"		d3	"	"	7					
	B21	33-64	10R 4/8	"		"		d3,4	"	"	8					
	B22	64-	" 4/7	"		"		"	"	r1	12					

12. (continued)

No.	Soil characteristics												Ao	Chorography and floor condition	Stand inventory and floor vegetation	Stand type
	Horizon	Thickness, cm	Color	Humus	Gravel	Soil texture	Grain size	Consistency	Soil moisture	Rootage	Hardness	Soil type				
26	HA	0- 3	5YR 2/1	h3		SL	Cr	d1	W2	r3	2	III	LF 1cm	Flat, 300m Sparse distribution of LF layer	Native broad-leaved trees A-class Guatambú, Peterevy, Lapacho, etc. found at each level; comparatively well	M
	AB	3-24	" 4/6	h2		"	Bl	d3	"	r2	10					
	B1	24-50	" 4/8	h1		"		"	"	"	7					
	B21	24-50	2.5YR 4/7	"		"			"	"	8					
	B22	80-	" 5/6	"		"		d3,4	"	r1	13					
27	HA	0- 2	2.5YR 3/3	h3		SL	Gr	d1	W1	r3	2	I	LF 2cm	Flat, 320m Sparse distribution of LF layer	Native broad-leaved trees Many Guatambú and Cedro at each level	M Porous throughout the horizons
	AB	2-13	" 3/6	h2		"	Gr,Bl	d2	W1,2	r2,2	3					
	B1	13-40	" 4/8	h1		"	Bl	d2,3	W2	4						
	B21	40-75	10R 4/7	"		"		d3	"	r11	6					
	B22	75-	" 4/6	"		"		"	"	"	6					
28	HA	0- 3	2.5YR 2/2	h3		SL	Gr	d1	W1	r3	2	I	LF 2cm	Flat, 320m Sparse distribution LF layer	Native broad-leaved trees Guatambú, Cedro, etc. of 10m up at each level; C-class Urunde para at upper level; Laurel hu at lower level	A
	AB	3-12	" 4/4	h2		"	"	d1,2	W1,2	r2	3					
	B1	12-35	" 4/5	h1		"	Bl	d3	"	"	8					
	B21	35-75	" 4/7	"				"	W2	r1	5					
	B22	75	" 4/6	"		"		"	"	"	5					
29	HA	0- 5	2.5YR 2/3	h3		SL	Gr	d1	W1	r3	3	I	LF 2cm	Flat, 340m Comparatively thick deposition of LF layer	Native broad-leaved trees A-class trees, including Guatambú, foound at each level; mainly B- and C-classes	A
	AB	5-18	" 3/6	h2		"	Gr,Bl	d3	"	r2	8					
	B1	18-65	" 4/6	h1		"		"	W2	r1	10					
	B2	65-	10R 5.5/6	"			"	"	"	"	10					
30	HA	0- 2	2.5YR 3/2	h3		SL	Gr	d1	W1	r3	2	I	LF 2cm	Flat, 320m Sparse distribution of LF layer	Native broad-leaved trees Guatambú at each level; mainly C-class	M
	AB	2-15	" 3/6	h2		"	Gr,Bl	d2	"	r2	5					
	B11	15-35	10R 3.5/6	"		"		"	W2	r1	10					
	B12	35-58	" 3.5/6	"		"		"	W2	"	8					
	B2	58-	" 3/7	"		"		d3,4	"	"	14					

12. (concluded)

No.	Soil characteristics												Ao	Chorography and floor condition	Stand inventory and floor vegetation	Stand type
	Horizon	Thickness, cm	Color	Humus	Gravel	Soil texture	Grain size	Consistency	Soil moisture	Rootage	Hardness	Soil type				
31	HA	0- 2	2.5YR 2/3	h3		SL	1Gr. Gr	d1	W1,2	r3	3	I	LF 2cm	Flat, 320m Sparse distribution LF layer	Native broad-leaved trees A-class trees, including Guatambú, of 20m below seen at each level; mainly C-class	B
	AB	2-16	" 3/5	h2		"	Gr.Bl	d2	"	"	6					
	B11	16-40	" 3/6	h1		"	Bl	d3	W2	r2	8					
	B12	40-64	" 4/7	"		"		"	"	"	8					
	B2	64-	10R 3/8	"		"		d3,4	"		13					
32	HA	0- 1	2.5YR 2/3	h3		SL	Gr	d1	W1	r3	2	I	LF 2cm	Flat, 320m Saprse distribution of LF layer	Native broad-leaved trees A-class trees of 20m below seen; no taller A-class trees; mainly C-class at each level	M
	AB	1-12	" 4/5	h2		"	"	d2,3	"	r2	5					
	B1	12-38	" 4/6	h1		"	Bl	d3	W1,2	"	11					
	B21	38-75	10R 4/3.5	"		"		"	W2	r1	9					
	B22	75-	" 4/6	"		"		"	"	"	9					

13. STEPS FOR LAND PREPARATION IN PROVINCE OF MISIONES, ARGENTINA

As the study area of the Capiibary afforestation plan is a productive timber area, steps for land preparation were determined on the basis of field observation and hearing surveys conducted in Paraguay and province of Misiones, Argentina, as follows.

Steps for land preparation

(1) Fell and carry out useful trees.

(2) 1) Cut all remaining trees with machete or chain saw from the ground face, or;

2) Cut large diameter trees with chain saw from the ground face. Cut or push down large, medium small diameter trees by bulldozer or cut with cutter attached to the dozer.

(3) 1) Either collect the felled trees by tractor or rakedozer first and then carry out fuelwood, or;

2) Carry out fuelwood first and then collect the rest of the felled trees by tractor or rakedozer. The collected felled-trees shall be piled either in circles of 50 m radius in a group or in 50 m wide streaks.

(4) Burn the accumulated trees. The remnants shall be gathered and burnt again.

(5) Grade the ground with the use of a heavy plough (5 - 6 ton) or with the combined use of a heavy plough and disc narrow.

(6) Complete land preparation by clearing the ground of all residues.

Step (1) may occasionally be carried out after Step (2). Also, in Step (3), carrying out of fuelwood may sometimes be eliminated by going immediately into Step (4), which is burning, after the trees have been collected.

The above are what are considered the most common steps. Actually, however, there are cases, for example, where collecting of trees may be done by a chain dragged by two tractors, or where in Step (2) medium diameter trees may be pushed down by a tree pusher. Thus, in developing an execution program, the appropriate methods must be studied with due consideration to soil conservation, efficiency and cost.

No data was obtainable this time on the problem of stump disposal, but since (1) the remaining roots will not be a hinderance to land preparation and afforestation if the trees are cut close to the ground surface and (2) growth and harvest of planted trees and farm crops are said to be unsatisfactory on uprooted tracts, it is a problem for which further information should be gathered and reviewed.

As for the cost of land preparation, Company A quotes a figure in the range of Gs 130,000 to Gs 150,000/ha while Company B quotes a figure of Gs 192,371/ha. The basis of their estimation, however, is not clear as of this moment.

14. COMPARISONS OF GNP, ETC. OF EACH COUNTRY

Country or region		Area (in 1,000 km²)	Population (in millions)	GNP (US$ million)	Per capita GNP (US$)	Currency unit	Exchange rate per US$
Japan		378	117.65	1,152,910	9,890	Yen	220.54
USA		9,363	229.81	2,582,460	11,360	Dollar	-
South American States (12 countries)	Repuglic of Argentina	2,767	28.09	66,430	2,390	Peso	4,402.7
	Republic of Bolivia	1,099	5.76	3,190	570	Peso	24.510
	Federative Republic of Brazil	8,512	121.55	243,240	2,050	Cruzeiro	93.125
	Republic of Chile	757	11.29	23,980	2,150	Peso	39.000
	Republic of Colombia	1,139	(27.30)	31,570	1,180	Peso	54.491
	Republic of Ecuador	284	8.64	10,230	1,270	Scle	(25.000)
	Republic of Guyana Cooperative	215	0.90	550	*690	Guyana Dollar	2.8125
	Republic of Paraguay	407	3.27	4,110	1,300	Guarany	(126.00)
	Republic of Peru	1,285	18.28	16,470	930	Sol	422.85
	Republic of Surinam	163	0.40	1,000	2,840	Surinam Guilder	(1.7850)
	Oriental Republic of Uruguay	176	2.93	8,240	2,810	New Peso	10.871
	Republic of Venezuela	912	14.31	54,220	3,630	Boliver	4.2925

(Source) Table of the World's Countries, 1983 Edition
(Edited by the Public Information & Cultural Affairs Bureau, Ministry of Foreign Affairs, Government of Japan)

(Notes) (1) Area - UN Statistical Year Book, 1978 Edition

(2) Population - UN Monthly Statistics, Sept. 1982 issue
(Estimates as of Mid-year 1981)

(3) GNP - World Bank, 1981 Atlas (Preliminary estimates for 1980)

(4) Per capita GNP - World Bank, World Development Report 1982 (1980 annual totals)

(5) Exchange rate - IMS, IFS November 1982 issue (1981 averages)

Figures in parentheses transcribed from other data.

15. GDP BY SECTOR, COMPOSITION RATIOS, AND GROWTH INDICES (BASED ON 1977)

Item	GDP by year (in US$ millions)					'81 % composition	Production index (1977=100)
	'77	'78	'79	'80	'81		
Production sector							
Agriculture & forestry							
Agriculture	470.7	499.9	532.3	588.8	637.1	20.5	135
Livestock-farming	172.8	179.4	186.5	194.0	200.2	6.5	116
Forestry	68.2	73.6	83.9	94.2	98.7	3.2	145
Fisheries	2.0	2.7	3.6	3.9	4.0	0.1	200
(Sub-total)	(713.7)	(755.6)	(806.3)	(880.9)	(940.0)	(30.3)	(132)
Mining, manufacturing & construction							
Mining	5.4	6.3	10.0	11.3	13.0	0.4	241
Manufacturing	356.9	395.9	422.0	475.2	513.2	16.6	144
Construction	83.9	110.6	143.8	181.2	211.5	6.8	252
(Sub-total)	(446.2)	(512.8)	(575.8)	(667.7)	(737.7)	(23.8)	(165)
[Production sector total]	[1,159.9]	[1,268.4]	[1,382.1]	[1,548.6]	[1,677.7]	[54.1]	[145]
Service sector							
Basic services							
Electricity	31.4	36.4	43.7	52.7	54.8	1.8	175
Water & sanitation	5.2	6.4	7.2	7.9	8.9	0.3	171
Transport & communication	81.5	90.4	100.8	111.4	114.9	3.7	141
(Sub-total)	(118.1)	(133.2)	(151.7)	(172.0)	(178.6)	(5.8)	(151)
Services							
Commerce & finance	524.1	598.9	673.9	744.7	807.1	26.0	154
Government enterprises	81.6	88.1	96.8	103.6	127.2	4.1	156
Housing	48.3	53.8	59.4	64.8	69.2	2.2	143
Other services	160.4	181.1	204.5	226.5	242.1	7.8	151
(Sub-total)	(814.4)	(921.9)	(1,034.6)	(1,139.6)	(1,245.6)	(40.1)	(153)
[Service sector total]	[932.5]	[1,055.1]	[1,186.3]	[1,311.6]	[1,424.2]	[45.9]	[153]
GDP	2,092.2	2,319.3	2,567.5	2,860.2	3,101.9	100.0	148
Per capita GDP	728 US$	781 US$	837 US$	903 US$	949 US$		130

(Source) Central Bank of Paraguay, 1982

16. EXPORT VALUE BY MAJOR DESTINATION

(in US$ million)

Country	1978	1979	1980	1981	1981 shares
America (excl. Latin America)	(23,122)	(17,947)	(17,136)	(16,582)	(5.6)%
U.S.A.	22,212	17,628	16,679	15,308	5.2
Canada	462	42	37	7	0.0
Puerto Rico	448	277	420	1,267	0 4
LAFTA members	(66,808)	(104,017)	(140,668)	(147,487)	(4 9 9)
Argentina	24,154	51,009	74,181	68,542	23.2
Brazil	29,103	40,240	54,146	40,240	13.6
Uruguay	7,013	13,611	10,158	9,124	3 1
Chile	13,487	7,154	11,307	11,040	3 7
Mexico	1,172	2,452	4,017	2,394	0.8
Others	569	678	765	2,241	0.8
Other American States	469	1,025	1,323	1,235	0.4
EC members	(102,823)	(121,998)	(78,636)	(60,000)	(20.3)
West GermanY	38,807	46,407	38,454	32,902	11.1
U.K.	14,976	625	1,802	2,894	1.0
Netherlands	26,497	45,344	19,746	13,257	4.5
Luxemburg	1,469	1,811	5,741	3,027	1 0
France	3,530	5,907	5,028	4,603	1.6
Others	17,544	21,904	7,865	3,317	1.1
EFTA members	(20,456)	(29,691)	(44,093)	(27,571)	(9.3)
Switzerland	15,978	21,789	31,614	14,651	5.0
Others	4,478	7,902	12,479	12,920	4.4
Other European Countries	(7,444)	(10,721)	(5,949)	(6,203)	(2.1)
Spain	6,782	5,569	4,796	3,791	1.3
Others	662	5,152	1,153	2,412	0.8
Asia	(32,961)	(17,909)	(17,960)	(31,004)	(10.5)
Japan	32,310	16,407	11,296	24,940	8.4
Others	651	1,502	6,664	6,064	2 1
Other countries of the world	2,900	1,868	4,465	5,459	1.9
Total	256,983	305,176	310,230	295,541	100.0

(Source) Data of the Economic Planning Agency

17. IMPORT VALUE BY MAJOR SOURCE

(in US$ million)

Country	1978	1979	1980	1981	1981 shares
America (excl. Latin America)	(37,567)	(52,414)	(54,528)	(52,817)	(10.4)%
U.S.A.	34,754	49,809	51,159	49,156	9.7
Canada	233	524	261	538	0.1
Puerto Rico	580	343	213	524	0.1
Others	2,000	1,738	2,895	2,599	0.5
LAFTA members	(129,429)	(189,467)	(267,454)	(252,566)	(49.9)
Argentina	48,767	74,040	106,442	100,090	19.8
Brazil	62,711	96,371	140,504	131,257	25.9
Uruguay	13,428	14,275	14,952	15,475	3.1
Chile	3,325	2,935	4,297	4,037	0.8
Mexico	687	499	496	549	0.1
Others	511	1,347	763	1,158	0.2
Other American States	2,348	2,362	3,292	5,466	1.1
EC members	(70,093)	(75,528)	(83,281)	(87,565)	(17.3)
West Germany	26,190	31,665	33,533	41,038	8.1
U.K.	30,499	24,192	28,843	24,898	4.9
Netherlands	1,341	2,672	2,154	3,331	0.7
Luxemburg	1,925	1,820	1,640	2,392	0.5
France	6,423	8,776	12,030	9,098	1.8
Others	3,715	6,403	5,081	6,808	1.4
EFTA members	(7,771)	(8,658)	(8,975)	(9,886)	(2.0)
Switzerland	1,534	2,297	2,904	3,078	0.6
Austria	1,462	2,029	2,129	2,287	0.5
Sweden	4,586	4,138	3,564	4,283	0.8
Others	189	194	378	238	0.1
Other European Countries	(5,355)	(8,124)	(8,285)	(9,106)	(1.8)
Spain	3,752	5,361	5,502	6,014	1.2
Others	1,603	2,763	2,783	3,092	0.6
Algeria	34,637	50,069	37,082	27,458	5.4
Asia	(30,088)	(41,982)	(52,183)	(60,681)	(12.0)
Japan	25,193	36,085	42,031	41,990	8.3
Others	4,895	5,897	10,152	18,691	3.7
Other countries of the world	450	3,154	2,061	566	0.1
Total	317,738	431,758	517,141	506,111	100.0%

(Source) Data of the Economic Planning Agency

18. QUANTITY AND VALUE OF EXPORTS BY LUMBER PRODUCTS

(Unit : ton, F.O.B. Value US$1,000)

Item	1975		1980		1981		1982	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1. Sawn woods	107,012	22,184	186,879	47,487	75,349	23,046	70,602	20,172
2. Processed woods	9,736	5,688	75,455	18,964	42,392	13,903	40,199	24,017
(1) Veneer	5,041	1,329	47,220	9,481	24,932	7,207	17,769	5,072
(2) Flooring board	2,713	1,613	2,844	1,752	1,655	1,304	5,365	9,850
(3) Door board	866	2,058	543	1,415	403	1,028	71	196
(4) Plywood	778	540	2,065	2,378	1,755	1,646	744	770
(5) Furniture timber	3	5	-	-	56	20	-	-
(6) Pole pile	-	-	-	-	5	2	8	2
(7) Wall board	38	42	25	57	9	28	-	-
(8) Others	297	101	21,958	3,881	13,577	2,668	16,242	8,127
3. Palm	1,556	133	-	-	606	30	-	-
Total	118,304	28,005	262,334	66,451	118,347	36,979	110,881	44,189

(Source) Central Bank of Paraguay

19. IMPORTS OF PAPER AND PAPER PRODUCTS

(Unit: Ton)

Item	1975	1980	1981	1982
	Quantity	Quantity	Quantity	Quantity
Packaging paper	698	3,137	4,028	2,048
News print	3,059	8,027	4,883	10,643
Paper for cigarette	20	69	120	82
Paper for note	1,364	3,828	2,629	3,744
Paper board	-	-	-	-
Processing paper board	36	2	7	3
Processing paper	59	114	44	54
Paper for books	91	159	156	186
Others	2,287	1,030	1,441	2,027
Total	7,614	16,366	13,308	18,787

(Source) Data of the Economic Planning Agency

20. TRENDS IN CRUDE WOOD PRODUCTION, IMPORT AND EXPORT

			Unit	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	Remarks
Crude wood production	Crude wood gross production		1,000 m^3	4,082	3,940	4,272	4,618	4,935	4,945	5,322	4,662	5,091	5,451F	
	Crude wood gross import		1,000 m^3	-	-	-	-	-	-	-	-	-	-	
	Crude wood gross export		1,000 m^3	115	21	1	2	3	-	2	-	-	-	
	Breakdown	Fuel wood production	1,000 m^3	2,660	2,491	2,627	2,817	3,000	3,181	3,393	2,600	2,660	3,000F	
		Fuel wood import	1,000 m^3	-	-	-	-	-	-	-	-	-	-	
		Fuel wood export	1,000 m^3	-	-	-	-	-	-	-	-	-	-	
		Charcoal production	1,000 m^3	666	696	726	762	780	816	894	864	888	912F	Equivalent to 167 kgm^3
		Charcoal import	1,000 m^3	-	-	-	-	-	-	-	-	-	-	
		Charcoal export	1,000 m^3	-	-	-	-	-	-	-	-	-	-	
		Industrial wood production	1,000 m^3	756	753	919	1,039	1,155	948	1,035	1,198	1,543	1,539F	
		Industrial wood import	1,000 m^3	-	-	-	-	-	-	-	-	-	-	
		Industrial wood export	1,000 m^3	115	21	1	2	3F	-	2	-	-	-	
Breakdown of industrial wood	Production for sawing and single board		1,000 m^3	600F	597	688	801	860	817	897	872	1,204	1,200F	
	Import for sawing and single board		1,000 m^3	-	-	-	-	-	-	-	-	-	-	
	Export for sawing and single board		1,000 m^3	114	21	1	-	-	-	-	-	-	-	
	Production for other industrial uses		1,000 m^3	156	156	231	238	295	131	138	326	339	339F	
	Import for other industrial uses		1,000 m^3	-	-	-	-	-	-	-	-	-	-	
	Export for other industrial uses		1,000 m^3	1	-	-	2	3F	-	2	-	-	-	
	Production, import and export of mine timber, pulp material/particle are not included.													
Lumber production			1,000 m^3	210	220	256	315	330	340	375	517	785	785F	
Lumber import			1,000 m^3	-	-	-	-	-	-	-	-	-	-	
Lumber export			1,000 m^3	84	122	149	197	149F	97	146	145	269	265	
Railway sleeper production			1,000 m^3	3	10	13	10	10	5	6	5	6	6F	
Railway sleeper import			1,000 m^3	-	-	-	-	-	-	-	-	-	-	
Railway sleeper export			1,000 m^3	-	1	4	3	1F	2	-	1	2	1	
Wood pulp production			1,000 m^3	16	14	15	20	17	12	18	18F	18F	18F	
Wood pulp import			1,000 m^3	-	-	-	-	-	-	-	-	-	-	
Wood pulp export			1,000 m^3	2	3	11	8	8F	9	15	26	42	67	

20. (continued)

	Unit	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	Remarks
Single board production	1,000 m^3	9	6	5	8	8F	9	14	14F	14F	14F	
Single board import	1,000 m^3	-	-	-	-	-	-	-	-	-	-	
Single board export	1,000 m^3	-	-	3	6	7F	8	12	22	37	63	
Plywood production	1,000 m^3	7	7	9	11	8	2	2	2F	2F	2F	
Plywood import	1,000 m^3	-	-	-	-	-	-	-	-	-	-	
Plywood export	1,000 m^3	2	3	8	1	1F	1	3	3	4	4	
Particleboard production	1,000 m^3	1F	1	1	2	2F	2F	2F	2F	2F	2F	
Particleboard import	1,000 m^3	-	-	-	-	-	-	-	-	-	-	
Particleboard export	1,000 m^3	-	-	-	-	-	-	-	-	-	-	
Paper and paper board production	1,000 MT	-	-	-	-	1	1	1	1F	1F	1F	
Paper and paper board import	1,000 MT	5	6	8	9	7F	9	13	14	15	16	
Paper and paper board export	1,000 MT	-	-	-	-	-	-	-	-	-	-	
Newsprint production	1,000 MT	-	-	-	-	-	-	-	-	-	-	
Newsprint import	1,000 MT	3	4	5	3	3F	4	7	7	6	8	
Newsprint export	1,000 MT	-	-	-	-	-	-	-	-	-	-	
Printing and letter paper production		1	1	1	2	1F	2	2	3	4	4	
Printing and letter paper import		-	-	-	-	-	-	-	-	-	-	
Printing and letter paper export		-	-	-	-	-	-	-	-	-	-	
Other paper and paperboard production		-	-	-	-	1	1	1	1F	1F	1F	
Other paper and paperboard import		2	2	2	3	3F	3	4	3	5	4	
Other paper and paperboard export		-	-	-	-	-	-	-	-	-	-	

(Source) FAO year book of forest products.

(Notes) 1. These marked with F are estimates by FAO.

2. Tree species are only broad-leaf trees without any coniferous tree.

21. QUESTIONNAIRE SURVEY OF PAPER & PULP PLANTS

Ville Used Paper Reclamation Plant

(1) The plant was constructed in 1980.

(2) Employees: (Plant) 50, male
(Office in Asunsion: male, 5, female, 3, sales and general affairs)

(3) Plant site: 1.5 ha, Plant building: 4,000 m^2

(4) Manufacturing capacity ranges between 600t and 800t based on three shifts a day, but the current capacity utilization rate is below 50%, producing between 250t to 300t with three shifts a day, three days a week operation.

(5) At present, machine paper products are:

white cardboard paper	200-500g	80-100t	per month
colored cardboard paper	300-800g	30-60t	"
corrugated cardboard paper	150-200g	120t	"
kraft paper	280g	20t	"
cardboard for paper container	250-600g	10t	"

(6) As for operating history, the company initially started out with a monthly production of 80t but it exceeded 200t since last July (1982) and has been stable ever since. The company considers it possible to step up production in the future depending on the trend of the national economy.

(7) For material, it collects used papers, but the supply tends to be short due to the limited collection market. The company has not used pulp so far, but if conditions permit, it wishes to use pulp for coating white cardboard and cardboard for paper containers. The company also wishes to use kraft pulp for export packaging of meat.

(8) As for collection of used papers for material:

a) The company makes a round of the dump yards in Asuncion twice a day from where it buys used papers by the weight from 30 sorters.

b) The company collects from 40 printing houses immediately upon call.

c) The company also buys from newspaper companies.

d) Recovery of used papers from general households is difficult. It is also difficult to recover from schools, churches, customs office and other institutions.

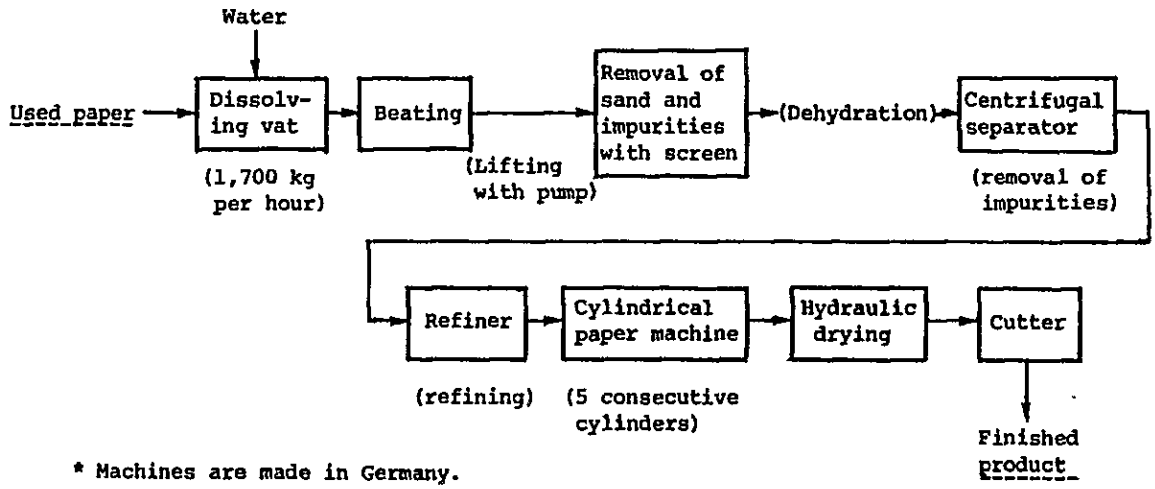
e) Besides the above, the company collects empty cement bags from major construction companies.

f) The company assigns 25 workers to its used paper accumulation yard.

g) The company used to collect about 25t to 30t of used papers a day at the time of its founding but the present rate is only 10t to 15t a day.

(9) The company considers its business meaningful as imports of paper are decreasing.

(10) Manufacturing processes are as follows:



* Machines are made in Germany.
* Power generation 1,200 kVA.
* For process water, both the surface water and river-bed water from river are used.

(11) The industry consists of one other cardboard producing company (producing 30t per month) and one other toilet paper producing company (50-70t per month). In view of competition in collecting materials, the company has made an agreement to collect materials in behalf of the toilet paper manufacturing company and supply same to that company besides its own.

(12) The company, now, has trouble in importing machines and chemicals for operating them. The company has applied for import of rosin for sizing some months ago but has received no response yet.

(13) As for its financial performance, it is incurring a monthly loss of 2 million Gs, but if monthly production reaches 350t, the operation will become profitable after depreciating facilities investment.

(14) The company will lose in the competition with imported paper if the exchange rate rises to 165 Gs to one U.S. dollar, and win if the rate falls to 365 Gs to one U.S. dollar.

Misiones Mill, Papel Misionera S.A.

(1) It is a KP process (sulfate pulp process) plant constructed by the assistance and guidance of Marubeni and Daishowa Seishi of Japan. Design and managerial guidance were undertaken by Daishowa. Design is considered quite rational.

(2) Its installed capacity is 110t/day. (120t/day according to the 1978 edition of Pulp and Paper World Review.*) Operating rate has been improved up to 130t/day for light paper and 140t/day for heavy paper.

(3) Products covered are kraft paper in the weight range of between 70g to 270g, but as of now, 130g to 140g papers are being manufactured. Uses are for packing of cement, sand and lime, and for corrugated cardboard; also those which are resistant to strong moisture are used for packing of meats and apples.

(4) The market outlets are fabrication plants in Cordova and Buenos Aires, with some shipments being made to other departments, too. In these markets, import substitution is in progress. Some exports had also been made to Bolivia and Paraguay, but now, all products are domestically consumed.

(5) The total number of employees including guards and purchasing personnel is 450, of which 20 is clerical. (Office workers in Posadas are not included.)

(6) Expansion of facilities from 145t/day to 185t/day is being planned, for which negotiation with Daishowa is now under way.

(7) Supply and demand seems to be basically in balance now. Some extra availability for exports is anticipated with the onstream of Cellulosa Argentina's new plant. Accordingly, even though special kinds of papers are being imported now, with the ban on imports of paper, their local production is most likely.

(8) Crude wood cost is considered to be around 17% of the total. The market price of crude wood has been stable between 1979 and 1983, but is on a rising trend recently. With new plants and capacity additions by various companies, a crude wood supply shortage and resulting price rise is anticipated in the 1986-1989 period, but beyond 1994, the price is likely to stabilize again due to the increase in supply from planted forests.

(9) As for curde wood tree species, Taeda and Elliottii account for 80 to 90% with remaining balance accounted for by Arancaria and Eucalyptus. There is no price differential between tree species. However, Celulosa Argentina is reportedly paying more for Araucaria than for other tree species.

(10) The company-owned forest is about 1,500 ha, and it has planted 100 ha to 120 ha every year between 1972 and 1980. The company plans to implement afforestation of 1,076 ha in 1984 over the April - August period and continue planting 1,000 ha every year from now on. Tree species to be planted are mainly Elliotii and Taeda. It intends to increase the supply of crude wood from its own forest in future.

(11) Power requirement is satisfied with independent generation of 9,500 kW at present.

Misiones Mill, Celulosa Argentina S.A.

(1) The plant began operating in 1954 by relocating used equipment from Sweden.

(2) The manufacturing process employed is the S.P. process (sulfite pulp process). Its installed capacity is 300t/day of pulp. (The capacity is the same with paper according to the 1970 edition of Paper & Pulp World Review.*)

(3) The current operating rate is 50% with daily production of 100t, of which 50t is pulp.

(4) The products are being shipped to three markets including Santa Cupé and Bernal.

(5) 40% of crude wood is collected from the company's own forest (operated by a separate company) and 60% from areas within 50 km from the mill.

(6) The company owns forest of 62,000 ha, of which 20,000 ha is planted forest, with Taeda pine and Elliottii pine accounting for about 70% and Araucaria and Eucalyptus accounting for about 30%.

(7) The company is stocking four month supply of crude wood and is now studying timber storing in chips.

(8) The company is now building a new mill by the BKP process (bleached sulfate pulp process) with a planned installed capacity of 500t/day. (According to the 1978 edition of Pulp & Paper World Review, the company sets the capacity expansion targets to 475,000t annual pulp production and also to 166,000-525,000t annual paper production.

(9) The Province of Misiones' artificial afforestation area is about 160,000 ha but it estimates that additional planted forests of a size twice as large would become necessary in the future.

22. WOOD PROCESSING PLANT SURVEY RESULTS

Company and plant	Supply source of crude wood	Crude wood buying volume and species	Crude wood buying price and buying method	Financing	Facilities and operating status	No. of employees and wage	Sales method and outlets	Sales conditions and sales revenues	History	Outlet conditions	Exports	Problems and future responses
Viviendas Peterby (Construction company)	* (Catalogs and specifications for logs used are attached separately)											
Tajy Poty (Sawmill)	From neighborhood of Stroessnel and Colonel Oviedo. No chartered crude wood trader.	Cedro, basal dia. 1m - 40cm			100 APm^3/day, band saw with feed carriage 120cm, 1 set	9 workers	Sales shop in city, products in stock, board, 28.5 x 2.5 35 x 2.5 24 x 2.5	Lapacho 10 - 11 Gs, 1 x 1 x 1 inch sold at 27Gs	10 years since its foundation, originally sawmill product dealer			
Matro S.A.L.C. (molding plant)	Specialized job sawing mill				Band saw for lumbering, 1 set, molding processor, 1 set artificial drying chamber						Only for exports	
Kravets Co. (Furniture shop)	From 3 chartered sawmill operators (of which one has its own forest)	Petervý, Yvyrá ró, rarely Trebol	Purchase for cash at lumber warehouse in Asuncion. Peterevý and Yvyrá ró at 14 - 16Gs for 1 inch square x 1m, Trebol at 40 - 50Gs for 1 inch square x 1m.	Working capital 30 million Gs, of which 14 million Gs borrowed from specialized investment bank at interest rates ranging between 24%-30% a year. The interest rate of the Hypothec Bank ranges between 12%-15% but procedures are cumbersome. The company borrowed from it in the past.	Wood working machines	40 workers with good quality.	Sales store also in city. 3 million to 6 million Gs monthly.				Wishes to export to U.S.A., Chile and other South American countries.	

Company and plant	Supply source of crude wood	Crude wood buying volume and species	Crude wood buying price and buying method	Financing	Facilities and operating status	No. of employees and wage	Sales method and outlets	Sales conditions and sales revenues	History	Outlet conditions	Exports	Problems and future responses
Nill Co. (Furniture manufacturer)	Buy from brokers and sawmill operators who come to sell. A few German companies always make sales calls. Irregular traders also come. Separate suppliers for plywood and veneer and core board. Materials are brought from Caaguazu, 280 km away, and Alto Parana, 300 km away, both along the National Highway No. 2.	Purchase volume 15,000 - 20,000 Gs (1 inch square x 1m) per trader. Cedro = 80%, Trebol = 5%, Peterevỳ, Timbó (for inner lining, 10%), Yvyrá ró, Incienso, Guatambú (for inner lining).	Purchased for cash, every board is inspected and sapwood and short dimensions are rejected. Those close to export specifications are 18Gs. Export specification woods: Cedro = 25Gs/inch, Trebol=40Gs/inch, mostly hand sawn, peterevỳ=20Gs/inch, became fewer, Timbó=14Gs/inch, Yvyrá ró=15Gs/inch, Incienso=17Gs/inch, Guatabú=15Gs/inch.	No borrowing for working capital, facilities also bought by own money. Large timber stock. Natural drying, including many aged timbers.	Many wood working machines. Above 50 different kinds. 120 KVA. Operating rate 80% (one shift 100%). Yields: sawmill products 80%, plywood and veneer 95%.	(Plant) 70 males, 25 year old 40,000 Gs Office (with sales shop) 6 males, 6 females, 30 year old 60,000 Gs.	Two sales centers, retailing, hardly any claim. After-sales services also provided.	Both cash sales and monthly installment sales. (Credit up to 18 months with 20% down payment) Monthly sales 10 million to 15 million Gs.	60 years since its foundation. Relocated to the present address and expanded 9 years ago.	90% of sales in Asuncion, with 10% in other localities. Besides general households, sales are also made to hotels, banks and offices but the demands decreased recently.	The company thought of exporting business but lost in competition with Japan in Taiwan and Yugoslavia. Knock-down export for assembly and sale in the U.S.A. is difficult because of high wages. 7% export tax is another obstacle.	The company's policy is to raise the ratio of Scandinavian type medium grade products from present 20% because the demand by household sector is steady. It advertizes through TV and newspapers.
La Perseverania Co. (sawmilling and fittings plant)	Purchased from Alto Parana, Caaguazu, San Estanislao. Though purchased from specified dealers, no agreement on prices, etc. has been made.	Lapacho 1st grade, Cedro 1st grade, Kurupay 2nd grade, Incienso flooring 1st grade, Taperyva flooring 1st grade, Peterevỳ 1st grade, Timbó 3rd grade, Yvyrá Pytá 4th grade, Yvyrá ró 2nd grade (a few timber stock).	Purchase price not clear (as a clerk was interviewed).	Not clear	200 Hp steam engine; 150cm band saw with large feed carriage, 1 set; small band saw, 1 set; band saw for wood working, 1 set; palner, 1 set; tupi, 1 set; molding machine, 2 sets; Saw mill operating rate: with Lapacho, 600 AP m^3/day, operating at 60%-70%. 100% operation up to July.	Sawmill workers - 90, molding workers - 15, woodworking workers - 15.	50% for exports, 50% for domestic sales, fittings to building contractors, molding for domestic sales.	Not clear. Door, 0.45 x 1.50 at 14,900 Gs, 0.80 x 2.10 at 14,700 Gs, 0.70 x 2.10 at 14,500 Gs. Door with Cedro board and Lapacho frame: 0.8 x 2.10 at 17,000 Gs, 0.7 x 2.10 at 17,100 Gs, 0.6 x 2.10 at 16,900 Gs.	45 years since its foundation.	Not clear. Orders received because of performance and customer trust.	Not clear.	The company places much hopes on the Yacyreta Project and recovery of Asuncion market.

Company and plant	Supply source of crude wood	Crude wood buying volume and species	Crude wood buying price and buying method	Financing	Facilities and operating status	No. of employees and wage	Sales method and outlets	Sales conditions and sales revenues	History	Outlet conditions	Exports	Problems and future responses
Maderas Recoro S.A. (sawmilling, flooring)	As it owns 6,000 ha of forests in north Caaguazu, it may cut trees sometimes. It also buys from crude wood traders in Caaguazu and Alto Parana. About 10 traders are specified, and the plant and 6 other saw mills buy jointly from them.	Price of crude wood is determined at each purchase. Per APm^3, 500 to 700 Gs for the 1st grade Cedro, Lapacho, Yvyrá rò, 250 Gs for Guatambù and Peterevỳ, 250 Gs for Yvyrá pytà and Incienso with some fluctuations.	(a. Sawmilling) Crude wood is brought from sawmills to this plant for processing. (b. This plant) 25,000 AP m^3 per month. Every bundle of 150 AP m^3 is strictly inspected. Measurements do not pose any problem but defects are found once in a while and settled later.	Borrowing land acquisition bund, working capital and investment fund from 3 banks. Loan from the Industrial Bank on 6 saw mills also.	(a. Saw milling) Total of 6 saw mills: 25,000 AP m^3 per month, operated at 70% of capacity. (b. This plant) Molding 1 set, mosaic processing 2 shifts, molding 70% operation, mosaic processing idle, yields: saw milling 60% (1st grade 30, 2nd grade 30) molding 80%, mosaic 80%.	(a. Saw milling) Plant - 60 workers (b. This plant) If mosaic is put to operation, 100 male workers. 40,000 Gs for saw mill worker and 50,000 Gs for processing worker per month, with average age of 25.	a. 100% of products for exports. To Argentina = Cedro, Lapacho, to Uruguay = Peterevỳ, Guatambù, to North America = Guatambù, to Israel = Guatambù, to Mexico and Italy = Cedro, Guatambù. b. Domestic sales are either in cash or settlement in 30 days. Customer complaints on quality sometimes take place.	Export settlement rate is 143 Gs per U.S.$ (50% at 126 Gs, 50% at 160 Gs), $150,000 to $160,000 a year. FOB Asuncion prices $330/m^3 for Cedro, ¥310 for Lapacho, ¥320 for Yvyrá rò, $330 for Peterevỳ, $200 for Guatambù. About 10% higher than export prices set by the Central Bank and leave some profit. Shipment to Argentina is either by rail or truck. Claims are settled either by negotiation or by price discounts. Molding is 3,000 m^2 per month at 1,000 Gs/m^2.	15 years since its founding.	Domestic sales are to building contractors or individual persons in Asuncion market.	(AFORO) Minimum export prices set by the Central Bank: $280/m^3 for Cedro, $275 for Lapacho, $270 for Yvyrá rò, $280 for Peterevỳ. Export by rail on a 25 to 30 m^3 freight car, export by truck on a 30 m^3 truck.	Future expansion not being planned. Efforts will be made to improve operating rate as before. On exports, Argentine L.C. settlement poses problem.

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LA RA 5, R.L. Co. (plywood manufacturing) Stopped operating in January 1983. Clerks in charge of caretaking only.	6,000 ha of company's own forest in Canendiyu Department. Supply comes from Alto Parana, Caaguazu and San Pedro.	Cedro, Guatambú, Guaicá, Yvyrá ró, Peterevÿ, Trebol, Yvyrá pytá. Buys by the carload, 90 - 100 AP m^3. Lump sum settlement in cash at the end of month. Inspected and received by every wood.	Prices unknown	Not clear	Substation capacity not clear. Rotary 1 set, slicer 1 set, press 2 sets, drying chamber, calender 2 sets, yield unknown.	(Workers) 70 males and 10 females (Females for drying and sorting of veneer), average age 32 (Clerks) 3 males, 2 females, 30,000 Gs + overtime allowance + family allowance	Stocks are carried for sale at wood working shop and furniture workshop. Market is Asuncion.	80% cash sales and 20% on credit. Sawmilling per one inch square: Cedro 29 Gs, for export 30 Gs, Guatambú 1st grade 24 Gs 2nd grade 16 Gs, Yvyrá ró 1st grade 33 Gs and grade 24 Gs, Peterevÿ 1st grade 44 Gs 2nd grade 34 Gs, Guatambú 29 Gs, Trebol 55 Gs, Door (medium hard) 18mm, 3,000 Gs/m^2, door (core) 1,780 Gs/m^2.	20 years since the company's foundation and 9 years since the start up of this plant.	Had been exporting to Argentine, Uruguay, Mexico, Peru.	Plywood 4mm Cedro $660, Guatambú (Standard) 370, Guaicá 370, Peterevÿ, export 1,050 standard 850, Trebol (export) 1,760 (standard) 1,350.	Export shipment stopped due to foreign currency shortage at export destinations. Venezuela devalued its currency and Paraguay ought to do something, too.
Fabril Co. (fittings manufacturing)	Saw mill logs are bought from Alto Parana, and Caaguazu.	Lapacho, Cedro, Guatambú, Timbó, Peterevÿ. Monthly average purchase volume 300,000 square inches.	Saw mill log price delivered to Asuncion per inch: 20 - 24 Gs for 1st grade Lapacho and Cedro, 18 Gs for Guatambú, 15 Gs for Timbó, 24 Gs for Peterevÿ per truckload 18,000 to 20,000 square inches. Payments in either one of 30 days, 60 days or 90 days. Every board is inspected according to the quality specifications.	Facilities financed out of internal fund. Negotiation with the Industrial Bank is under way for borrowing 44 million Gs to finance core board facilities but the prospect is not necessarily bright. Annual interest and commission 18%.	Drying chamber besides woodworking machines.	Woodworking department: (Worker) 80 males, average age 25-26, hourly wages: above 350 Gs for higher paid and 160 Gs for lower paid. (Office workers) common to three departments of car body, flooring and wood working, 6 males and 4 females, average age 28 to 30, base monthly pay between 50,000 Gs and 60,000 Gs.	Through sales shop in city. Daily sales various such as for one house or one building. Payment term 3 month or 6 month credit without distinction by customer Class. Customer complaints due to delay in import of laminate which are settled by obtaining customer understandings. Advertized by pamphlets and advertizing materials.		15 years since its foundation. Initially a manufacturer of cement tiles. Current business form since five years ago. Has three departments of bus and truck body manufacturing, floor tile manufacturing and wood working.	Sales area Asuncion. Sold to construction firms and individuals.		Sales are sluggish lately and the company is waiting for business recovery. Wishes to participate in Yacyreta Project. Plans to commence core board manufacturing.

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Fabril Sales Shop						3 males and 2 females						

23. PULP WOOD CONSUMPTION BY PULP GRADE IN JAPAN (1982)

Grade	Pulp Wood Consumption Volume (%)										Volume of Wood per ton of pulp (m³/ton)	
	Domestic Wood				Imported Wood				Total	% in Grand Total		
	N	L	NC	LC	N	L	NC	LC			1982	1981
DSP	0.1	1.4	14.0	64.4			4.7	15.4	100.0	3.7	3.87	3.90
BSP			100.0						100.0	0.5	3.96	3.74
USP				19.4			80.6		100.0	0.6	2.73	2.87
BKP	0.3	2.7	7.7	45.4		0.4	12.7	30.8	100.0	51.1	3.52	3.57
UKP	1.0	0.4	40.7	10.2		0.1	43.7	3.9	100.0	27.7	4.29	4.24
SCP	0.3	0.4	39.2	38.8			4.2	17.1	100.0	2.5	2.49	2.42
CGP			25.0	61.3			3.6	10.1	100.0	2.2	2.16	2.14
TMP	8.2		54.5				37.3		100.0	5.3	2.33	2.37
RGP	2.2		53.5				44.3		100.0	2.6	2.20	2.22
GP	99.9					0.1			100.0	3.8	2.10	2.08
Total	4.6	1.4	20.9	30.4		0.4	25.1	17.2	100.0	100.0		

(Source) Japan Federation of Paper Manufacturing Association
(statistics for members)

(Note) N=Needle-leaved trees NC=Needle-leaved chips
L=Broad-leaved trees LC=Broad-leaved chips