表4.1　ソンドゥ川流域における年降雨（2/3）

ID.No.	'9034024	'9035001	'9035003	'9035013	'9035067	'9035075	'9035079	'9035129	'9035233	'9035253	'9035260	'9035261	'9035292	
ST.	Crigmore	Jamji	Kericho	Sotik	Reginget	Kaisuge	Kenwik	Marindas	Teret	Chepielwa	Koiwa	Ngoina	Ndoinet	Basin
Name	Sotik	Estate	DC.	Monieri	Estate	House	Mission	Farm	Forest St.	S. Scheme	Estate	Estate	Forest St.	Rainfall
1934	1086	1343	1505	1308										
1935	1283	1832	1875	-										
1936	1380	1783	1917	1458										
1937	1844	2082	2294	1398										
1938	1209	1715	1856	1209	1096									
1939	1234	1272	1456	910	861	1211								
1940	1393	1630	1843	1373	1156	1851	1201							1492
1941	1655	1907	2223	1459	1479	2183	1522							1775
1942	1566	1586	1814	1312	1429	1606	1376							1527
1943	1267	1290	1386	1240	-	1242	1069							1249
1944	1588	1752	1455	1343	1049	1622	1571							1483
1945	1249	1285	1713	1362	985	1808	1021							1346
1946	1448	1451	1672	1254	1218	1608	1356							1430
1947	1735	1852	2342	1621	1165	2182	-							1816
1948	1312	1610	1914	1366	1056	1478	1151							1412
1949	1248	1044	1906	1082	1016	1397	1128							1260
1950	1402	1557	1941	1304	885	1518	1148							1394
1951	1756	2048	2456	1789	1469	2121	1752	1510						1863
1952	1421	1779	1858	1376	934	1423	1392	-						1455
1953	1085	1292	1562	1057	764	1292	1415	-						1210
1954	1192	1485	1764	1214	1187	1863	1399	1435						1442
1955	1719	1565	1781	1366	1248	1693	1051	1556						1497
1956	1283	1675	1764	1270	1369	2238	1186	1779						1571
1957	-	1657	1682	1518	1164	1772	1452	1071						1474
1958	1369	1624	1803	1552	1234	1633	1271	1084						1446
1959	1355	1593	1850	1265	987	1883	1179	1073						1398
1960	1557	1559	2125	1247	-	1929	1270	1192						1554
1961	1710	2060	2632	1646	1487	2126	-	1434	1564					1832
1962	1767	1833	2273	1517	1227	2010	1712	-	1075					1677
1963	1838	1935	2097	1581	1324	2170	1635	1208	1379					1685
1964	1419	1833	2002	1322	1229	1826	1161	1339	1243					1486
1965		1571	1665	1232	834	1526	1531	714	584	1195				1206
1966		1810	1753	1410	1141	1611	1568	1127	859	1394				1408

表4.1　ソンドゥ川流域における年降雨（3/3）

ID.No.	'9034024	'9035001	'9035003	'9035013	'9035067	'9035075	'9035079	'9035129	'9035233	'9035253	'9035260	'9035261	'9035292	
ST.	Crigmore	Jamji	Kericho	Sotik	Reginget	Kaisuge	Kenwik	Marindas	Teret	Cheplelwa	Koiwa	Ngoina	Ndoinet	Basin
Name	Sotik	Estate	DC.	Monieri	Estate	House	Mission	Farm	Forest St.	S. Scheme	Estate	Estate	Forest St.	Rainfall
1967		1829	1986	1536	1453	2119	1267	1180	1105	1156		1537		1517
1968		1997	2388	2021	1504	1753	1545	1270	-	1693		1847		1780
1969		1413	1380	1227	930	1405	1278	766	1062	1164		1396		1202
1970		2033	2373	1644	1691	2146	1760	1335	1557	-		1708		1805
1971		1447	1773	1220	1399	1855	1277	1244	1194	-	1599	1330		1434
1972		1539	1957	1232	924	1695	1366	814	903	1267	1973	1435		1373
1973		1666	1903	1346	1184	1576	-	822	675	1466	1769	1705		1411
1974		1519	1785	1496	1208	1840	-	-	1017	-	-	-		1478
1975		1692	1643	1391	1255	1878	1505	-	1158	-	1647	-		1521
1976		1545	1691	1446	857	1358	1138	-	767	-	-	-	1180	1248
1977		1745	2120	1702		2041	1429	1485	1473	-	2252	-	2028	1808
1978		2345	2433	1591		2171	1625	1576	1281	-	2098	-	1905	1892
1979		1736	1638	1321		1581	1384	-	1407	-	1628	-	1456	1519
1980		1482	1369	1244		1436	-	982	805	-	1683	-	1368	1296
1981		1865	1887	1555		1819	1500	1302	943	-	-	-	1785	1582
1982		1812	2435	1573		1855	1563	1344	1140	-	2042	-	1938	1745
1983		1440	2017	1421		2094	1332	1505	1095	-	1852	-	1479	1582
1984		1434	1699	1228		1468	1205	605	530	-	-	-	1043	1152
1985		1462	1960	1652		1692	1488	1272	1120	-	-	-	-	1521
1986		1256	1407	1174		1433	1174	1125	1002	-	1721	-	1291	1287
1987		1306		1171		1943	1485		884	-	1809	-	1341	1420
1988		1978		1421		2113			1186	-	2317	-	-	1803
Sample	36	65	82	71	37	50	43	29	27	7	13	7	11	49
Mean	1439	1639	1858	1382	1173	1762	1368	1212	1074	1334	1876	1565	1529	1505
Min.	1085	1044	1167	910	764	1211	1021	605	530	1156	1599	1330	1043	1152
Max.	1844	2345	2632	2021	1691	2238	1760	1779	1564	1693	2317	1847	2028	1892

表4.2　ソティッククレグモアにおける月雨量記録

District: KERICHO
Station: SOTIK,CRAIGMORE
ID. Number : 903424
Latitude : 0°49'30"S
Longitude : 34°59'E
Altitude : 1951 El.m

Unit:mm

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	Max.24	D/M
1928	70	52	120	200	310	176	77	111	96	105	97	63	1478	-	-
1929	18	18	167	143	147	102	87	77	124	31	116	135	1165	-	-
1930	179	88	187	284	197	149	57	98	161	87	131	32	1650	-	-
1931	41	69	253	217	104	149	138	133	114	73	72	126	1488	-	-
1932	62	87	196	148	94	144	107	183	141	84	60	86	1390	-	-
1933	171	61	62	29	208	87	81	156	137	110	34	120	1256	-	-
1934	36	109	70	78	66	120	124	97	70	61	91	163	1086	-	-
1935	3	151	130	182	216	99	33	87	134	101	54	94	1283	-	-
1936	112	226	259	155	71	70	68	112	28	62	28	190	1380	-	-
1937	117	74	281	264	245	186	163	89	22	64	242	99	1844	-	-
1938	163	41	149	102	92	134	55	105	64	94	68	141	1209	-	-
1939	23	105	133	230	50	183	75	213	33	33	109	47	1234	-	-
1940	178	139	184	211	123	64	87	92	37	75	157	47	1393	-	-
1941	108	128	129	155	171	218	54	242	64	58	167	161	1655	-	-
1942	66	40	382	188	148	110	21	343	115	16	44	94	1566	-	-
1943	27	167	89	181	233	180	36	146	93	40	39	36	1267	-	-
1944	75	59	159	215	82	107	84	155	308	34	146	163	1588	-	-
1945	73	96	34	76	285	168	71	162	81	51	99	54	1249	-	-
1946	47	9	47	170	204	175	74	186	155	171	100	109	1448	-	-
1947	208	172	189	256	88	210	104	71	203	97	55	83	1735	-	-
1948	43	38	204	112	114	220	74	149	119	100	65	76	1312	-	-
1949	24	41	70	157	82	131	94	236	105	80	72	156	1248	-	-
1950	52	79	154	245	121	147	148	152	115	103	45	42	1402	-	-
1951	46	241	112	440	104	152	27	96	110	89	153	196	1765	-	-
1952	69	141	159	214	263	36	132	98	137	79	66	28	1421	-	-
1953	67	19	87	223	103	139	17	49	101	89	61	131	1085	-	-
1954	71	50	35	282	224	132	59	51	63	58	48	121	1192	-	-
1955	80	132	141	244	183	98	87	154	201	131	108	159	1719	-	-
1956	189	66	141	104	121	114	66	150	134	48	83	69	1283	-	-
1957	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1958	54	113	166	110	193	100	103	184	107	102	31	106	1369	-	-
1959	78	112	239	133	85	18	42	97	181	152	149	69	1355	-	-
1960	136	96	343	164	84	69	64	184	131	68	121	97	1557	-	-
1961	13	154	168	159	85	65	8	142	154	172	327	263	1710	-	-
1962	127	67	139	172	357	216	119	121	110	100	134	106	1767	-	-
1963	146	133	131	338	241	98	63	66	30	25	224	345	1838	-	-
1964	64	162	92	270	180	99	109	103	129	95	34	81	1419	-	-
Mean	84	98	156	190	158	129	78	136	114	82	101	114	1439		
Min.	3	9	34	29	50	18	8	49	22	16	28	28	1085		
Max.	208	241	382	440	357	220	163	343	308	172	327	345	1844		

表4.3　ジャムジエステイトにおける月雨量記録

District: KERICHO
Station: JAMJI ESTATE
ID. Number : ,9035001
Latitude : 0°28'S
Latitude: 0°28'30"S
Longitude : 35°12'E
Altitude : 1829 EL.m

Unit:mm

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	Max.24	D/M
1923	-	249	144	289	269	136	204	56	129	111	79	88	-	-	-
1924	5	55	87	269	297	23	73	223	126	79	89	78	1405	55	8/5
1925	140	31	185	34	189	145	140	219	28	117	260	52	1540	52	20/8
1926	65	136	203	343	183	151	118	125	208	168	145	116	1961	59	17/9
1927	98	51	99	193	133	76	55	145	90	39	158	83	1220	38	31/1
1928	46	47	135	290	362	133	80	144	98	118	141	51	1645	45	20/5
1929	14	7	100	149	128	221	117	102	110	85	77	229	1338	112	8/6
1930	124	67	226	294	192	113	101	154	298	157	81	22	1829	56	3/10
1931	32	38	375	324	275	186	175	46	96	80	72	130	1828	66	4/7
1932	45	116	219	180	322	130	103	141	119	120	49	64	1608	71	11/5
1933	139	71	44	98	185	111	152	154	164	84	44	82	1327	45	28/1
1934	20	37	64	105	165	140	163	126	104	104	156	158	1343	51	16/12
1935	8	323	128	157	299	231	118	68	133	159	65	143	1832	85	24/2
1936	149	177	201	207	209	157	70	161	141	120	61	131	1783	56	7/3
1937	58	87	202	339	303	214	196	169	61	122	245	86	2082	61	10/5
1938	77	47	298	274	175	134	149	143	141	147	65	64	1715	61	24/3
1939	54	107	71	322	90	160	109	102	70	31	105	50	1272	59	11/6
1940	136	149	245	217	170	122	153	154	47	63	146	30	1630	50	28/2
1941	44	123	142	243	347	166	77	169	89	107	213	186	1907	48	13/5
1942	44	39	267	238	265	125	20	275	113	47	48	106	1586	46	10/12
1943	19	88	88	155	322	146	134	113	89	41	52	42	1290	79	12/5
1944	23	45	227	387	133	61	144	119	161	134	147	172	1752	57	28/3
1945	87	60	20	55	249	190	151	103	166	54	73	77	1285	45	4/7
1946	26	30	89	182	205	225	89	193	148	108	75	81	1451	43	5/6
1947	214	166	231	337	224	153	97	95	148	50	41	96	1852	69	8/1
1948	45	14	130	214	203	240	153	208	225	62	71	44	1610	58	18/4
1949	3	53	4	169	177	101	77	100	121	58	27	154	1044	32	27/5
1950	98	27	240	255	292	97	141	87	91	135	60	34	1557	64	20/3
1951	99	125	186	422	246	131	28	94	64	145	198	310	2048	58	19/4
1952	38	90	136	486	374	110	225	76	49	126	65	3	1779	93	19/7
1953	87	5	64	173	176	144	58	73	88	129	178	115	1292	34	29/11
1954	52	39	68	187	308	226	80	132	129	108	35	122	1485	65	8/5
1955	50	169	96	159	193	92	142	140	216	90	103	115	1565	48	28/3
1956	209	92	152	258	215	133	67	139	160	72	110	70	1675	66	4/9
1957	86	46	173	382	257	132	86	133	73	91	127	71	1657	55	1/5
1958	58	98	153	219	238	105	119	138	64	131	60	241	1624	54	17/12
1959	62	77	203	226	189	73	96	156	146	122	189	52	1593	69	16/6
1960	85	124	179	236	165	97	88	142	86	243	69	44	1559	65	26/10
1961	6	71	146	245	218	100	26	223	168	193	424	241	2060	45	17/4
1962	169	22	208	290	266	149	88	113	130	192	78	127	1833	75	8/1
1963	167	127	152	266	219	125	102	199	15	33	318	212	1935	64	16/3
1964	49	221	190	347	145	110	127	80	175	198	34	157	1833	77	17/4
1965	40	56	130	249	167	77	136	107	100	232	161	116	1571	42	18/6
1966	59	116	331	388	126	79	121	154	165	81	140	50	1810	68	16/3
1967	34	38	162	244	304	176	142	160	90	115	242	122	1829	63	26/11
1968	95	244	177	296	138	175	194	170	55	127	182	144	1997	68	31/1
1969	89	158	189	90	221	96	30	122	199	85	101	34	1413	49	16/2
1970	316	87	258	286	177	124	117	183	140	158	71	116	2033	84	8/3
1971	104	2	41	250	274	91	129	187	114	75	87	93	1447	52	29/5
1972	181	110	72	107	149	136	78	95	61	222	232	96	1539	61	31/1
1973	167	157	28	185	247	214	82	159	204	96	104	23	1666	40	25/8
1974	28	32	195	371	182	128	140	96	159	72	71	44	1519	50	13/4
1975	5	49	218	294	179	84	145	267	174	117	53	106	1692	62	9/8
1976	18	98	86	242	265	175	198	199	83	28	91	63	1545	55	16/2
1977	157	92	144	219	192	205	125	87	55	162	236	73	1745	64	11/6
1978	59	211	336	314	179	281	148	181	191	154	114	188	2354	60	11/3
1979	97	112	192	268	283	223	84	108	88	41	102	137	1736	57	27/12
1980	56	61	191	240	214	89	72	80	181	59	219	22	1482	44	23/9
1981	36	84	194	395	271	92	186	121	214	157	33	81	1865	60	10/4
1982	62	62	131	246	304	46	83	194	74	215	222	173	1812	46	28/4
1983	68	91	78	251	111	155	96	127	83	232	84	64	1440	-	-
1984	104	36	56	317	120	69	100	127	111	127	153	116	1434	47	8/1
1985	75	51	168	285	205	80	172	119	68	44	125	70	1462	50	13/4
1986	4	99	91	268	151	75	133	75	82	93	72	113	1256	57	10/4
1987	81	75	137	168	182	160	127	101	84	58	112	21	1306	57	6/6
1988	230	53	169	333	291	66	170	221	115	177	100	55	1978	57	17/4
1989	22	124	230	356	-	-	-	-	-	-	-	-	-	-	-
Mean	79	90	158	252	220	135	117	139	121	114	120	101	1639		
Min.	3	2	4	34	90	23	20	46	15	28	27	3	1044		
Max.	316	323	375	486	374	281	225	275	298	243	424	310	2354		

表4.4　D.Csオフィス（ケリッチョ）における月雨量記録（1/2）

District: KERICHO
Station: D.C's OFFICE (KERICHO)
ID. Number : '9035003
Latitude: 0°23'S
Longitude : 35°17E
Altitude : '1981　EL.m

Unit:mm

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	Max.24	D/M
1905	160	38	357	235	208	61	168	212	193	212	153	240	2237	83	26/3
1906	24	255	280	244	192	79	89	237	95	120	122	68	1804	-	-
1907	64	36	11	386	261	172	103	87	121	160	88	27	1515	-	-
1908	84	171	91	203	205	104	216	285	168	198	207	124	2058	60	23/4
1909	24	4	23	282	148	80	148	132	144	89	125	180	1379	37	8/8
1910	41	21	159	218	193	203	182	244	147	182	124	134	1849	74	25/8
1911	21	20	250	268	200	186	62	127	97	69	302	30	1633	81	23/11
1912	38	224	139	302	179	134	115	198	184	106	124	70	1813	66	26/9
1913	25	127	151	229	276	216	149	74	42	115	117	125	1647	44	12/12
1914	47	50	158	182	289	162	160	280	203	122	219	56	1928	72	26/8
1915	77	5	273	182	302	311	183	160	123	180	150	88	2032	66	19/7
1916	144	104	65	273	218	248	169	219	359	191	44	47	2079	47	15/8
1917	151	219	71	451	234	265	78	141	213	249	59	20	2152	60	18/4
1918	80	23	9	271	201	111	76	167	33	46	118	33	1167	84	26/11
1919	30	177	336	309	160	134	156	114	221	165	117	22	1940	56	18/2
1920	41	19	194	237	235	193	120	213	83	153	105	84	1678	43	28/3
1921	29	199	58	50	208	197	148	134	146	90	67	39	1364	50	13/2
1922	67	173	231	203	263	177	91	211	252	170	61	51	1950	56	26/8
1923	2	221	113	482	230	119	228	168	170	256	83	107	2178	-	-
1924	22	158	51	237	313	79	210	193	135	103	135	36	1672	62	25/7
1925	200	5	181	68	252	155	147	215	53	98	264	88	1727	71	19/11
1926	146	168	175	422	162	139	182	189	208	155	232	89	2267	58	17/4
1927	58	97	102	290	274	152	159	145	105	26	194	67	1668	53	11/4
1928	54	55	125	384	387	151	84	90	52	192	139	25	1739	46	13/5
1929	12	9	136	219	207	111	167	140	151	95	81	141	1471	59	13/3
1930	171	83	282	346	319	161	92	198	202	87	46	57	2044	67	15/1
1931	36	36	247	260	217	197	208	158	183	115	130	151	1937	47	8/9
1932	44	60	297	160	353	106	102	172	220	106	62	84	1766	62	11/3
1933	90	67	70	92	277	96	211	275	167	129	62	100	1637	52	8/7
1934	14	28	90	131	223	121	245	237	106	96	112	105	1505	52	1/7
1935	8	279	95	213	264	272	106	196	138	153	41	108	1875	80	3/8
1936	148	230	227	218	184	183	102	182	92	103	79	168	1917	56	7/3
1937	81	119	190	359	378	203	225	188	43	202	225	83	2294	66	17/5
1938	47	34	189	209	273	192	249	255	161	160	21	66	1856	47	15/8
1939	45	80	115	319	120	142	191	165	71	65	125	27	1465	55	16/7
1940	100	194	256	202	199	119	170	154	59	115	265	10	1843	69	26/2
1941	15	146	147	326	298	246	133	246	75	167	264	160	2223	76	12/4
1942	25	17	355	353	253	137	90	283	118	73	36	74	1814	57	10/12
1943	16	113	87	173	272	159	113	148	144	31	45	86	1386	57	25/12
1944	26	35	129	177	247	87	129	123	220	33	147	103	1455	43	27/10
1945	57	44	23	67	226	147	283	233	375	101	60	98	1713	49	7/7
1946	8	5	200	319	177	196	123	264	107	128	55	89	1672	50	17/3
1947	220	61	95	399	326	211	232	309	251	108	39	91	2341	75	27/9
1948	27	17	117	304	248	307	287	170	155	147	81	54	1914	68	21/7
1949	14	28	2	370	227	175	178	265	395	51	75	126	1906	72	4/4
1950	71	76	157	276	390	229	203	149	169	160	39	22	1941	51	11/8
1951	79	60	231	517	253	122	76	171	80	267	247	351	2456	75	17/4
1952	45	93	114	376	298	52	172	180	165	176	166	20	1858	65	14/4
1953	55	13	89	237	245	196	110	173	55	176	103	110	1562	53	1/5
1954	21	29	52	339	312	172	151	178	179	129	71	131	1764	44	28/4
1955	36	170	85	199	262	92	191	191	171	109	152	123	1781	50	11/8
1956	210	37	111	234	310	181	130	158	103	133	83	73	1764	65	2/1
1957	79	72	183	298	261	200	81	141	122	85	104	56	1682	58	3/6
1958	100	126	200	158	277	121	160	158	203	101	63	137	1803	119	17/3
1959	86	181	204	246	261	105	82	137	147	135	200	66	1850	65	10/2

表4.4　D.Csオフィス（ケリッチョ）における月雨量記録（2/2）

District: KERICHO
Station: D.C's OFFICE (KERICHO)
ID. Number : 9035003
Latitude: 0°23'S
Longitude : 35°17E
Altitude : 1981 EL.m

Unit:mm

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	Max.24	D/M
1960	127	151	274	331	244	120	81	97	301	164	217	18	2125	67	10/11
1961	5	68	168	310	235	209	83	233	252	236	548	285	2632	56	26/11
1962	144	53	145	333	375	184	215	139	206	240	56	182	2273	81	26/5
1963	167	99	130	374	240	66	173	175	88	75	323	187	2097	60	2/12
1964	23	168	182	440	167	95	185	132	176	246	63	125	2002	78	2/3
1965	44	52	168	276	184	115	117	154	89	159	196	111	1665	42	5/3
1966	60	200	168	332	105	169	125	180	150	119	124	21	1753	43	20/3
1967	14	24	291	192	396	139	95	181	146	113	301	93	1986	69	1/5
1968	13	267	214	417	261	261	271	171	75	201	156	81	2388	74	26/2
1969	96	203	209	122	198	148	121	69	55	97	46	15	1380	42	28/1
1970	216	97	281	236	313	166	159	284	215	191	106	109	2373	93	9/3
1971	101	12	24	358	225	261	161	149	191	89	80	124	1773	47	14/4
1972	77	104	71	177	307	157	194	130	142	178	318	102	1957	44	2/5
1973	178	209	36	180	306	189	127	244	135	174	93	32	1903	54	15/1
1974	76	42	246	245	257	150	329	95	133	121	70	21	1785	63	1/3
1975	6	73	212	184	213	77	157	262	195	165	59	42	1643	52	20/10
1976	20	64	77	196	458	144	158	185	77	52	130	131	1691	45	19/12
1977	193	50	208	302	273	208	126	141	157	151	243	68	2120	-	-
1978	145	245	305	334	281	198	93	269	128	170	96	169	2433	-	-
1979	68	202	131	249	241	180	108	233	111	33	61	21	1638	-	-
1980	107	3	191	9	256	134	135	153	127	126	80	50	1369	38	14/10
1981	23	49	320	320	225	53	204	177	249	82	103	81	1887	-	-
1982	62	78	100	266	459	110	147	247	175	289	281	221	2435	69	2/12
1983	64	35	80	262	214	269	236	157	250	240	128	82	2017	68	18/7
1984	88	55	51	254	152	116	134	194	85	168	285	117	1699	112	11/11
1985	93	91	178	438	208	107	227	205	185	76	95	57	1960	41	11/9
1986	61	62	57	250	276	126	61	101	188	85	61	79	1407	-	-
Mean	72	96	157	267	254	159	154	183	154	137	133	92	1858		
Min.	2	3	2	9	105	52	61	69	33	26	21	10	1167		
Max.	220	279	357	517	459	311	329	309	395	289	548	351	2632		

表4.5　ソティックモニエリにおける月雨量記録

District: KERICHO
Station: SOTIK MONIERI
ID. Number : 903513
Latitude: 0°40'S
Longitude : 35°04'30"E
Altitude : 1813 EL.m

Unit:mm

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	Max.24	D/M
1917	188	187	104	165	151	92	92	164	161	231	83	10	1625	55	18/9
1918	74	37	28	164	131	61	59	142	72	52	32	58	911	38	13/1
1919	28	148	278	207	141	102	178	139	100	120	161	25	1630	124	24/3
1920	78	56	114	146	107	154	88	145	123	176	160	68	1414	63	6/10
1921	53	191	80	128	138	154	130	105	123	85	102	13	1303	81	9/9
1922	59	292	158	178	205	96	25	266	133	70	48	115	1645	106	13/2
1923	4	208	118	284	128	139	122	45	45	64	53	95	1305	57	16/2
1924	15	140	82	270	123	30	74	241	125	48	93	45	1287	42	24/8
1925	104	76	116	89	87	116	112	103	54	71	363	66	1358	68	19/11
1926	61	125	150	265	128	92	78	122	216	58	69	78	1443	51	4/9
1927	38	78	128	184	93	81	51	135	76	70	80	120	1133	57	21/12
1928	56	80	133	155	219	139	89	70	58	161	64	27	1251	33	17/2
1929	17	24	120	179	207	137	109	83	57	95	108	146	1281	54	10/5
1930	106	119	229	261	145	207	91	147	146	53	68	98	1659	43	28/7
1931	29	55	165	155	200	142	135	84	213	50	66	108	1404	75	5/9
1932	71	90	194	114	99	84	99	106	162	107	65	89	1279	40	7/9
1933	150	116	81	92	162	79	78	90	164	55	41	81	1189	67	4/9
1934	31	39	138	86	118	143	142	95	155	121	98	142	1308	77	11/9
1935	-	197	60	169	137	186	69	107	125	157	61	102	-	50	24/10
1936	140	275	137	221	127	97	82	40	66	80	42	152	1458	92	19/2
1937	87	61	230	278	103	172	50	72	26	117	149	54	1398	54	23/6
1938	66	37	236	142	200	106	107	91	55	80	43	46	1209	46	16/3
1939	11	42	86	204	54	160	77	101	59	27	36	53	910	30	6/9
1940	147	205	171	149	154	42	77	141	37	34	185	31	1373	70	19/11
1941	45	65	185	237	173	116	78	244	35	24	158	99	1459	66	5/3
1942	28	24	218	264	163	177	30	238	42	28	46	55	1312	41	10/4
1943	14	107	57	189	241	141	99	130	152	49	23	39	1240	42	9/9
1944	66	57	182	246	58	50	154	109	148	72	148	50	1343	55	2/4
1945	48	98	30	42	232	223	179	136	142	65	105	62	1362	58	9/9
1946	35	16	135	169	139	104	65	127	209	110	71	74	1254	36	12/9
1947	193	94	134	224	151	214	189	53	199	63	33	74	1621	54	28/6
1948	66	44	99	154	91	214	128	125	191	93	94	66	1366	61	6/9
1949	3	29	3	122	162	85	98	164	115	61	117	122	1082	48	23/5
1950	67	97	129	181	119	131	123	137	100	116	58	46	1304	56	23/10
1951	57	130	166	345	107	166	73	148	126	96	200	174	1789	47	18/11
1952	28	77	194	326	161	40	158	130	119	88	25	27	1376	60	31/3
1953	34	4	53	142	90	131	58	103	146	92	94	111	1057	53	19/12
1954	19	46	39	224	252	212	47	74	78	36	58	130	1214	53	15/6
1955	56	122	104	188	134	53	79	201	194	41	68	126	1366	60	1/9
1956	151	98	135	124	154	110	49	155	106	59	75	54	1270	34	28/8
1957	174	52	81	187	239	175	114	100	21	66	109	200	1518	42	30/2
1958	77	168	186	126	246	87	131	158	108	101	38	127	1552	58	15/3
1959	87	96	178	166	109	11	29	177	81	80	172	81	1265	53	16/7
1960	101	178	202	129	75	50	57	97	128	62	102	64	1247	64	12/1
1961	10	77	148	136	164	49	50	214	74	130	343	250	1646	65	26/11
1962	66	56	153	149	194	162	72	149	164	190	74	88	1517	71	13/6
1963	135	113	177	247	116	154	92	138	38	17	205	148	1581	82	25/4
1964	45	174	70	370	97	58	137	101	79	81	37	71	1322	55	17/4
1965	71	43	125	227	152	73	70	130	41	111	70	122	1232	34	28/4
1966	85	213	211	203	40	65	101	192	92	65	65	79	1410	65	25/8
1967	18	99	160	289	292	81	83	60	110	69	197	78	1536	60	20/5
1968	33	356	149	311	111	165	148	238	70	63	237	140	2021	92	15/2
1969	123	158	100	74	135	86	100	116	136	68	105	28	1227	46	10/2
1970	287	119	275	196	141	110	55	147	87	46	68	115	1644	52	5/1
1971	117	29	28	209	146	90	85	228	55	48	135	50	1220	53	17/1
1972	80	101	83	95	154	107	76	141	89	107	140	60	1232	37	14/2
1973	143	154	99	132	161	94	49	146	157	55	132	24	1346	53	5/9
1974	49	24	203	276	162	244	158	63	97	87	56	77	1496	-	-
1975	26	86	166	201	146	36	147	128	204	144	32	74	1391	47	29/9
1976	97	117	99	189	185	80	174	199	113	45	94	54	1446	53	6/1
1977	171	40	85	244	186	108	198	142	23	150	300	55	1702	-	-
1978	65	155	308	179	149	75	52	145	160	86	90	129	1591	69	14/12
1979	119	118	94	176	133	150	86	72	59	40	118	156	1321	-	-
1980	86	29	105	147	165	180	45	137	83	66	151	50	1244	-	-
1981	81	60	354	225	136	125	170	107	148	32	44	73	1555	-	-
1982	51	71	58	138	146	151	80	191	143	176	246	123	1573	53	20/6
1983	64	111	74	271	54	71	104	165	189	154	89	74	1421	-	-
1984	34	48	64	207	65	79	160	161	93	128	112	78	1228	385	15/7
1985	32	103	147	255	192	187	135	152	86	61	171	131	1650	48	16/6
1986	58	80	114	189	148	72	65	104	49	58	95	142	1174	36	13/2
1987	-	137	188	157	110	137	48	63	110	77	134	10	1171	-	-
1988	152	62	245	162	113	80	116	127	95	114	116	39	1421	59	26/3
1989	30	146	188	133											
Mean	75	104	139	190	145	116	97	133	109	84	107	85	1382		
Min.	3	4	3	42	40	11	25	40	21	17	23	10	910		
Max.	287	356	354	370	292	244	198	266	216	231	363	250	2021		

表4.6　レヂンゲットエステイトにおける月雨量記録

District:
Station: Reginget Estate
ID. N0. : '9035067
Latitude: 0°25'S
Longitude : 35°41'E
Altitude : 2697 EL.m

Unit:mm

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	Max.24	Month
1938	41	2	94	65	106	142	189	244	109	29	27	47	1096	53	3/4
1939	23	11	23	183	43	156	204	88	41	18	61	9	861	53	8/4
1940	44	105	173	145	141	69	171	169	24	13	92	10	1156	44	5/3
1941	50	86	162	288	176	74	153	159	136	54	109	32	1479	46	28/4
1942	0	6	142	180	250	215	206	324	58	0	2	46	1429	52	14/7
1943	0	0	0	47	82	137	278	256	173	51	49	-	-	-	-
1944	1	17	23	93	70	105	156	184	253	75	70	3	1049	25	10/4
1945	10	13	11	0	191	149	128	181	149	87	40	27	985	35	7/5
1946	16	1	70	167	113	148	222	282	100	70	29	0	1218	35	13/5
1947	89	71	107	145	40	103	188	162	92	80	59	30	1165	37	27/2
1948	9	4	55	103	108	122	197	194	77	99	63	24	1056	31	10/7
1949	0	10	0	77	152	142	172	199	172	16	46	30	1016	31	1/8
1950	5	8	31	100	64	117	213	146	118	49	25	8	885	32	14/6
1951	12	8	122	306	132	106	81	238	102	103	64	194	1469	44	22/8
1952	3	22	40	148	166	31	151	146	110	78	32	6	934	31	8/9
1953	3	12	9	88	77	125	101	132	59	64	47	46	764	28	13/4
1954	23	6	37	220	213	90	153	235	101	64	9	36	1187	54	1/4
1955	19	68	13	129	93	100	169	273	192	42	60	90	1248	36	17/12
1956	121	61	56	132	105	153	158	267	107	145	32	33	1369	42	6/8
1957	69	10	75	203	196	99	80	226	53	43	86	24	1164	42	28/5
1958	73	153	85	75	104	145	101	167	105	117	22	88	1234	44	16/3
1959	40	36	89	62	130	51	80	182	92	134	77	12	987	29	22/3
1960	-	36	124	86	107	85	126	295	155	9	54	27	-	-	-
1961	4	-	13	97	118	75	103	284	87	127	404	174	1487	-	-
1962	42	2	68	91	176	93	190	166	212	50	71	66	1227	41	13/7
1963	52	40	69	270	121	77	111	239	31	26	130	159	1324	46	18/4
1964	21	36	75	259	97	54	213	156	172	74	40	32	1229	46	17/4
1965	65	8	21	125	61	121	120	139	26	91	36	20	834	51	29/4
1966	5	140	73	173	44	68	159	202	95	35	117	30	1141	37	4/2
1967	0	24	25	181	240	213	183	232	68	119	143	25	1453	91	25/5
1968	0	188	118	362	122	76	262	155	43	39	90	48	1504	66	22/7
1969	80	50	45	13	143	16	182	136	139	69	49	9	930	30	10/9
1970	195	14	212	151	173	123	186	312	174	71	62	19	1691	41	8/3
1971	67	0	5	116	105	168	204	323	141	104	56	111	1399	61	1/10
1972	43	30	13	23	151	156	86	163	47	95	99	19	924	43	7/11
1973	42	67	4	31	155	183	123	262	227	35	55	1	1184	44	19/9
1974	2	18	235	80	111	123	208	154	152	57	45	23	1208	42	23/3
1975	3	4	15	85	213	136	167	335	147	107	24	20	1255	46	29/5
1976	0	5	12	72	182	87	163	167	88	22	33	27	857	27	5/5
1977	90	43	14	252	205	-	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1981	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1984	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1985	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1986	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1987	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1988	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1989	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean	35	36	64	136	132	114	163	210	113	66	67	42	1173		
Min.	0	0	0	0	40	16	80	88	24	0	2	0	764		
Max.	195	188	235	362	250	215	278	335	253	145	404	194	1691		

表4.7　カイスゲにおける月雨量記録

District: KERICHO
Station: KAISUGE (HOUSE)
ID. Number : 9035075
Latitude: 0°20'S
Longitude : 35°23'E
Altitude : 2195 EL.m

Unit:mm

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	Max.24	D/M
1939	20	53	49	185	88	230	163	138	123	18	112	34	1211	50	22/6
1940	92	206	248	347	237	106	156	176	65	45	134	38	1851	83	29/4
1941	10	166	161	449	387	121	114	107	133	98	295	144	2183	70	13/4
1942	3	9	319	174	294	173	88	160	212	51	22	101	1606	59	26/6
1943	15	86	68	142	258	102	170	189	125	25	18	44	1242	65	25/4
1944	3	48	155	203	244	116	128	131	143	166	159	126	1622	61	13/5
1945	19	74	21	43	433	220	204	184	401	116	45	49	1808	63	26/9
1946	13	1	104	197	211	191	132	303	209	70	87	92	1608	57	9/9
1947	99	140	199	489	248	219	183	201	192	87	34	91	2182	62	24/3
1948	33	36	102	211	284	226	196	102	102	90	67	28	1478	65	18/4
1949	13	35	18	272	204	195	105	246	130	68	46	67	1397	53	1/6
1950	69	52	108	175	214	113	237	208	168	103	38	32	1518	63	15/7
1951	40	87	149	488	272	172	122	115	91	172	215	197	2121	66	19/4
1952	37	77	116	368	214	83	119	172	90	114	31	3	1423	44	31/3
1953	20	8	26	218	210	113	58	199	67	128	139	107	1292	40	19/12
1954	33	36	91	242	427	170	217	196	172	129	39	113	1863	52	12/5
1955	52	168	92	188	209	129	160	259	219	80	46	92	1693	74	31/8
1956	253	150	121	366	394	93	209	261	195	101	48	47	2238	115	20/5
1957	84	67	168	373	376	122	71	192	44	36	73	167	1772	77	20/4
1958	28	167	106	123	340	181	74	172	145	121	33	142	1633	66	2/5
1959	39	65	405	161	277	111	160	209	148	123	170	18	1883	93	22/4
1960	182	105	228	272	249	79	188	165	167	94	155	46	1929	90	12/1
1961	1	50	60	214	214	151	126	229	211	198	467	206	2126	55	9/1
1962	120	23	149	291	324	209	152	180	165	215	67	116	2010	68	6/4
1963	114	128	201	392	279	91	122	179	75	66	278	245	2170	62	16/3
1964	10	50	176	292	173	162	249	183	306	116	32	77	1826	59	22/4
1965	92	11	185	222	127	66	77	150	56	254	173	113	1526	59	21/10
1966	61	161	164	231	124	88	132	202	148	104	133	64	1611	37	13/11
1967	27	23	162	224	399	176	274	222	169	98	277	70	2119	62	26/4
1968	22	224	172	337	214	153	194	142	55	112	47	80	1753	61	15/5
1969	126	124	81	103	250	102	102	186	103	114	98	17	1405	53	1/5
1970	248	119	255	251	147	160	157	315	185	129	89	91	2146	88	10/3
1971	128	3	74	298	223	221	241	232	165	103	48	119	1855	61	7/7
1972	114	137	102	98	219	271	155	78	94	206	162	61	1695	57	14/2
1973	161	227	7	70	229	249	115	176	154	71	84	34	1576	60	15/2
1974	28	1	278	287	332	134	223	155	204	128	45	26	1840	71	8/4
1975	12	56	168	237	272	136	204	363	183	166	15	68	1878	63	23/8
1976	37	54	79	111	225	106	181	235	141	20	106	58	1353	49	25/8
1977	164	44	100	221	279	228	197	228	126	138	239	76	2041	51	5/8
1978	132	254	264	176	205	252	182	222	108	219	48	111	2171	52	12/10
1979	119	261	90	148	249	228	98	172	68	27	111	10	1581	53	28/6
1980	59	6	108	173	383	113	180	128	93	59	94	41	1436	44	6/5
1981	15	54	264	394	143	104	167	261	251	107	45	15	1819	61	11/4
1982	43	69	107	257	400	100	66	105	87	130	388	105	1855	48	15/4
1983	55	26	35	253	373	229	186	289	197	266	126	59	2094	62	29/5
1984	57	80	12	233	139	144	177	188	70	136	162	72	1468	62	14/11
1985	43	92	215	320	242	73	203	154	168	39	108	36	1692	41	14/4
1986	37	76	88	276	204	180	104	168	138	60	74	28	1433	48	19/4
1987	55	73	199	148	359	370	94	131	87	149	239	39	1943	95	30/6
1988	157	69	136	501	215	175	153	314	144	133	112	4	2113	68	23/4
1989	23	163	271	199											
Mean	67	88	142	248	260	159	155	193	146	112	117	76	1762		
Min.	1	1	7	43	88	66	58	78	44	18	15	3	1211		
Max	253	261	405	501	433	370	274	363	401	266	467	245	2238		

表4.8　ソティックケンウィックミッションにおける月雨量記録

District: Kericho
Station: Sotik Kenwik Mission
ID. Number : 9035079
Latitude: 0°45'S
Longitude : 35°20'E
Altitude : 2012 EL.m

Unit:mm

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	Max.24	Month
1940	81	109	139	249	184	51	85	66	27	45	107	57	1201	50	3/4
1941	47	89	169	117	282	100	42	129	79	39	210	220	1522	49	24/5
1942	73	22	350	333	207	73	17	76	74	52	25	73	1376	53	31/3
1943	35	111	59	181	173	76	17	84	82	174	37	40	1069	53	16/10
1944	66	122	160	285	164	38	107	113	95	69	214	139	1571	60	22/2
1945	87	70	81	60	193	126	42	126	47	38	111	40	1021	35	15/1
1946	33	20	113	218	253	122	42	90	107	138	106	113	1356	48	14/4
1947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1948	67	30	117	191	180	131	41	90	124	54	88	39	1151	53	10/6
1949	21	42	34	214	201	66	112	103	69	64	38	164	1128	79	23/5
1950	83	27	148	288	144	82	40	98	67	76	40	53	1148	41	7/4
1951	43	102	191	383	149	128	48	68	51	106	166	317	1752	61	23/4
1952	18	57	140	209	344	87	78	77	98	99	94	93	1392	45	31/3
1953	105	3	27	407	133	162	68	34	247	35	128	68	1415	60	14/9
1954	55	47	51	273	326	129	91	114	159	30	73	52	1399	51	22/8
1955	8	78	57	145	114	29	96	82	148	137	41	117	1051	39	22/9
1956	231	43	140	174	81	43	88	103	128	58	34	64	1186	54	15/1
1957	147	42	134	344	228	209	71	103	45	12	43	73	1452	65	13/4
1958	57	101	167	194	240	23	49	112	73	88	44	121	1271	52	12/5
1959	50	53	223	192	162	54	13	55	92	60	155	70	1179	34	15/9
1960	60	63	204	328	98	51	26	86	127	93	93	41	1270	36	27/3
1961	0	-	47	131	113	31	11	65	95	87	456	226	-	-	-
1962	82	43	152	343	247	137	90	62	129	163	94	170	1712	97	11/4
1963	178	82	119	290	196	73	61	105	46	59	189	238	1635	50	20/1
1964	60	96	112	392	96	76	66	57	33	43	19	110	1161	42	23/4
1965	139	38	79	291	229	112	89	58	108	130	132	127	1531	50	21/5
1966	50	197	199	349	113	48	78	205	147	65	98	18	1568	63	27/8
1967	3	83	130	225	180	105	81	30	77	100	150	104	1267	36	17/4
1968	46	159	152	381	164	80	56	90	40	96	139	144	1545	54	4/4
1969	166	183	167	98	115	115	51	31	84	35	133	100	1278	40	12/6
1970	213	120	314	279	305	69	51	101	85	106	27	89	1760	71	22/4
1971	98	10	49	251	262	72	58	215	41	88	30	104	1277	40	9/5
1972	71	164	121	73	232	96	38	54	77	132	198	111	1366	80	1/2
1973	265	194	28	211	208	94	36	87	151	-	168	55	-	-	-
1974	10	62	224	272	144	145	-	83	105	61	56	33	-	-	-
1975	58	30	218	352	132	92	179	69	113	115	54	95	1505	72	16/3
1976	51	48	111	148	76	71	112	121	75	83	128	114	1138	59	25/4
1977	219	66	112	244	140	75	143	-	14	71	198	147	1429	43	28/7
1978	120	149	313	258	142	86	37	82	87	84	112	157	1625	60	18/6
1979	137	194	180	154	142	86	52	106	78	33	73	148	1384	41	22/12
1980	91	27	115	239	234	-	43	28	93	117	-	48	-	-	-
1981	55	50	232	247	216	94	149	86	147	61	71	91	1500	112	23/9
1982	44	51	18	287	142	79	58	70	145	145	249	276	1563	60	2/12
1983	54	113	115	206	49	112	54	95	112	181	121	121	1332	70	17/4
1984	105	43	17	264	43	39	96	180	98	104	90	126	1205	43	27/4
1985	39	106	312	256	136	87	82	54	55	60	197	104	1488	79	28/2
1986	96	35	59	149	182	60	65	62	59	101	155	150	1174	45	11/1
1987	86	138	154	165	214	219	67	64	92	54	211	20	1485	84	27/5
1988															
1989															
Mean	83	81	139	241	177	90	67	88	92	83	117	110	1368		
Min.	0	3	17	60	43	23	11	28	14	12	19	18	1021		
Max.	265	197	350	407	344	219	179	215	247	181	456	317	1760		

表4.9　マリンダスファーム（モロ）における月雨量記録

District: NAKURU
Station: MARINDAS FARM.(MOLO)
ID. Number : '9035129
Latitude: 0°21'S
Longitude : 35°41'40"E
Altitude : 2804 EL.m

Unit:mm

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	Max.24	D/M
1950	-	-	-	-	-	-	-	-	-	66	38	4	-	27	23/10
1951	18	27	148	397	114	86	58	154	54	67	135	251	1510	62	19/4
1952	-	21	37	179	167	71	148	138	53	43	34	9	-	35	15/4
1953	10	-	13	110	63	132	97	169	51	42	72	58	-	40	12/8
1954	10	3	57	145	303	168	155	234	165	91	36	68	1435	44	31/3
1955	21	107	18	160	50	131	141	344	319	47	101	115	1556	39	17/12
1956	190	96	115	171	161	172	208	412	135	67	25	26	1779	-	-
1957	84	1	92	153	192	155	133	106	31	21	72	30	1071	-	-
1958	52	178	61	92	38	100	133	177	65	87	16	87	1084	-	-
1959	47	31	64	58	155	86	110	150	100	103	157	12	1073	47	22/5
1960	44	38	172	128	67	84	154	336	67	35	50	19	1192	58	30/8
1961	1	13	19	114	72	42	96	247	78	165	380	207	1434	59	13/12
1962	34	-	71	137	247	86	135	174	160	52	64	56	-	40	20/9
1963	78	36	57	278	123	38	102	164	24	27	126	155	1208	33	2/12
1964	23	39	74	278	62	80	222	176	250	64	30	42	1339	48	16/4
1965	55	6	27	126	34	44	115	161	31	52	53	11	714	51	18/8
1966	8	110	101	193	36	73	179	219	102	28	77	2	1127	35	25/8
1967	1	22	22	135	267	84	160	220	26	70	168	5	1180	44	5/8
1968	-	129	137	346	59	105	167	163	17	39	86	24	1270	51	18/4
1969	77	51	38	26	165	5	120	120	95	6	50	13	766	36	10/9
1970	132	38	158	143	150	117	149	270	74	43	55	7	1335	46	31/4
1971	28	3	7	115	143	178	139	227	132	98	29	145	1244	55	6/6
1972	6	65	6	46	53	165	121	151	26	65	94	15	814	43	19/8
1973	44	64	1	42	134	44	67	247	115	12	52	1	822	76	7/8
1974	-	72	242	71	46	-	215	147	90	60	42	7	-	-	-
1975	-	8	38	119	132	26	241	256	181	378	36	33	-	-	-
1976	1	14	19	99	186	55	168	192	96	-	71	94	-	-	-
1977	119	49	26	102	115	64	170	151	150	123	399	17	1485	47	7/11
1978	141	147	205	93	59	153	177	213	137	116	34	101	1576	-	19/1
1979	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1980	25	27	31	135	242	139	92	116	65	42	66	4	982	58	5/8
1981	-	31	225	206	101	88	164	240	107	92	18	39	1309	42	16/8
1982	32	36	16	188	151	60	81	273	85	116	184	122	1344	40	13/6
1983	19	51	32	149	139	191	146	256	216	172	45	90	1505	39	14/11
1984	0	6	3	92	34	50	82	82	84	50	119	4	605	42	27/8
1985	63	59	142	246	185	101	106	194	89	16	61	10	1272	52	1/5
1986	2	39	29	220	92	151	76	269	86	40	40	81	1125	49	8/5
1987	11	31	87	141	159	131	49	176	25	31	102	-	-	-	-
1988	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1989	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean	45	48	72	151	125	99	135	203	99	73	87	54	1212		
Min.	0	1	1	26	34	5	49	82	17	6	16	1	605		
Max.	190	178	242	397	303	191	241	412	319	378	399	251	1779		

表4.10　テレットフォーレストステーションにおける月雨量記録

District: NAKURU
Station: TERET FOREST STATION
ID. Number : 9035233
Latitude 0° 27'S
Longitude : 35°37'E
Altitude : 2438 EL.m

Unit:mm

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	Max.24	D/M
1961	17	15	7	51	100	65	43	257	40	250	441	277	1564	-	-
1962	82	1	89	69	160	132	98	74	106	75	90	101	1075	47	28/12
1963	48	39	90	219	224	98	47	157	47	46	154	212	1379	44	29/5
1964	36	19	105	202	75	132	142	123	124	107	98	80	1243	41	17/8
1965	49	0	27	99	106	14	74	38	23	62	66	26	584	37	17/7
1966	9	48	55	177	47	45	75	144	112	56	85	6	859	36	16/3
1967	5	0	38	160	154	50	226	57	36	126	254	0	1105	49	30/11
1968	-	179	137	373	113	14	111	91	21	33	141	40	-	-	-
1969	49	118	142	93	101	133	88	56	113	33	94	44	1062	48	24/7
1970	185	17	243	288	174	102	92	145	118	28	105	64	1557	63	24/4
1971	71	0	33	258	113	185	78	231	37	30	58	103	1194	60	15/4
1972	51	138	15	50	81	108	45	102	35	95	161	25	903	40	8/11
1973	54	32	12	66	106	29	73	125	78	36	59	4	675	25	16/5
1974	15	22	104	160	36	46	129	182	156	81	70	19	1017	48	2/10
1975	16	9	36	162	124	129	135	286	93	103	17	49	1158	45	22/7
1976	1	31	21	96	88	54	164	111	59	33	46	65	767	51	2/7
1977	74	47	38	301	169	63	202	127	46	100	222	85	1473	52	14/4
1978	75	135	133	113	59	83	131	138	95	83	87	148	1281	59	21/11
1979	103	196	165	229	113	89	57	154	71	29	129	72	1407	79	9/8
1980	79	4	67	104	226	64	19	39	31	33	130	10	805	33	27/1
1981	10	32	120	122	91	62	120	157	104	52	39	34	943	60	14/8
1982	9	45	4	255	176	59	53	130	65	123	105	118	1140	47	30/5
1983	12	32	32	123	126	120	105	104	128	116	48	151	1095	57	23/5
1984	11	10	12	99	17	48	77	67	48	96	10	32	530	28	14/11
1985		48	117	276	140	113	95	89	61	14	158	10	1120	60	10/11
1986	3	3	39	194	103	133	155	94	94	44	65	75	1002	48	9/4
1987	8	45	38	129	141	186	28	49	35	38	179	8	884	46	8/6
1988	79	12	62	253	186	66	114	145	59	90	91	29	1186	44	17/1
1989	19	82	65	147									-		
Mean	43	47	71	168	120	86	99	124	73	72	114	67	1074		
Min.	1	0	4	50	17	14	19	38	21	14	10	0	530		
Max.	185	196	243	373	226	186	226	286	156	250	441	277	1564		

表4.11 チェプレルワセトルメントスキームにおける月雨量記録

District: Kericho
Station: Cheplelwa Setl. Scheme (Kabalaya)
ID. Number : 9035253
Latitude : 0°49'S
Longitude : 35°06'E
Altitude : 1829 EL.m

Unit:mm

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	Max.24	Month
1965	129	78	115	170	212	64	65	46	67	90	85	75	1195	51	12/1
1966	131	188	180	220	38	38	110	137	123	43	139	48	1394	56	14/4
1967	18	84	85	209	112	93	92	17	74	102	172	98	1156	45	9/2
1968	37	310	194	306	41	97	87	152	65	66	152	186	1693	46	2/12
1969	312	140	90	51	105	93	36	98	49	57	68	64	1164	44	30/1
1970	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1971	-	-	-	-	-	24	24	253	81	23	44	189	-	-	-
1972	97	208	80	80	92	159	65	104	76	71	131	105	1267	40	2/2
1973	153	156	10	207	191	64	37	68	320	50	156	54	1466	50	4/11
1974	60	37	314	218	53	129	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-	65	-	-	-	-	-
1976	85	118	107	143	151	100	-	-	-	29	100	64	-	-	-
1977	165	94	129	-	225	98	221	74	-	-	-	114	-	-	-
1978	163	148	212	141	38	122	39	64	68	-	47	252	-	-	-
1979	62	73	56	110	66	-	74	28	-	10	54	75	-	-	-
1980	90	14	-	-	-	-	-	-	-	-	-	-	-	-	-
1981	-	-	-	-	-	-	78	-	-	-	-	-	-	-	-
1982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1984	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1985	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1986	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1987	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1988	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1989	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean	115	127	131	168	110	90	77	95	103	55	104	110	1333		
Min.	18	14	10	51	38	24	24	17	49	10	44	48	1156		
Max.	312	310	314	306	225	159	221	253	320	102	172	252	1693		

表4.12　コイワエステートにおける月雨量記録

District: Kericho
Station: Koiwa Estate
ID. Number : '9035260
Latitude : 0°37'S
Longitude : 35°19'E
Altitude : 2256 EL.m

Unit:mm

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	Max.24	Month
1971	65	30	15	261	264	105	188	200	122	151	83	115	1599	56	27/5
1972	121	232	79	129	325	137	78	102	104	230	326	110	1973	56	19/11
1973	140	225	8	195	350	140	89	97	187	139	183	16	1769	88	15/2
1974	49	83	172	280	209	162	-	114	147	98	74	24	-	-	-
1975	27	35	175	293	219	47	139	219	239	152	34	68	1647	44	19/8
1976	59	96	116	223	-	168	132	230	118	89	139	84	-	-	-
1977	194	133	94	222	310	223	170	160	119	144	360	123	2252	57	19/11
1978	80	152	340	348	176	138	98	150	184	153	119	160	2098	52	5/3
1979	117	162	154	167	299	114	135	153	71	50	136	70	1628	66	1/7
1980	99	31	158	204	332	229	46	114	144	114	176	36	1683	43	16/4
1981	-	139	205	254	393	150	230	60	169	112	121	77	-	-	-
1982	42	55	55	255	355	211	63	138	151	210	354	153	2042	45	28/11
1983	109	67	89	262	247	154	109	189	150	218	122	136	1852	45	5/9
1984	85	37	35	225	181	91	-	249	86	171	131	91	-	-	-
1985	-	110	137	471	222	145	92	140	99	92	188	83	-	-	-
1986	42	78	105	231	335	111	128	172	75	135	167	142	1721	43	20/3
1987	85	94	222	129	268	251	75	93	87	118	326	61	1809	46	13/6
1988	116	90	231	444	339	135	175	204	222	200	95	66	2317	52	14/4
1989	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean	89	103	133	255	284	151	122	155	137	143	174	90	1876		
Min.	27	30	8	129	176	47	46	60	71	50	34	16	1599		
Max.	194	232	340	471	393	251	230	249	239	230	360	160	2317		

表4.13　ゴイナエステートにおける月雨量記録

District: KERICHO
Station: NGOINA ESTATE
ID. Number : '9035261
Latitude : 0°33'S
Longitude : 35°03'E
Altitude : 2012 EL.m

Unit:mm

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	Max.24	Month
1965							81	126	110		86	94	-		
1966	39	134	209	134	50	164	161	164	-	48	109	58	-		
1967	34	70	172	170	342	166	73	55	126	91	180	58	1537		
1968	10	242	158	403	73	78	219	164	44	102	198	156	1847		
1969	87	194	120	146	164	107	51	147	131	89	96	64	1396		
1970	244	128	141	285	145	114	96	163	168	61	63	100	1708		
1971	69	7	25	211	192	129	189	189	92	67	89	72	1330		
1972	94	99	85	172	157	156	89	78	174	149	151	32	1435		
1973	205	171	50	149	168	128	118	252	126	95	225	19	1705		
1974	36	53	-	277	155	122	-	137	159	97	60	77	-	-	-
1975	12	86	125	241	101	90	207	206	203	92	-	43	-	-	-
1976	42	81	71	90	168	144	113	294	89	20	-	59	-	-	-
1977	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	63	-	-	-	-	-	-
1980	-	12	155	180	154	103	102	-	-	-	-	-	-	-	-
1981	-	89	235	269	92	139	156	120	178	53	29	52	-	-	-
1982	82	49	104	239	284	-	-	271	99	149	-	-	-	-	-
1983	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1984	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1985	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1986	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1987	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1988	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1989	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean	98	131	120	209	161	130	120	149	121	88	133	73	1566		
Min.	10	7	25	134	50	78	51	55	44	48	63	19	1330		
Max.	244	242	209	403	342	166	219	252	174	149	225	156	1847		

表4.14　ドイネットフォーレストステーションにおける月雨量記録

District:
Station: NDOINET FOREST STATION
ID. Number : 9035292
Latitude : 0°27'S
Longitude : 35°29'E
Altitude : 2438.4 EL.m

Unit:mm

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	Max.24	D/M
1975			343	169	220	139	210	383	343	172	37	32	-	-	-
1976	5	16	39	62	245	108	182	283	98	20	69	53	1180	50	7/8
1977	76	120	75	272	233	186	254	202	153	139	245	75	2028	47	28/4
1978	116	169	186	67	212	244	165	213	198	204	80	53	1905	79	8/5
1979	110	173	59	107	159	147	237	262	88	33	61	21	1456	62	14/8
1980	69	11	53	169	257	224	185	161	104	34	95	6	1368	59	18/6
1981	15	107	233	314	118	106	214	286	210	88	64	30	1785	49	16/2
1982	29	40	263	269	379	86	102	278	141	89	210	53	1938	58	27/4
1983	42	54	15	160	206	142	114	309	138	189	25	85	1479	64	26/4
1984	13	9	5	59	122	183	187	161	99	71	106	30	1043	40	17/6
1985	74	60	125	268	260	74	219	150	148	-	-	-	-	-	-
1986	36	68	28	180	152	215	136	192	130	92	21	41	1291	-	-
1987	35	65	102	109	211	213	78	186	39	48	241	14	1341	-	-
1988	64	14	55	271	179	130							-	-	-
1989															
Mean	52	70	113	177	211	157	176	236	145	98	105	41	1528		
Min.	5	9	5	59	118	74	78	150	39	20	21	6	1043		
Max.	116	173	343	314	379	244	254	383	343	204	245	85	2028		

表4.15 月平均降雨パターン

Unit : mm

ID. No.	Altitude (El.m)	Location	Data Period from	to	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual
9034024	1951	SW	1928	1964	84	98	156	190	158	129	78	136	114	82	101	114	1439
9035001	1829	NC	1924	1988	79	90	158	252	220	135	117	139	121	114	120	101	1639
9035003	1981	NC	1905	1986	72	96	157	267	254	159	154	183	154	137	133	92	1858
9035013	1813	CW	1917	1988	75	104	139	190	145	116	97	133	109	84	107	85	1382
9035067	2697	NE	1938	1976	35	36	64	136	132	114	163	210	113	66	67	42	1173
9035075	2195	NC	1939	1988	67	88	142	248	260	159	155	193	146	112	117	76	1762
9035079	2012	SC	1940	1987	83	81	139	241	177	90	67	88	92	83	117	110	1368
9035129	2804	NE	1951	1987	45	48	72	151	125	99	135	203	99	73	87	54	1212
9035233	2438	NE	1961	1988	43	47	71	168	120	86	99	124	73	72	114	67	1074
9035253	1829	SW	1965	1980	115	127	131	168	110	90	77	95	103	55	104	110	1333
9035260	2256	C	1971	1988	89	103	133	255	284	157	122	155	137	143	174	90	1876
9035261	2012	CW	1966	1982	98	131	120	209	161	130	120	149	121	88	133	73	1566
9035292	2438	NE	1975	1988	52	70	113	177	211	157	176	236	145	98	105	41	1528
Eastern Pert of The Basin					44	50	80	158	147	114	143	193	108	77	93	51	1247
Central Pert of The Basin					78	92	146	253	239	139	123	152	130	118	132	94	1701
Western Pert of The Basin					93	115	137	189	144	116	93	128	112	77	111	96	1430
Basin Mean Monthly Rainfall					72	86	123	204	181	124	120	157	117	93	114	81	1478

Note:
- SW: South-Western part of the Basin
- NC: North-Central part of the Basin
- CW: Central-Western part of the Basin
- NE: North-Eastern part of the Basin
- SC: South-Central part of the Basin
- C: Central part of the Basin

表4.16 ソンドゥ川流域における確率日降雨

Unit: mm/day

ID.No.	9035001	9035003	9035013	9035067	9035075	9035079	9035129	9035233
ST.	Jamji	Kericho	Sotik	Reginget	Kaisuge	Kenwik	Marindas	Teret
Name	Estate	DC.	Monieri	Estate	House	Mission	Farm	Forest St.
LAT.	0°28'S	0°23'S	0°40'S	0°25'S	0°20'S	0°45'S	0°21'S	0°27'S
LONG.	35°12'E	35°17'E	35°04'E	35°41'E	35°23'E	35°20'E	35°42'E	35°37'E
ALT.	El.1829m	El.1981m	El.1813m	El.2697m	El.2195m	El.2012m	El.2804m	El.2438m
Sample No.	64	74	65	36	43	64	28	26
Return Period (yr.)								
1.01	34	34	27	20	26	34	29	26
1.05	39	39	33	25	32	39	33	31
1.11	42	43	37	27	36	42	35	34
1.25	46	48	42	21	41	46	38	37
1.5	51	52	47	36	47	51	41	41
2	56	58	54	41	53	56	45	46
5	69	73	70	53	70	69	55	58
10	78	83	81	62	81	78	62	66
20	86	92	92	70	92	86	68	73
30	91	98	98	74	98	91	71	78
40	95	102	102	77	102	95	74	81
50	97	105	105	80	105	97	76	83
80	103	111	112	85	112	103	80	88
100	105	114	115	88	115	105	82	91
200	113	123	125	95	126	113	88	98
500	124	135	139	105	139	124	96	107
1000	132	144	149	113	149	132	102	115

表 4.17　ソンドゥ川流域の日降雨量算定に用いた観測所

Year	Rain Gauge Station No.					
	9035001	9035003	9035013	9035067	9035075	9035079
1947	*	*	*			
1948	*	*	*			
1949	*	*	*			
1950	*	*	*			
1951	*	*	*			
1952	*	*	*			
1953	*	*	*			
1954	*	*	*			
1955	*	*	*			
1956	*	*	*			
1957	*		*	*		
1958	*		*	*		
1959	*		*	*		
1960	*		*	*		
1961	*		*	*		
1962	*		*	*		
1963	*		*	*		
1964	*		*	*	*	
1965	*		*	*	*	*
1966	*		*	*	*	
1967	*		*	*	*	
1968	*		*	*	*	*
1969	*		*	*	*	
1970	*		*	*	*	*
1971	*		*		*	
1972	*		*		*	*
1973	*		*		*	*
1974	*		*		*	*
1975	*			*	*	*
1976	*		*	*	*	*
1977	*		*		*	*
1978	*		*		*	*
1979	*		*		*	*
1980	*		*		*	*
1981	*		*		*	*
1982	*		*		*	*
1983	*		*		*	*
1984	*		*		*	*
1985	*		*		*	*
1986	*		*		*	*
1987	*				*	*
1988	*		*		*	*

*) Applied Station

表 4.18　年最大流域雨量（1 日雨量－30日雨量）

Year	Duration										
	1-day	2-day	3-day	4-day	5-day	6-day	7-day	10-day	15-day	20-day	30-day
1947	44.2	80.8	100.4	114.8	131.3	137.0	141.6	164.8	203.4	243.8	336.2
1948	32.8	53.4	73.6	77.5	84.9	88.1	93.3	123.5	161.6	190.1	244.6
1949	31.8	39.0	54.6	64.6	80.3	85.9	97.3	120.7	180.7	199.0	247.8
1950	45.5	61.7	71.9	75.4	94.4	108.8	119.9	130.6	165.7	185.4	270.5
1951	37.4	51.9	69.5	83.4	94.3	106.8	137.3	179.6	241.3	311.6	411.9
1952	44.4	74.3	80.9	103.9	126.0	149.9	171.0	203.3	269.0	328.7	434.0
1953	29.3	39.3	52.0	61.3	73.2	93.5	98.5	115.2	143.0	182.8	247.7
1954	38.3	65.0	79.9	89.6	99.4	109.2	117.2	162.9	208.4	240.4	299.3
1955	19.8	36.8	52.3	63.6	72.1	75.8	77.6	90.4	124.8	152.0	221.5
1956	37.7	52.0	63.9	74.5	85.5	101.6	112.3	124.4	154.8	174.6	262.5
1957	37.1	66.9	82.4	90.2	97.2	101.6	110.0	140.6	176.5	193.3	284.9
1958	32.9	48.1	64.5	73.0	75.2	83.5	92.0	106.9	142.9	163.6	210.9
1959	56.6	62.4	72.8	83.8	111.6	123.9	129.6	134.6	147.8	160.7	234.8
1960	47.8	49.7	50.0	57.6	63.1	75.8	77.5	107.0	141.5	176.5	238.8
1961	45.7	79.3	91.8	98.4	106.2	107.8	118.9	140.3	195.9	251.0	305.0
1962	37.3	46.9	66.9	78.4	91.1	99.1	104.2	120.2	164.5	200.6	283.0
1963	35.6	59.6	80.2	96.8	114.4	121.1	125.3	163.7	234.1	272.2	354.6
1964	54.1	85.4	107.9	126.7	136.2	160.8	195.4	233.6	256.3	296.1	341.9
1965	26.3	45.2	53.8	68.5	71.8	82.7	92.0	118.2	158.3	205.1	253.0
1966	34.1	46.5	69.9	82.2	85.9	90.4	99.5	129.1	182.4	238.2	291.9
1967	35.1	45.5	64.4	84.5	91.9	110.0	116.1	143.5	182.9	220.4	303.8
1968	35.6	54.2	65.5	85.4	104.8	123.4	139.3	166.7	196.5	231.0	334.5
1969	27.1	36.5	45.2	52.6	58.6	64.3	74.2	103.3	130.6	148.6	246.5
1970	43.1	66.1	72.6	79.0	85.9	96.6	108.0	131.0	164.5	204.3	305.6
1971	32.3	42.2	56.3	72.5	84.0	105.3	110.9	130.8	187.9	215.1	302.8
1972	34.9	50.1	53.9	62.5	73.8	83.7	93.7	112.2	146.6	166.1	257.3
1973	36.0	52.4	67.2	86.2	102.6	107.6	122.8	129.4	170.6	179.4	234.1
1974	49.2	73.4	74.2	80.2	92.2	110.5	130.4	166.7	239.6	318.4	403.7
1975	30.1	42.0	58.6	76.9	88.6	102.5	110.6	133.4	194.3	237.0	313.9
1976	21.0	36.1	46.0	52.6	60.9	79.7	94.0	109.3	140.8	152.4	215.1
1977	39.5	55.3	63.2	70.8	80.7	84.8	96.4	121.0	162.2	180.0	261.8
1978	43.8	60.2	66.3	74.1	79.8	91.8	100.2	135.7	187.4	239.9	338.6
1979	22.7	36.0	50.1	62.4	68.3	75.9	84.0	98.8	127.9	170.4	239.1
1980	28.5	47.5	59.4	74.1	84.3	91.5	99.9	121.1	171.3	189.0	257.4
1981	38.9	59.7	85.7	100.7	108.8	133.7	143.1	176.2	231.2	296.6	455.3
1982	33.1	48.3	64.9	78.7	95.1	120.1	134.1	178.9	221.5	239.4	307.3
1983	52.4	58.9	62.4	66.9	86.2	101.6	108.0	151.8	183.3	198.0	281.1
1984	22.6	44.1	59.0	69.3	84.4	99.4	108.5	139.4	173.7	213.1	254.7
1985	26.0	45.2	58.0	68.6	78.9	92.9	105.2	134.5	192.8	250.9	367.6
1986	23.7	35.7	52.0	59.7	65.0	72.2	79.6	97.3	133.7	170.8	239.8
1987	45.7	70.8	77.5	88.7	99.8	107.0	112.9	145.3	221.0	265.0	323.4
1988	—	—	—	—	—	—	—	—	—	—	—
1989	—	—	—	—	—	—	—	—	—	—	—
1990											
	56.6	85.4	107.9	126.7	136.2	160.8	195.4	233.6	269.0	328.7	455.3

表5.1　1JG1流量観測所における月平均流量

River Name : Sondu/Miriu
ID.Number : 1JG1
Catchment Area : 3260 km2
Latitude : 0°23'35"S
Londitude : 35°00'30"E

Unit : m3/s

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1946					14.1	48.3	37.5	83.1	82.5	33.2	16.9	9.9	40.7
1947	13.2	11.8	15.6	99.6	265.0	79.8	52.1	56.3	59.9	53.4	13.4	8.5	60.7
1948	5.3	3.5	2.8	5.2	9.6	25.4	26.6	57.3	64.4	19.0	10.3	5.9	19.6
1949	3.5	2.8	1.7	4.2	5.5	13.5	15.8	36.1	57.6	23.5	10.8	9.3	15.4
1950	6.6	3.9	5.7	14.1	20.9	22.6	35.4	44.8	57.9	24.2	10.5	7.0	21.1
1951	4.5	4.7	4.2	110.5	92.0	87.6	35.2	45.1	28.5	31.4	45.8	123.5	51.1
1952	60.4	14.7	8.7	44.8	201.5	66.5	29.0	52.9	46.6	25.7	15.7	10.6	48.1
1953	5.6	3.2	2.3	6.2	9.9	10.7	9.9	12.0	9.7	7.0	6.7	6.4	7.5
1954	3.3	1.7	1.6	5.9	45.8	75.3	39.0	34.1	56.1	25.9	13.3	11.0	26.1
1955	5.9	5.5	3.1	6.8	16.3	10.2	16.5	45.2	86.0	63.4	25.0	19.2	25.3
1956	41.6	31.6	14.5	36.8	104.1	75.3	48.2	54.0	86.6	40.6	27.7	16.7	48.1
1957	8.6	7.0	6.5	47.7	114.0	149.8	63.3	53.4	45.5	15.3	10.6	9.4	44.2
1958	6.5	9.7	9.7	9.8	67.0	33.8	34.7	32.8	45.3	27.8	13.9	11.5	25.2
1959	8.6	6.6	11.7	37.0	69.8	35.2	16.1	18.2	28.6	22.8	23.3	14.5	24.4
1960	9.7	6.2	17.9	70.1	62.6	55.4	36.6	40.1	78.8	43.5	23.2	13.1	38.1
1961	6.8	4.5	4.3	9.7	24.1	15.5	12.9	33.0	46.3	56.6	258.9	227.2	58.3
1962	85.6	26.7	12.7	32.7	182.6	111.7	88.5	45.8	86.2	73.2	31.1	18.0	66.2
1963	32.0	25.0	21.5	74.1	265.0	118.4	35.0	51.3	37.6	11.0	12.7	88.1	64.3
1964	33.8	13.4	25.4	186.9	108.5	49.0	69.1	71.9	60.7	75.3	22.1	11.4	60.6
1965	10.0	6.4	4.0	32.5	72.7	23.6	15.4	16.4	17.0	11.8	31.6	22.1	22.0
1966	11.0	11.3	32.4	89.5	80.9	33.3	26.4	24.6	71.0	24.1	22.9	11.9	36.6
1967	6.6	4.3	3.6	19.9	99.1	64.2	75.5	40.1	30.8	17.0	21.2	57.1	36.6
1968	15.3	17.2	51.3	119.6	161.0	92.6	57.3	93.6	46.8	17.7	29.3	93.3	66.3
1969	22.8	48.9	39.5	29.8	37.5	23.7	14.2	16.9	34.9	14.1	9.6	6.9	24.9
1970	14.3	22.6	66.7	126.2	115.6	82.6	42.5	79.9	79.6	59.1	27.1	11.9	60.7
1971	10.5	6.8	4.6	11.2	41.8	66.5	64.1	100.4	93.9	46.2	16.8	10.4	39.4
1972	10.2	9.2	7.4	7.7	32.4	41.4	45.9	44.4	26.7	19.8	74.6	47.2	30.6
1973	43.6	32.6	20.1	12.5	33.2	80.7	31.4	48.7	62.9	36.6	30.0	13.4	37.1
1974	7.1	4.5	5.7	72.2	51.2	56.6	130.9	67.0	55.0	42.8	24.2	11.0	44.0
1975	6.2	4.4	5.5	28.8	33.3	50.5	42.4	94.4	136.6	81.9	36.8	14.4	44.6
1976	8.9	6.2	5.4	8.4	22.8	41.6	58.0	50.9	73.2	21.7	11.3	9.1	26.5
1977	11.6	24.0	13.9	89.5	164.0	81.0	109.9	78.3	55.4	26.1	109.9	78.6	70.2
1978	31.3	28.2	168.1	198.2	153.5	46.5	58.5	55.9	70.5	73.8	40.7	28.6	79.5
1979	21.2	69.6	48.1	69.5	92.7	75.2	56.3	63.4	35.4	15.3	10.1	7.6	47.0
1980	5.9	5.2	7.7	14.8	39.4	55.9	64.6	33.4	32.3	14.0	13.2	10.4	24.1
1981	5.7	6.3	12.5	142.1	93.5	33.4	40.3	79.3	62.3	56.7	22.0	13.1	47.3
1982	7.6	4.5	2.7	4.8	44.0	72.2	36.9	65.1	50.2	35.8	122.3	163.9	50.8
1983	26.8	11.7	7.5	17.0	48.9	50.5	42.8	55.1	107.7	80.2	51.8	24.5	43.7
1984	15.8	8.7	6.2	11.7	14.2	10.2	10.7	29.1	32.3	19.6	15.4	30.5	17.0
1985	9.2	9.4	10.1	104.3	107.7	77.9	46.8	77.7	62.6	22.0	23.0	15.4	47.2
1986	8.4	7.3	7.3	14.2	38.4	36.5	26.0	33.5	32.5	19.2	12.8	15.9	21.0
1987	9.9	7.2	20.9	26.5	68.4	131.5	49.2	24.5	21.0	16.7	35.7	25.6	36.4
1988	15.1	14.4	17.3	82.3	170.9	60.7	52.7	99.3	90.8	82.9	38.8	21.1	62.2
1989	12.2	13.6	14.2	66.7	119.4	54.8	32.1	49.7	80.5	73.4	45.1	47.2	50.7
1990	72.2	26.3	123.6	289.9	114.6	67.5	31.1	38.6			18.7	13.6	79.6
MEAN	17.3	13.5	19.9	56.6	82.9	57.7	43.6	51.7	57.4	36.4	33.0	31.7	42.0
MAX.	85.6	69.6	168.1	289.9	265.0	149.8	130.9	100.4	136.6	82.9	258.9	227.2	79.6
MIN.	3.3	1.7	1.6	4.2	5.5	10.2	9.9	12.0	9.7	7.0	6.7	5.9	7.5

表5.2　1JD3流量観測所における月平均流量

River Name　: Yurith
ID. Number　: 1JD3
Catchment Area　: 1570 km2
Latitude　: 0°28'35"S
Longitude　: 35°04'45"E

Unit : m3/s

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1969	-	-	13.6	12.1	22.0	20.3	15.3	21.0	32.4	14.0	6.6	4.3	-
1970	10.4	19.1	32.8	56.5	73.5	48.6	33.4	58.2	56.4	43.3	27.0	13.3	39.4
1971	9.5	4.2	3.1	6.4	26.2	51.4	50.9	76.4	73.6	40.2	17.2	7.4	30.5
1972	-	57.1	-	-	-	30.7	38.1	34.2	26.1	18.7	50.8	31.2	-
1973	24.9	23.7	15.0	7.9	23.9	47.0	27.0	40.0	44.4	38.7	24.1	12.7	27.4
1974	-	4.1	3.9	24.8	28.9	37.8	66.4	41.4	38.1	32.8	21.9	8.1	-
1975	4.3	3.6	3.7	14.3	23.3	38.5	32.7	74.1	101.9	66.1	35.3	14.8	34.4
1976	7.0	4.7	3.6	5.3	17.8	36.7	45.8	41.4	53.5	22.5	10.6	5.9	21.2
1977	7.4	12.6	10.4	36.2	88.6	58.5	69.3	58.9	43.3	24.8	72.6	51.5	44.5
1978	22.4	54.0	83.0	101.0	88.3	36.3	49.2	41.5	52.0	53.3	30.3	24.8	53.0
1979	12.8	40.9	27.5	30.9	45.6	54.6	45.1	51.6	-	31.9	6.8	4.8	-
1980	3.5	2.4	4.0	5.7	29.5	33.2	43.2	29.0	-	-	-	-	-
1981	-	-	-	-	-	-	-	-	-	-	-	-	-
1982	-	-	-	-	-	-	-	-	-	-	-	-	-
1983	-	-	-	-	-	-	-	-	-	-	-	-	-
1984	12.4	9.3	7.3	9.5	8.8	9.0	10.6	19.4	19.8	14.2	10.4	10.3	11.7
1985	7.2	8.1	7.1	36.6	56.6	40.2	27.8	40.9	37.3	16.5	12.4	8.8	25.0
1986	8.1	7.3	6.6	8.9	19.0	22.5	18.6	23.5	21.7	14.4	9.8	9.3	14.1
1987	7.7	6.4	8.8	-	-	-	-	16.1	13.4	11.0	24.3	20.1	-
1988	12.3	10.8	23.2	46.9	80.3	64.4	54.0	64.2	8.8	6.3	25.2	11.6	34.0
1989	8.6	11.7	10.8	22.7	46.2	49.2	31.4	-	-	-	-	-	-
MEAN	10.6	16.5	15.6	26.6	42.4	39.9	38.7	43.0	41.5	28.0	24.1	14.9	30.5
MAX.	24.9	57.1	83.0	101.0	88.6	64.4	69.3	76.4	101.9	66.1	72.6	51.5	53.0
MIN.	3.5	2.4	3.1	5.3	8.8	9.0	10.6	16.1	8.8	6.3	6.6	4.3	11.7

表5.3　キプソノイ川流域内の流量観測所における月平均流量

River Name : Kipsonoi
ID.Number : 1JF1
Catchment Area : 1523 km3
Latitude : 0°30'45"S
Londitude : 35°04'45"E

Unit : m3/s

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1951	-	-	2.0	84.3	16.9	14.2	5.3	8.0	6.2	5.8	11.0	40.9	-
1952	20.2	8.2	-	-	71.2	14.6	12.2	11.3	10.1	7.7	4.7	2.8	-
1953	1.5	1.2	1.0	1.8	4.0	4.6	4.2	2.2	2.5	4.0	5.2	4.5	3.0
1954	1.9	0.4	0.5	4.1	35.4	33.7	7.1	5.4	4.1	5.2	4.0	3.6	8.8
1955	-	-	-	-	-	2.3	3.4	10.9	16.4	12.9	8.2	6.4	-
1956	13.6	8.5	3.5	12.0	21.4	14.9	10.0	11.6	22.9	16.0	8.2	4.9	-
1957	2.7	3.7	2.8	30.1	65.9	70.7	23.7	11.7	10.7	6.4	2.8	2.8	19.5
1958	1.9	5.5	2.8	3.1	23.6	7.4	7.6	7.4	12.9	6.7	2.8	3.2	7.1
1959	2.2	1.7	5.5	14.1	18.3	7.6	2.8	2.7	5.4	5.4	3.7	3.5	6.1
1960	1.8	1.3	11.5	29.2	12.8	9.7	6.6	6.2	14.4	8.3	4.8	2.7	9.1
1961	1.5	0.9	1.2	4.5	13.9	3.1	1.8	3.3	5.3	6.5	60.4	75.6	14.8
MEAN	5.2	3.5	3.4	20.4	28.3	16.6	7.7	7.3	10.1	7.7	10.5	13.7	9.8
MAX.	20.2	8.5	11.5	84.3	71.2	70.7	23.7	11.7	22.9	16.0	60.4	75.6	19.5
MIN.	1.5	0.4	0.5	1.8	4.0	2.3	1.8	2.2	2.5	4.0	2.8	2.7	3.0

River Name : Kipsonoi
ID.Number : 1JF7
Catchment Area : 1411 km2
Latitude : 0°35'25"S
Londitude : 35°05'08"E

Unit : m3/s

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985	-	-	7.1	164.2	58.9	31.0	8.9	19.9	13.3	2.9	8.2	3.8	-
1986	2.1	1.6	1.3	2.5	13.6	6.3	4.0	5.3	3.9	2.4	2.0	5.2	4.2
1987	2.5	2.1	9.1	8.2	52.0	115.4	15.3	3.9	4.7	3.0	6.7	3.9	18.9
1988													-
1989													-
MEAN	2.3	1.9	5.8	58.3	41.5	50.9	9.4	9.7	7.3	2.8	5.7	4.3	11.5
MAX.	2.5	2.1	9.1	164.2	58.9	115.4	15.3	19.9	13.3	3.0	8.2	5.2	18.9
MIN.	2.1	1.6	1.3	2.5	13.6	6.3	4.0	3.9	3.9	2.4	2.0	3.8	4.2

River Name : Kipsonoi
ID.Number : 1JF8
Catchment Area : 1540 km2
Latitude : 0°30'37"S
Londitude : 35°04'42"E

Unit : m3/s

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1986	3.6	2.7	2.3	4.0	13.9	8.2	6.0	6.9	5.8	4.2	3.6	5.9	5.6
1987	4.1	3.4	11.3	7.9	26.4	46.9	13.4	5.5	5.7	3.9	7.0	5.5	11.8
1988	3.8	3.0	5.6	34.8	60.9	15.5	11.6	17.9	15.7	16.6	7.9	4.8	16.5
1989	3.2	5.2	5.3	38.2	46.8	11.0	7.3	11.5	19.3	20.9	10.9	-	-
MEAN	3.7	3.6	6.1	21.2	37.0	20.4	9.6	10.4	11.6	11.4	7.4	5.4	11.3
MAX.	4.1	5.2	11.3	38.2	60.9	46.9	13.4	17.9	19.3	20.9	10.9	5.9	16.5
MIN.	3.2	2.7	2.3	4.0	13.9	8.2	6.0	5.5	5.7	3.9	3.6	4.8	5.6

表5.4　1GD4流量観測所における月平均流量

River Name : Nyando
ID.Number : 1GD4
Catchment Area : 2520 km2
Latitude : 0°06'S
Londitude : 35°02'E

Unit : m3/s

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1956	15.1	8.5	5.5	17.3	25.4	16.0	22.3	37.7	27.0	13.5	5.5	4.8	16.5
1957	2.3	2.0	2.5	14.6	20.5	35.4	14.8	19.4	10.9	3.8	3.0	2.5	11.0
1958	1.6	4.7	3.7	2.3	15.0	8.8	22.2	21.9	15.7	7.8	2.8	3.2	9.1
1959	1.9	1.6	3.1	5.7	10.1	3.5	2.5	4.0	9.3	5.2	7.6	3.3	4.8
1960	1.6	1.1	10.1	22.2	19.9	7.7	5.6	9.8	15.3	6.0	5.9	1.8	8.9
1961	0.6	0.7	1.8	4.4	6.2	2.6	2.5	24.9	21.5	12.0	41.8	45.2	13.7
1962	-	-	18.6	36.6	70.7	39.2	31.3	37.7	38.2	23.8	13.4	12.4	-
1963	12.1	11.8	12.3	26.3	80.6	39.0	16.9	29.0	18.5	8.9	14.1	32.1	25.1
1964	10.1	7.9	8.8	41.6	23.9	15.7	28.5	37.4	33.4	25.9	10.1	7.9	20.9
1965	6.5	4.6	4.3	6.7	6.7	3.8	3.8	4.6	3.7	5.3	6.4	4.8	5.1
1966	3.2	5.8	11.3	27.9	11.3	9.0	10.1	11.4	19.0	6.6	6.6	3.9	10.5
1967	2.6	3.1	2.7	9.5	26.4	13.2	30.6	21.2	13.6	7.8	15.8	19.8	13.9
1968	5.7	13.1	15.1	34.7	28.0	21.9	18.1	29.1	12.3	8.0	7.2	9.8	16.9
1969	5.9	11.4	9.1	4.2	8.3	5.4	5.0	7.8	8.3	4.5	3.8	2.6	6.4
1970	9.1	6.5	10.0	19.2	19.6	14.5	12.8	25.7	20.4	11.0	6.2	4.4	13.3
1971	3.6	2.3	2.4	10.6	17.5	14.7	20.1	25.3	22.1	13.1	6.9	5.8	12.0
1972	4.6	6.4	3.6	3.2	12.3	10.4	13.2	12.2	7.7	10.2	23.6	10.1	9.8
1973	8.6	8.7	4.7	4.6	10.5	11.1	7.2	16.4	17.6	9.3	7.1	3.9	9.1
1974	3.2	2.2	3.5	16.0	9.7	10.3	24.4	12.3	12.4	8.3	5.1	3.5	9.2
1975	2.4	3.0	4.5	9.4	7.3	12.4	15.0	28.7	36.1	20.5	8.6	6.9	12.9
1976	3.6	3.1	2.5	4.2	8.2	8.8	12.1	12.3	12.4	4.9	4.3	3.5	6.6
1977	3.7	5.8	3.6	12.7	29.9	22.0	20.9	21.4	16.3	10.6	31.0	16.9	16.2
1978	12.2	9.9	18.7	23.4	23.3	11.8	17.1	18.7	19.1	15.6	9.8	10.3	15.8
1979	7.7	27.6	13.5	15.5	14.1	18.0	14.9	21.5	12.2	7.8	7.0	5.1	13.7
1980	4.1	3.2	3.5	8.5	16.1	11.8	11.9	8.7	7.6	4.5	4.4	3.1	7.3
1981	2.7	2.7	5.8	22.7	17.2	7.0	11.9	20.2	17.4	12.6	6.7	4.5	10.9
1982	2.8	3.5	2.4	7.6	15.8	11.8	7.5	15.8	9.1	7.8	16.6	23.8	10.4
1983	7.4	5.3	3.4	6.6	7.7	9.8	8.7	18.4	21.0	18.6	10.4	5.1	10.2
1984	4.7	3.1	2.5	6.1	3.6	3.9	4.5	7.3	5.9	3.8	3.8	4.3	4.5
1985	2.9	2.9	2.7	-	-	-	-	15.0	12.6	6.9	-	4.5	6.8
1986	3.7	3.3	3.7	5.4	10.3	9.7	10.3	7.6	7.3	5.6	4.2	3.5	6.2
1987	2.8	2.5	6.0	4.8	8.9	12.8	6.6	4.8	4.1	3.9	-	4.2	-
1988	4.5	3.5	3.8	12.4	15.4	6.6	-	19.9	16.0	14.9	8.7	5.5	-
1989													
MEAN	5.1	5.7	6.4	14.0	18.8	13.4	14.0	18.4	15.9	10.0	9.9	8.6	11.3
MAX.	15.1	27.6	18.7	41.6	80.6	39.2	31.3	37.7	38.2	25.9	41.8	45.2	25.1
MIN.	0.6	0.7	1.8	2.3	3.6	2.6	2.5	4.0	3.7	3.8	2.8	1.8	4.5

表5.5　1JG1流量観測所における流量観測記録

Date	Gauge Height (m)	Discharge (m3/s)
23/3/46	0.98	2.28
2/4/46	0.88	1.80
13/10/46	1.87	32.37
15/10/46	1.83	31.04
17/10/46	1.80	29.70
23/10/46	1.66	24.58
14/1/47	1.37	11.99
27/3/47	1.69	29.00
28/3/47	1.58	20.34
12/4/47	2.09	55.33
13/4/47	2.03	52.04
14/4/47	2.00	49.20
15/4/47	2.21	71.66
15/4/47	2.30	57.41
16/4/47	2.19	67.01
6/8/47	2.13	63.68
26/1/48	1.14	4.26
13/2/48	1.04	2.92
4/3/48	1.02	2.78
13/4/48	0.94	2.27
19/4/48	1.19	5.66
20/4/48	1.25	7.31
21/4/48	1.28	8.35
18/5/48	1.40	12.80
28/5/48	1.32	9.39
23/3/49	0.87	1.49
7/2/50	1.12	3.69
9/3/50	0.93	1.51
24/5/50	1.92	41.63
1/5/51	2.80	139.84
3/5/51	2.71	122.38
6/5/51	2.50	107.30
7/5/51	2.47	101.78
28/8/51	2.19	65.99
30/8/51	2.09	58.32
31/8/51	2.06	51.70
16/5/52*	-	-
17/5/53	1.34	9.05
28/3/53	1.00	2.53
16/4/53	1.26	7.29
4/1/54	1.09	3.98
8/2/54	0.86	1.47
12/2/54	0.81	0.96
25/3/54	0.89	1.59
19/5/54	1.90	36.56
30/7/54	1.77	33.64
24/8/54	2.07	52.66
19/10/54	1.70	23.60
23/11/54	1.41	10.78
10/1/55	1.19	3.93
23/3/55	0.90	1.48
4/6/55	1.46	12.03
19/9/55	2.32	86.68
10/11/55	1.78	28.26
29/5/56	2.47	97.38
10/7/56	2.10	58.90
13/9/56	2.50	94.46
23/9/57	1.78	27.54
17/3/59	0.97	3.66
15/2/60	1.16	5.83
21/2/61	1.12	4.22
16/9/61	1.99	37.49
21/9/61	1.91	33.17
21/9/61	1.91	39.35
21/9/61	1.90	35.46
9/11/61	2.74	117.57
9/11/61	2.69	83.42
9/11/61	2.74	148.98
9/11/61	2.74	124.74
21/11/61	3.63	349.69
20/7/65	1.53	18.52
21/4/67	1.58	24.87
26/4/67	2.09	65.40
18/11/68	1.63	16.43
31/1/69	1.77	34.23
28/2/69	2.38	196.45
11/4/69	1.61	45.10
21/3/69	1.78	45.13
16/5/69	1.87	40.16
18/9/69	2.10	58.90
10/11/69	1.40	7.99
14/11/69	1.31	10.05
8/9/71	2.79	95.36
18/8/72	1.86	19.74
15/2/84	1.26	6.53
29/2/84	1.26	7.27
13/3/84	1.19	6.21
28/3/84	1.14	3.14
14/5/84	1.52	12.02
15/6/84	1.36	7.45
23/6/84	1.39	9.22
28/6/84	1.34	7.18
4/7/84	1.31	7.58

Note : * Data is discarded due to the fact that there is discrepancy between observed gauge height and measured discharge.

表5.6　1JD3流量観測所における流量観測記録 (1/2)

Date	Gauge Height (m)	Discharge (m3/s)	Date	Gauge Height (m)	Discharge (m3/s)
20/3/69	1.89	9.70	23/1/75	1.70	4.75
10/5/69	1.95	11.89	19/2/75	1.65	3.40
22/9/69	2.43	18.43	7/3/75	1.67	3.68
13/11/69	1.82	6.80	14/3/75	1.64	3.30
19/11/69	1.79	6.46	6/5/75	2.06	19.02
26/11/69	1.86	8.10	8/7/75	2.14	29.85
8/12/69	1.74	4.85	28/1/76	1.75	5.70
29/12/69	1.67	3.09	16/2/76	1.65	3.90
19/1/70	1.78	6.05	3/3/76	1.73	5.00
5/2/70	2.02	13.58	2/4/76	1.71	4.62
20/2/70	2.02	15.48	27/4/76	1.81	7.02
21/8/70	2.88	57.13	2/6/76	2.44	35.75
23/9/70	2.59	46.51	2/7/76	2.36	34.47
19/10/70	2.46	35.45	27/1/77	1.86	9.49
29/10/70	2.40	36.47	4/2/77	1.96	11.72
17/11/70	2.18	25.33	3/3/77	1.88	10.13
26/11/70	2.09	21.50	26/4/77	2.44	34.95
9/12/70	1.95	15.62	24/5/77	2.90	62.50
13/1/71	1.80	7.54	9/6/77	2.66	42.07
11/2/71	1.72	4.61	23/7/77	2.78	54.90
15/3/71	1.65	3.13	9/9/77	2.40	31.40
5/4/71	1.61	2.18	21/10/77	2.03	14.79
22/7/71	2.66	60.62	7/12/77	2.78	57.33
18/8/71	2.90	72.85	9/1/78	2.01	15.40
21/9/71	2.51	111.36	8/2/78	1.94	11.70
28/10/71	2.17	31.94	8/3/78	2.45	27.38
12/11/71	2.02	14.13	22/7/78	2.44	33.19
15/12/71	1.83	8.12	8/8/78	2.50	38.57
13/1/72	1.82	7.85	7/12/78	2.04	17.10
15/2/72	1.80	6.00	15/1/79	1.88	11.01
10/3/72	1.77	5.14	12/2/79	2.65	39.84
6/4/72	1.72	3.73	20/3/79	2.32	29.60
5/5/72	1.84	8.22	11/4/79	2.28	24.28
5/6/72	2.29	36.45	9/5/79	2.41	30.77
5/7/72	2.52	52.59	6/27/79	2.64	47.43
4/8/72	2.27	37.35	28/7/79	2.32	27.81
5/9/72	2.28	39.33	28/8/79	2.67	51.83
6/10/72	1.94	17.78	14/9/79	2.24	27.07
6/11/72	2.30	43.79	11/10/79	2.00	14.87
6/12/72	2.45	46.82	14/11/79	1.82	7.54
9/1/73	2.02	21.46	12/14/79	1.76	6.31
5/2/73	2.04	24.94	9/1/80	1.70	5.69
5/3/73	2.05	24.49	22/2/80	1.60	2.35
5/4/73	1.80	8.00	12/3/80	1.69	2.73
10/5/73	1.95	19.11	28/4/80	1.75	5.78
24/5/73	2.11	28.25	12/5/80	1.96	25.12
25/6/73	2.09	46.60	13/6/80	2.28	20.97
25/7/73	2.09	25.82	15/7/80	2.55	49.12
13/8/73	2.47	48.82	19/8/80	2.16	21.13
26/9/73	2.51	53.14	24/9/80	2.16	20.97
31/10/73	2.08	21.00	23/10/80	1.87	8.89
19/11/73	2.20	32.82	19/11/80	1.90	11.46
7/12/73	2.00	18.52	17/12/80	1.80	6.92
17/12/73	1.83	13.86	10/3/81	1.58	1.37
31/1/74	1.73	4.78	1/3/82	0.64	3.30
5/3/74	1.80	7.16	27/2/83	0.74	6.55
9/4/74	2.01	19.90	14/2/84	0.70	5.61
7/5/74	2.12	29.77	28/2/84	0.70	5.19
24/6/74	2.27	27.92	13/3/84	0.73	5.44
22/10/74	2.18	28.78	27/3/84	0.66	3.87
4/12/74	1.87	16.16	13/4/84	0.77	6.62
24/12/74	1.79	7.04	14/5/84	0.77	7.37
31/12/74	1.77	5.85	28/6/84	0.70	5.07
6/1/75	1.79	4.45	15/6/84	0.75	6.29
15/1/75	1.71	4.42	23/6/84	0.79	8.01

表5.6　1JD3流量観測所における流量観測記録 (2/2)

Date	Gauge Height (m)	Discharge (m3/s)
4/7/84	0.71	6.16
26/7/84	0.79	8.42
9/8/84	1.09	20.39
16/8/84	1.11	22.02
23/8/84	1.15	22.94
30/8/84	1.19	23.95
12/9/84	1.15	21.24
21/9/84	1.04	16.53
28/9/84	0.91	12.29
5/10/84	1.03	15.96
12/10/84	1.01	16.10
19/10/84	0.82	13.39
15/11/84	0.83	9.89
22/11/84	0.81	9.86
29/11/84	0.83	8.63
6/12/84	0.81	8.44
13/12/84	0.97	15.92
20/12/84	0.91	12.09
27/12/84	0.80	8.45
3/1/85	0.79	7.96
10/1/85	0.73	6.60
17/1/85	0.69	4.95
24/1/85	0.67	4.70
31/1/85	0.79	8.18
7/2/85	0.80	6.63
14/2/85	0.67	3.15
21/2/85	0.65	2.88
28/2/85	0.70	3.41
7/3/85	0.64	2.79
14/3/85	0.59	1.91
21/3/85	0.68	4.47
28/3/85	0.07	4.16
9/4/85	1.10	20.36
26/4/85	1.76	61.09
4/5/85	1.66	53.53
14/6/85	1.50	45.57
27/6/85	1.30	32.17
4/7/85	1.25	26.62
18/7/85	1.28	31.89
1/8/85	1.49	40.20
8/8/85	1.60	41.45
15/8/85	1.70	49.68
22/8/85	1.55	41.02
29/8/85	1.59	50.56
19/9/85	1.48	32.32
26/9/85	1.36	28.74
3/10/85	1.16	19.69
10/10/85	1.12	16.70
24/10/85	0.93	11.35
7/11/85	0.95	10.80
19/12/85	0.74	4.74
9/1/86	0.75	5.08
23/1/86	0.64	2.77
30/1/86	0.65	2.98
6/2/86	0.86	9.09
13/2/86	0.65	3.06
20/2/86	0.66	3.28
27/2/86	0.63	2.46
13/3/86	0.89	1.43
20/3/86	0.58	1.02
27/3/86	0.59	1.73
3/4/86	0.60	1.71
10/4/86	0.78	6.50
27/4/86	0.58	11.31
1/5/86	0.85	8.24
8/5/86	1.03	16.64
15/5/86	1.09	20.67
22/5/86	1.15	24.87
23/5/86	1.12	19.01
12/6/86	1.13	22.71
19/9/86	1.18	21.66
3/7/86	1.10	18.72
10/7/86	1.05	19.03
17/7/86	1.02	16.13
24/7/86	1.02	16.94
7/8/86	1.17	19.84
14/8/86	1.11	17.74
11/9/86	1.09	17.64
18/9/86	1.05	12.88
16/10/86	0.92	13.28
13/11/86	0.80	7.36
17/12/86	0.74	5.51
22/1/87	0.66	3.07
22/4/87	0.91	10.43
15/5/87	1.22	25.38
9/7/87	1.43	41.45
26/8/87	1.11	17.39
18/9/87	0.88	12.06
12/10/87	0.79	7.76
25/2/88	0.77	6.97

表5.7　1JF8流量観測所における流量観測記録

Date	Gauge Height (m)	Discharge (m3/s)
28/3/84	0.19	0.50
14/5/84	0.46	3.27
8/6/84	0.35	1.57
15/6/84	0.32	1.26
28/6/84	0.32	1.34
4/7/84	0.28	1.00
17/7/84	0.33	1.31
26/7/84	0.45	2.99
9/8/84	0.55	5.64
16/8/84	0.60	6.91
23/8/84	0.63	7.63
30/8/84	0.65	9.42
12/9/84	0.71	10.69
21/9/84	0.59	6.68
28/9/84	0.50	3.65
12/10/84	0.56	5.62
5/10/84	0.55	5.28
19/10/84	0.53	4.73
15/11/84	0.46	3.47
22/11/84	0.50	3.49
29/11/84	0.53	4.93
6/12/84	0.50	4.08
13/12/84	1.36	42.00
20/12/84	0.78	12.95
27/12/84	0.58	6.79
3/1/85	0.49	4.06
10/1/85	0.45	3.28
17/1/85	0.39	2.01
24/1/85	0.36	1.66
31/1/85	0.43	2.78
7/2/85	0.54	4.05
14/2/85	0.38	1.57
21/5/85	0.34	1.22
28/2/85	0.37	1.18
7/3/85	0.43	2.66
14/3/85	0.32	0.81
21/3/85	0.32	1.22
9/4/85	1.10	25.69
18/4/85	1.71	52.10
26/4/85	1.61	57.36
4/5/85	1.18	28.16
10/5/85	0.98	16.42
24/5/85	1.27	32.73
31/5/85	1.28	33.79
14/6/85	0.92	16.82
27/6/85	0.77	11.59
4/7/85	0.67	8.90
18/7/85	0.61	7.63
25/7/85	0.80	11.30
1/8/85	0.81	13.53
8/8/85	0.85	16.22
15/8/85	1.27	35.91
22/8/85	0.89	15.72
29/8/85	0.92	18.60
12/9/85	0.86	14.82
19/9/85	0.78	9.75
26/9/85	0.67	9.16
3/10/85	0.56	4.96
10/10/86	0.50	3.60
17/10/85	0.48	3.06
24/10/85	0.48	3.97
7/11/85	0.48	2.75
19/12/85	0.48	2.91
9/1/86	0.44	2.80
23/1/86	0.38	1.97
30/1/86	0.34	1.32
6/2/86	0.44	2.46
23/2/86	0.33	1.00
20/2/86	0.44	2.71
27/2/86	0.30	0.96
13/3/86	0.34	0.87
20/3/86	0.33	0.70
27/3/86	0.31	1.20
3/4/86	0.31	0.85
10/4/86	0.47	2.41
27/4/86	0.52	3.39
1/5/86	0.58	4.63
8/5/86	0.85	15.56
15/5/86	0.84	15.23
22/5/86	0.73	11.16
29/5/86	0.70	8.06
5/6/86	0.64	6.03
12/6/86	0.66	8.19
18/6/86	0.64	7.85
26/6/86	0.56	4.32
3/7/86	0.55	4.43
10/7/86	0.56	5.43
17/7/86	0.54	4.47
24/7/86	0.54	5.27
7/8/86	0.58	6.05
14/8/86	0.56	4.72
29/8/86	0.56	4.59
11/9/86	0.54	4.08
18/9/86	0.51	3.76
26/9/86	0.53	3.89
16/10/86	0.44	2.91
7/11/86	0.45	2.64
13/11/86	0.44	2.64
17/12/86	0.63	6.58
22/1/87	0.4	1.96
15/5/87	1.01	19.67
9/6/87	1.69	57.18
9/7/87	0.91	17.78
26/8/87	0.55	4.10
18/8/87	0.49	3.96
12/10/87	0.5	4.09
25/2/88	0.34	1.21
26/10/88	0.7	10.05
11/11/88	0.6	6.58
12/3/88	0.33	1.72
17/8/89	0.77	13.20
5/10/89	0.85	15.65
9/11/89	0.73	11.25

表5.8　ソンドゥ川流域における流出係数

Basin	Sondu River				Yurith River				Kipsonoi River			
ST. No.	1JG1				1JD3				1JF8 (1JF1)			
CA.	3260 km2				1570 km2				1540 (1523) km2			
	Runoff (m3/s)	Runoff (mm)	Rainfall (mm)	Coeff. (%)	Runoff (m3/s)	Runoff (mm)	Rainfall (mm)	Coeff. (%)	Runoff (m3/s)	Runoff (mm)	Rainfall (mm)	Coeff. (%)
Year												
1947	60.7	587	1816	32%			2125				1507	
1948	19.6	190	1412	13%			1667				1221	
1949	15.4	149	1260	12%			1449				1119	
1950	21.1	204	1394	15%			1672				1185	
1951	51.1	494	1863	27%			2034				1655	
1952	48.1	465	1455	32%			1687				1281	
1953	7.5	73	1210	6%			1382		3.0	62	1080	6%
1954	26.1	252	1442	18%			1637		8.8	182	1285	14%
1955	25.3	245	1497	16%			1649				1388	
1956	48.1	465	1571	30%			1864				1377	
1957	44.2	428	1474	29%			1546		19.5	404	1301	31%
1958	25.2	244	1446	17%			1536		7.1	147	1302	11%
1959	24.4	236	1398	17%			1600		6.1	126	1172	11%
1960	38.1	369	1554	24%			1701		9.1	188	1317	14%
1961	58.3	564	1832	31%			2063		14.8	306	1568	20%
1962	66.2	640	1677	38%			2039				1460	
1963	64.3	622	1685	37%			1853				1494	
1964	60.6	586	1486	39%			1750				1286	
1965	22.0	213	1206	18%			1369				1015	
1966	36.6	354	1408	25%			1575				1250	
1967	36.6	354	1517	23%			1779				1319	
1968	66.3	641	1780	36%			1852				1647	
1969	24.9	241	1202	20%			1241				1118	
1970	60.7	587	1805	33%	39.4	788	1972	40%			1616	
1971	39.4	381	1434	27%	30.5	610	1584	39%			1323	
1972	30.6	296	1373	22%			1596				1239	
1973	37.1	359	1411	25%	27.4	548	1547	35%			1281	
1974	44.0	426	1478	29%			1715				1240	
1975	44.6	431	1521	28%	34.4	688	1715	40%			1391	
1976	26.5	256	1248	21%	21.2	424	1444	29%			1052	
1977	70.2	679	1808	38%	44.5	890	1945	46%			1668	
1978	79.5	769	1892	41%	53.0	1061	2088	51%			1634	
1979	47.0	455	1519	30%			1608				1435	
1980	24.7	239	1296	18%			1387				1179	
1981	47.3	458	1582	29%			1732				1325	
1982	50.8	491	1745	28%			1904				1532	
1983	43.7	423	1582	27%			1731				1441	
1984	17.0	164	1152	14%	11.7	234	1250	19%			892	
1985	47.2	457	1521	30%	25.0	500	1597	31%			1383	
1986	21.0	203	1287	16%	14.1	282	1372	21%	5.6	115	1239	9%
1987	36.4	352	1420	25%			1600		11.8	242	1337	18%
1988	62.2	602	1803	33%	34.0	680	2136	32%	16.5	338	1641	21%
Sample	42	42	42	42	11	11	42	11	10	10	42	10
Mean	41.0	396	1511	26%	30.5	610	1690	36%	10.2	211	1338	16%
Min.	7.5	73	1152	6%	11.7	234	1241	19%	3.0	62	892	7%
Max.	79.5	769	1892	41%	53.0	1061	2136	50%	19.5	404	1668	24%

表5.9　シリーズ法によるマグワグワダム地点における流況

Year : 1946 - 1990
Total : 16255 Days
Maximum : 528.0 CMS
Minimum : 0.69 CMS

Duration (%)	Discharge (m3/s)	Duration (%)	Discharge (m3/s)	Duration (%)	Discharge (m3/s)	Duration (%)	Discharge (m3/s)
1	234.42	26	53.01	51	24.89	76	10.59
2	175.56	27	51.67	52	24.00	77	10.26
3	150.60	28	50.62	53	23.29	78	9.91
4	133.71	29	49.33	54	22.45	79	9.58
5	122.08	30	48.01	55	21.75	80	9.29
6	111.18	31	46.81	56	21.01	81	8.97
7	103.45	32	45.54	57	20.41	82	8.71
8	97.39	33	44.38	58	19.70	83	8.39
9	93.11	34	43.07	59	19.05	84	8.15
10	89.92	35	41.79	60	18.46	85	7.84
11	85.67	36	40.69	61	17.87	86	7.38
12	82.29	37	39.36	62	17.44	87	6.97
13	78.73	38	38.13	63	16.89	88	6.61
14	76.18	39	37.06	64	16.32	89	6.28
15	73.42	40	36.07	65	15.68	90	5.86
16	71.39	41	35.09	66	15.04	91	5.60
17	69.08	42	34.01	67	14.67	92	5.29
18	66.51	43	32.92	68	14.17	93	4.92
19	64.47	44	32.07	69	13.70	94	4.60
20	62.55	45	30.97	70	13.19	95	4.26
21	60.80	46	29.88	71	12.79	96	3.89
22	58.91	47	28.84	72	12.46	97	3.39
23	57.74	48	27.82	73	11.91	98	2.88
24	56.05	49	26.80	74	11.50	99	2.29
25	54.47	50	25.86	75	10.90	100	0.69

Note : The above flow duration is based on daily average flow.

表5.10　パラレル法によるマグワグワダム地点における流況

Duration (Days)	Discharge (m3/sec)	Duration (Days)	Discharge (m3/sec)	Duration (Days)	Discharge (m3/sec)	Duration (Days)	Discharge (m3/sec)	Duration (Days)	Discharge (m3/sec)	Duration (Days)	Discharge (m3/sec)
1	186.8	71	61.2	141	39.6	211	23.8	281	12.1	351	6.1
2	177.0	72	60.7	142	39.4	212	23.7	282	12.0	352	6.0
3	170.0	73	60.3	143	39.2	213	23.5	283	11.9	353	5.9
4	164.2	74	59.9	144	39.0	214	23.4	284	11.8	354	5.9
5	159.8	75	59.4	145	38.8	215	23.2	285	11.7	355	5.8
6	156.0	76	58.8	146	38.5	216	23.1	286	11.5	356	5.7
7	150.3	77	58.5	147	38.3	217	22.8	287	11.4	357	5.7
8	147.0	78	58.1	148	38.0	218	22.7	288	11.3	358	5.6
9	144.4	79	57.5	149	37.7	219	22.6	289	11.2	359	5.4
10	139.6	80	57.0	150	37.5	220	22.4	290	11.1	360	5.3
11	135.0	81	56.6	151	37.1	221	22.2	291	10.9	361	5.2
12	132.2	82	56.3	152	36.8	222	22.0	292	10.8	362	5.1
13	129.0	83	56.0	153	36.6	223	21.8	293	10.7	363	5.0
14	126.6	84	55.7	154	36.2	224	21.6	294	10.6	364	4.9
15	124.4	85	55.3	155	36.0	225	21.4	295	10.5	365	4.8
16	121.7	86	55.1	156	35.7	226	21.2	296	10.4		
17	118.7	87	54.7	157	35.5	227	21.0	297	10.3		
18	117.1	88	54.4	158	35.2	228	20.8	298	10.2		
19	115.4	89	54.1	159	34.9	229	20.6	299	10.1		
20	114.0	90	53.8	160	34.7	230	20.4	300	10.0		
21	112.7	91	53.4	161	34.5	231	20.3	301	9.9		
22	111.0	92	53.2	162	34.3	232	20.1	302	9.9		
23	109.7	93	52.9	163	34.0	233	20.0	303	9.8		
24	108.4	94	52.7	164	33.8	234	19.8	304	9.7		
25	106.9	95	52.1	165	33.6	235	19.6	305	9.6		
26	105.3	96	51.8	166	33.3	236	19.4	306	9.5		
27	104.4	97	51.5	167	33.1	237	19.3	307	9.4		
28	103.3	98	51.1	168	32.9	238	19.1	308	9.3		
29	101.3	99	50.8	169	32.6	239	18.9	309	9.2		
30	99.6	100	50.6	170	32.4	240	18.6	310	9.1		
31	98.1	101	50.3	171	32.1	241	18.3	311	9.1		
32	96.6	102	49.9	172	31.9	242	18.1	312	9.0		
33	95.6	103	49.6	173	31.7	243	17.9	313	8.8		
34	94.2	104	49.3	174	31.5	244	17.7	314	8.8		
35	93.0	105	49.1	175	31.2	245	17.5	315	8.7		
36	92.0	106	48.8	176	31.0	246	17.3	316	8.6		
37	90.6	107	48.6	177	30.8	247	17.1	317	8.5		
38	89.1	108	48.3	178	30.6	248	17.0	318	8.4		
39	88.4	109	47.9	179	30.4	249	16.8	319	8.3		
40	87.4	110	47.6	180	30.2	250	16.5	320	8.3		
41	86.0	111	47.5	181	30.0	251	16.4	321	8.2		
42	84.6	112	47.2	182	29.8	252	16.2	322	8.2		
43	82.9	113	47.0	183	29.6	253	16.0	323	8.1		
44	81.5	114	46.8	184	29.4	254	15.9	324	8.0		
45	80.5	115	46.4	185	29.1	255	15.8	325	7.9		
46	79.5	116	46.2	186	29.0	256	15.6	326	7.9		
47	78.4	117	46.0	187	28.7	257	15.4	327	7.8		
48	77.6	118	45.8	188	28.4	258	15.3	328	7.7		
49	76.5	119	45.6	189	28.1	259	15.1	329	7.7		
50	75.6	120	45.3	190	27.8	260	14.9	330	7.6		
51	75.0	121	45.0	191	27.7	261	14.8	331	7.5		
52	74.2	122	44.8	192	27.5	262	14.6	332	7.5		
53	73.4	123	44.5	193	27.2	263	14.5	333	7.3		
54	72.1	124	44.3	194	27.0	264	14.4	334	7.3		
55	70.9	125	44.0	195	26.8	265	14.3	335	7.2		
56	70.3	126	43.8	196	26.7	266	14.1	336	7.2		
57	69.6	127	43.5	197	26.4	267	14.0	337	7.1		
58	68.9	128	43.2	198	26.3	268	13.8	338	7.0		
59	68.3	129	42.9	199	26.0	269	13.7	339	6.9		
60	67.8	130	42.8	200	25.9	270	13.6	340	6.9		
61	67.1	131	42.5	201	25.6	271	13.5	341	6.8		
62	66.3	132	42.2	202	25.5	272	13.3	342	6.7		
63	65.7	133	41.9	203	25.3	273	13.2	343	6.6		
64	65.1	134	41.7	204	25.1	274	13.0	344	6.5		
65	64.6	135	41.4	205	25.0	275	12.8	345	6.5		
66	64.0	136	41.2	206	24.8	276	12.7	346	6.4		
67	63.3	137	40.8	207	24.6	277	12.6	347	6.3		
68	62.7	138	40.6	208	24.3	278	12.5	348	6.3		
69	62.3	139	40.2	209	24.2	279	12.4	349	6.2		
70	61.7	140	39.9	210	24.0	280	12.2	350	6.1		

表6.1　1JG1観測所における年最大洪水流量

YEAR	DATE (date-month)	GAUGE HEIGHT (m)	DISCHARGE (m3/s)
1947	15-5	4.103	580
1948	1-9	2.377	87
1949	1-9	2.256	72
1950	19-9	2.256	72
1951	25-4	3.395	300
1952	14-5	3.438	313
1953	3-5	1.564	20
1954	9-6	2.548	110
1955	3-10	2.524	107
1956	9-9	2.780	150
1957	5-6	3.264	262
1958	15-5	2.822	158
1959	26-5	-	-
1960	21-4	2.563	113
1961	28-11	4.100	578
1962	10-5	3.594	366
1963	3-6	3.627	378
1964	24-4	4.069	563
1965	2-5	2.734	141
1966	30-4	3.097	218
1967	10-5	2.652	127
1968	1-5	3.728	415
1969	3-2	2.752	144
1970	25-4	3.066	210
1971	8-9	2.865	166
1972	28-11	2.505	104
1973	9-6	2.777	149
1974	9-7	3.188	241
1975	4-9	3.127	225
1976	7-9	2.606	119
1977	4-5	3.350	286
1978	25-3	3.847	463
1979	14-5	2.697	135
1980	5-7	2.438	95
1981	14-4	3.377	294
1982	4-12	3.499	333
1983	11-9	2.896	172
1984	12-12	2.618	121
1985	16-4	3.142	229
1986	4-5	2.316	79
1987	12-6	3.225	251
1988	8-5	3.511	337
1989	8-5	3.310	275
1990	6-4	4.220	639

表6.2　１ＪＧ１観測所における洪水ピーク流量の発生頻度

Unit : m3/s

RETURN PERIOD (Yr.)	GUMBEL	LOG PEARSON III
1000	1,074	1,634
500	982	1,409
200	861	1,140
100	769	958
80	739	903
50	677	792
40	647	741
30	609	679
25	584	641
20	554	595
10	459	461
5	360	339
2	210	188
1.50	149	139
1.01	-	37

表6.3　1JG1で観測された1957年洪水

Count	Year	Month	Date	Accum. Time	Basin Rain (mm)	Runoff at 1JG1 (m3/s)	Basin Rain (mm)	Accum. Rain (mm)	Runoff at 1JG1 (m3/s)	Base Flow (m3/s)	Direct Runoff (m3/s)	Accum. Volume (mil.m3)
1	1957	5	29	0	0.00	92.77		0.00			0.00	0.00
2	1957	5	30	24	0.00	140.65		0.00			0.00	0.00
3	1957	5	31	48	0.00	146.75		0.00			0.00	0.00
4	1957	6	1	72	13.44	154.20	13.44	13.44	154.20	100	54.20	4.68
5	1957	6	2	96	3.84	174.96	3.84	17.28	174.96	100	74.96	11.16
6	1957	6	3	120	18.13	190.08	18.13	35.41	190.08	100	90.08	18.94
7	1957	6	4	144	7.36	201.14	7.36	42.77	201.14	100	101.14	27.68
8	1957	6	5	168	3.59	230.77	3.59	46.36	230.77	100	130.77	38.98
9	1957	6	6	192	7.54	191.44	7.54	53.90	191.44	100	91.44	46.88
10	1957	6	7	216	1.31	198.33	1.31	55.21	198.33	100	98.33	55.38
11	1957	6	8	240	4.60	190.76	4.60	59.81	190.76	100	90.76	63.22
12	1957	6	9	264	0.00	182.08	0.00	59.81	182.08	100	82.08	70.31
13	1957	6	10	288	0.00	173.05	0.00	59.81	173.05	100	73.05	76.62
14	1957	6	11	312	6.47	180.77	6.47	66.28	180.77	100	80.77	83.60
15	1957	6	12	336	7.37	166.19	7.37	73.65	166.19	100	66.19	89.32
16	1957	6	13	360	1.41	156.55		73.65	156.55	100	56.55	94.20
17	1957	6	14	384	1.64	157.73		73.65	157.73	100	57.73	99.19
18	1957	6	15	408	1.03	148.45		73.65	148.45	100	48.45	103.38
19	1957	6	16	432	1.11	137.40		73.65	137.40	100	37.40	106.61
20	1957	6	17	456	0.00	156.55		73.65	156.55	100	56.55	111.49
21	1957	6	18	480	0.61	125.43		73.65	125.43	100	25.43	113.69
22	1957	6	19	504	0.00	114.23		73.65	114.23	100	14.23	114.92
23	1957	6	20	528	0.00	116.13		73.65	116.13	100	16.13	116.32
24	1957	6	21	552	8.00	128.99		73.65			0.00	116.32
25	1957	6	22	576	12.27	109.59		73.65			0.00	116.32
26	1957	6	23	600	11.54	105.53		73.65			0.00	116.32
27	1957	6	24	624	11.84	107.32		73.65			0.00	116.32
28	1957	6	25	648	6.43	130.02		73.65			0.00	116.32
29	1957	6	26	672	3.54	121.95		73.65			0.00	116.32
30	1957	6	27	696	2.73	118.53		73.65			0.00	116.32
31	1957	6	28	720	3.30	109.59		73.65			0.00	116.32
32	1957	6	29	744	0.00	109.59		73.65			0.00	116.32
33	1957	6	30	768	0.00	106.87		73.65			0.00	116.32
34	1957	7	1	792	0.14	100.71		73.65			0.00	116.32
35	1957	7	2	816	2.76	95.64		73.65			0.00	116.32
36	1957	7	3	840	0.94	95.64		73.65			0.00	116.32
37	1957	7	4	864	1.44	89.16		73.65			0.00	116.32
38	1957	7	5	888	2.47	84.13		73.65			0.00	116.32
39	1957	7	6	912	4.27	80.41		73.65			0.00	116.32
40	1957	7	7	936	11.47	78.95		73.65			0.00	116.32
41	1957	7	8	960	4.00	84.13		73.65			0.00	116.32
42	1957	7	9	984	0.00	74.00		73.65			0.00	116.32
43	1957	7	10	1008	0.00	70.60		73.65			0.00	116.32
44	1957	7	11	1032		69.27		73.65			0.00	116.32
45	1957	7	12	1056		67.31		73.65			0.00	116.32
46	1957	7	13	1080		64.76		73.65			0.00	116.32
47	1957	7	14	1104		63.51		73.65			0.00	116.32
48	1957	7	15	1128		65.08		73.65			0.00	116.32
49	1957	7	16	1152		60.17		73.65			0.00	116.32
50	1957	7	17	1176		56.66		73.65			0.00	116.32
								73.65	230.77			116.32

Basin Catchment Area= 3260 (km2)
Rainfall Duration from the Beginning to the Centroid (Tp)= 124.614 (hr)
Runoff Duration from the Beginning to the Centroid(Tr)= 224.515 (hr)
Duration of Rainfall(D)= 288 (hr)
Basin Time Lag(Lg)= 99.9006 (hr)
Accum. Rainfall Depth= 73.65 (mm)
Accum.Runoff Depth= 35.6795 (mm)
Runoff Coefficient= 48.44%

表6.4　１ＪＧ１で観測された1962年洪水

Count	Year	Month	Date	Accum. Time	Basin Rain (mm)	Runoff at 1JG1 (m3/s)	Basin Rain (mm)	Accum. Rain (mm)	Runoff at 1JG1 (m3/s)	Base Flow (m3/s)	Direct Runoff (m3/s)	Accum. Volume (mil.m3)
1	1962	5	1	0	5.77	77.15	5.77	5.77	77.15	77.15	0.00	0.00
2	1962	5	2	24	10.17	67.96	10.17	15.94	67.96	67.96	0.00	0.00
3	1962	5	3	48	9.11	97.31	9.11	25.05	97.31	70.00	27.31	2.36
4	1962	5	4	72	13.49	98.15	13.49	38.54	98.15	70.00	28.15	4.79
5	1962	5	5	96	12.60	136.33	12.60	51.14	136.33	70.00	66.33	10.52
6	1962	5	6	120	15.73	171.79	15.73	66.87	171.79	70.00	101.79	19.32
7	1962	5	7	144	15.24	219.32	15.24	82.11	219.32	70.00	149.32	32.22
8	1962	5	8	168	23.41	184.06	23.41	105.52	184.06	70.00	114.06	42.07
9	1962	5	9	192	4.07	291.75	4.07	109.59	291.75	70.00	221.75	61.23
10	1962	5	10	216	1.23	325.19	1.23	110.82	325.19	70.00	255.19	83.28
11	1962	5	11	240	5.34	264.24	5.34	116.16	264.24	70.00	194.24	100.06
12	1962	5	12	264	12.49	261.68	12.49	128.65	261.68	70.00	191.68	116.62
13	1962	5	13	288	1.37	279.98	1.37	130.02	279.98	70.00	209.98	134.77
14	1962	5	14	312	10.80	265.10	10.80	140.82	265.10	70.00	195.10	151.62
15	1962	5	15	336	2.03	233.89	2.03	142.85	233.89	70.00	163.89	165.78
16	1962	5	16	360	13.63	220.07	13.63	156.48	220.07	70.00	150.07	178.75
17	1962	5	17	384	5.70	209.00	5.70	162.18	209.00	70.00	139.00	190.76
18	1962	5	18	408	5.26	199.03	5.26	167.44	199.03	70.00	129.03	201.91
19	1962	5	19	432	0.19	190.08	0.19	167.63	190.08	70.00	120.08	212.28
20	1962	5	20	456	2.90	179.47	2.90	170.53	179.47	70.00	109.47	221.74
21	1962	5	21	480	3.91	175.60	3.91	174.44	175.60	70.00	105.60	230.86
22	1962	5	22	504	1.13	163.74	1.13	175.57	163.74	70.00	93.74	238.96
23	1962	5	23	528	1.81	154.20	1.81	177.38	154.20	70.00	84.20	246.24
24	1962	5	24	552	1.76	149.59	1.76	179.14	149.59	70.00	79.59	253.11
25	1962	5	25	576	12.07	150.16		179.14			0.00	253.11
26	1962	5	26	600	19.14	163.13		179.14			0.00	253.11
27	1962	5	27	624	5.94	162.52		179.14			0.00	253.11
28	1962	5	28	648	4.20	162.52		179.14			0.00	253.11
29	1962	5	29	672	0.04	137.94		179.14			0.00	253.11
30	1962	5	30	696	0.04	129.51		179.14			0.00	253.11
31	1962	5	31	720	0.00	139.02		179.14			0.00	253.11
32	1962	6	1	744	1.74	137.94		179.14			0.00	253.11
33	1962	6	2	768	4.84	127.97		179.14			0.00	253.11
34	1962	6	3	792	2.87	123.93		179.14			0.00	253.11
35	1962	6	4	816	7.77	123.93		179.14			0.00	253.11
36	1962	6	5	840	11.64	148.45		179.14			0.00	253.11
37	1962	6	6	864	2.78	143.40		179.14			0.00	253.11
38	1962	6	7	888	1.30	128.99		179.14			0.00	253.11
39	1962	6	8	912	1.41	118.04		179.14			0.00	253.11
40	1962	6	9	936	0.00	125.43		179.14			0.00	253.11
41	1962	6	10	960	0.47	114.70		179.14			0.00	253.11
42	1962	6	11	984	6.03	106.87		179.14			0.00	253.11
43	1962	6	12	1008	0.47	127.46		179.14			0.00	253.11
44	1962	6	13	1032	11.30	100.28		179.14			0.00	253.11
45	1962	6	14	1056	1.01	98.15		179.14			0.00	253.11
46	1962	6	15	1080	9.73	95.64		179.14			0.00	253.11
47	1962	6	16	1104	6.36	96.47		179.14			0.00	253.11
48	1962	6	17	1128	7.47	129.51		179.14			0.00	253.11
49	1962	6	18	1152	7.66	99.00		179.14			0.00	253.11
50	1962	6	19	1176	0.94	99.43		179.14			0.00	253.11
						325.19		179.14				253.11

Basin Catchment Area= 3260 (km2)
Rainfall Duration from the Beginning to the Centroid (Tp)= 151.648 (hr)
Runoff Duration from the Beginning to the Centroid(Tr)= 277.14 (hr)
Duration of Rainfall(D)= 216 (hr)
Basin Time Lag(Lg)= 125.492 (hr)
Accum. Rainfall Depth= 179.14 (mm)
Accum.Runoff Depth= 77.6426 (mm)
Runoff Coefficient= 43.34%

表6.5　1JG1で観測された1964年洪水

Count	Year	Month	Date	Accum. Time	Basin Rain (mm)	Runoff at 1JG1 (m3/s)	Basin Rain (mm)	Accum. Rain (mm)	Runoff at 1JG1 (m3/s)	Base Flow (m3/s)	Direct Runoff (m3/s)	Accum. Volume (mil.m3)
1	1964	4	10	0	6.05	48.80		0.00			0.00	0.00
2	1964	4	11	24	2.68	50.10		0.00			0.00	0.00
3	1964	4	12	48	4.01	53.86		0.00			0.00	0.00
4	1964	4	13	72	8.18	54.69		0.00			0.00	0.00
5	1964	4	14	96	7.85	52.76		0.00			0.00	0.00
6	1964	4	15	120	2.05	55.53		0.00			0.00	0.00
7	1964	4	16	144	16.76	53.03	16.76	16.76	53.03	50.00	3.03	0.26
8	1964	4	17	168	47.06	58.40	47.06	63.82	58.40	50.00	8.40	0.99
9	1964	4	18	192	28.01	181.10	28.01	91.83	181.10	50.00	131.10	12.31
10	1964	4	19	216	19.24	338.28	19.24	111.07	338.28	50.00	288.28	37.22
11	1964	4	20	240	16.05	366.66	16.05	127.12	366.66	50.00	316.66	64.58
12	1964	4	21	264	9.38	409.41	9.38	136.50	409.41	50.00	359.41	95.63
13	1964	4	22	288	29.64	400.71	29.64	166.14	400.71	50.00	350.71	125.94
14	1964	4	23	312	34.39	422.43	34.39	200.53	422.43	50.00	372.43	158.11
15	1964	4	24	336	13.44	522.60	13.44	213.97	522.60	50.00	472.60	198.95
16	1964	4	25	360	13.23	480.05	13.23	227.20	480.05	50.00	430.05	236.10
17	1964	4	26	384	0.66	444.35		227.20	444.35	50.00	394.35	270.17
18	1964	4	27	408	2.83	473.28		227.20	473.28	55.00	418.28	306.31
19	1964	4	28	432	3.14	330.18		227.20	330.18	60.00	270.18	329.66
20	1964	4	29	456	0.00	306.72		227.20	306.72	65.00	241.72	350.54
21	1964	4	30	480	0.19	252.04		227.20	252.04	70.00	182.04	366.27
22	1964	5	1	504	0.83	237.84		227.20	237.84	75.00	162.84	380.34
23	1964	5	2	528	0.00	209.00		227.20	209.00	80.00	129.00	391.49
24	1964	5	3	552	4.23	188.73		227.20	188.73	85.00	103.73	400.45
25	1964	5	4	576	1.18	174.32		227.20	174.32	90.00	84.32	407.73
26	1964	5	5	600	2.11	151.31		227.20	151.31	95.00	56.31	412.60
27	1964	5	6	624	12.58	137.40		227.20	137.40	100.00	37.40	415.83
28	1964	5	7	648	5.46	135.80		227.20			0.00	415.83
29	1964	5	8	672	5.10	128.48		227.20			0.00	415.83
30	1964	5	9	696	5.00	119.50		227.20			0.00	415.83
31	1964	5	10	720	7.03	116.60		227.20			0.00	415.83
32	1964	5	11	744	2.55	107.32		227.20			0.00	415.83
33	1964	5	12	768	1.98	102.88		227.20			0.00	415.83
34	1964	5	13	792	0.78	96.89		227.20			0.00	415.83
35	1964	5	14	816	6.04	108.22		227.20			0.00	415.83
36	1964	5	15	840	1.78	105.53		227.20			0.00	415.83
37	1964	5	16	864	0.15	102.01		227.20			0.00	415.83
38	1964	5	17	888	3.24	96.06		227.20			0.00	415.83
39	1964	5	18	912	10.81	90.35		227.20			0.00	415.83
40	1964	5	19	936	8.85	87.20		227.20			0.00	415.83
41	1964	5	20	960	1.68	87.98		227.20			0.00	415.83
42	1964	5	21	984	0.88	93.17		227.20			0.00	415.83
43	1964	5	22	1008	1.08	84.51		227.20			0.00	415.83
44	1964	5	23	1032	3.58	78.23		227.20			0.00	415.83
45	1964	5	24	1056	1.29	74.69		227.20			0.00	415.83
46	1964	5	25	1080	1.81	71.61		227.20			0.00	415.83
47	1964	5	26	1104	1.95	68.94		227.20			0.00	415.83
48	1964	5	27	1128	1.01	66.35		227.20			0.00	415.83
49	1964	5	28	1152	5.03	62.90		227.20			0.00	415.83
50	1964	5	29	1176	6.05	61.98		227.20			0.00	415.83
								227.20				415.83

Basin Catchment Area= 3260 (km2)
Rainfall Duration from the Beginning to the Centroid(Tp)= 219.783 (hr)
Runoff Duration from the Beginning to the Centroid(Tr)= 341.793 (hr)
Rainfall Period(D)= 240 (hr)
Basin Time Lag(Lg)= 122.01 (hr)
Accum. Rainfall Depth= 227.2 (mm)
Accum.Runoff Depth= 127.555 (mm)
Runoff Coefficient= 56.14%

表6.6　1JG1で観測された1968年洪水

Count	Year	Month	Date	Accum. Time	Basin Rain (mm)	Runoff at 1JG1 (m3/s)	Basin Rain (mm)	Accum. Rain (mm)	Runoff at 1JG1 (m3/s)	Base Flow (m3/s)	Direct Runoff (m3/s)	Accum. Volume (mil.m3)
1	1968	4	20	0	8.01	92.77	8.01	8.01	92.77	90.00	2.77	0.24
2	1968	4	21	24	7.26	95.23	7.26	15.27	95.23	90.00	5.23	0.69
3	1968	4	22	48	17.57	104.20	17.57	32.84	104.20	90.00	14.20	1.92
4	1968	4	23	72	23.71	186.39	23.71	56.55	186.39	90.00	96.39	10.25
5	1968	4	24	96	18.22	241.04	18.22	74.77	241.04	90.00	151.04	23.30
6	1968	4	25	120	20.36	253.28	20.36	95.13	253.28	90.00	163.28	37.40
7	1968	4	26	144	18.01	252.45	18.01	113.14	252.45	90.00	162.45	51.44
8	1968	4	27	168	19.31	246.70	19.31	132.45	246.70	90.00	156.70	64.98
9	1968	4	28	192	13.53	241.04	13.53	145.98	241.04	90.00	151.04	78.03
10	1968	4	29	216	23.78	258.30	23.78	169.76	258.30	90.00	168.30	92.57
11	1968	4	30	240	7.97	268.28	7.97	177.73	268.28	90.00	178.28	107.97
12	1968	5	1	264	1.66	346.00		177.73	346.00	90.00	256.00	130.09
13	1968	5	2	288	5.01	306.72		177.73	306.72	95.00	211.72	148.38
14	1968	5	3	312	8.14	284.47		177.73	284.47	100.00	184.47	164.32
15	1968	5	4	336	7.71	262.54		177.73	262.54	105.00	157.54	177.93
16	1968	5	5	360	2.64	243.45		177.73	243.45	110.00	133.45	189.46
17	1968	5	6	384	4.33	230.77		177.73	230.77	115.00	115.77	199.47
18	1968	5	7	408	3.30	209.72		177.73	209.72	120.00	89.72	207.22
19	1968	5	8	432	3.25	199.73		177.73	199.73	125.00	74.73	213.67
20	1968	5	9	456	8.28	184.06		177.73	184.06	130.00	54.06	218.34
21	1968	5	10	480	2.83	169.91		177.73	169.91	135.00	34.91	221.36
22	1968	5	11	504	3.78	163.74		177.73	163.74	140.00	23.74	223.41
23	1968	5	12	528	6.98	155.37		177.73	155.37	145.00	10.37	224.31
24	1968	5	13	552	3.98	155.37		177.73	155.37	150.00	5.37	224.77
25	1968	5	14	576	3.83	144.51		177.73			0.00	224.77
26	1968	5	15	600	13.08	137.40		177.73			0.00	224.77
27	1968	5	16	624	10.88	136.86		177.73			0.00	224.77
28	1968	5	17	648	0.59	133.15		177.73			0.00	224.77
29	1968	5	18	672	2.58	128.48		177.73			0.00	224.77
30	1968	5	19	696	2.63	130.54		177.73			0.00	224.77
31	1968	5	20	720	9.10	127.97		177.73			0.00	224.77
32	1968	5	21	744	3.50	126.44		177.73			0.00	224.77
33	1968	5	22	768	3.20	121.95		177.73			0.00	224.77
34	1968	5	23	792	4.04	103.32		177.73			0.00	224.77
35	1968	5	24	816	4.99	103.32		177.73			0.00	224.77
36	1968	5	25	840	1.98	103.32		177.73			0.00	224.77
37	1968	5	26	864	3.49	103.98		177.73			0.00	224.77
38	1968	5	27	888	2.93	101.07		177.73			0.00	224.77
39	1968	5	28	912	2.91	98.25		177.73			0.00	224.77
40	1968	5	29	936	1.65	95.50		177.73			0.00	224.77
41	1968	5	30	960	3.08	92.83		177.73			0.00	224.77
42	1968	5	31	984	2.46	89.95		177.73			0.00	224.77
43	1968	6	1	1008	3.98	88.38		177.73			0.00	224.77
44	1968	6	2	1032	5.36	83.76		177.73			0.00	224.77
45	1968	6	3	1056	11.11	80.77		177.73			0.00	224.77
46	1968	6	4	1080	2.80	76.98		177.73			0.00	224.77
47	1968	6	5	1104	1.00	78.95		177.73			0.00	224.77
48	1968	6	6	1128	1.79	78.23		177.73			0.00	224.77
49	1968	6	7	1152	4.86	76.80		177.73			0.00	224.77
50	1968	6	8	1176	4.68	77.51		177.73			0.00	224.77
								177.73				224.77

Basin Catchment Area= 3260 (km2)
Rainfall Duration from the Beginning to the Centroid (Tp)= 112.615 (hr)
Runoff Duration from the Beginning to the Centroid(Tr)= 244.789 (hr)
Duration of Rainfall(D)= 264 (hr)
Basin Time Lag(Lg)= 132.174 (hr)
Accum. Rainfall Depth= 177.73 (mm)
Accum.Runoff Depth= 68.9485 (mm)
Runoff Coefficient= 38.79%

表6.7　１ＪＧ１で観測された1977年洪水

Count	Year	Month	Date	Accum. Time	Basin Rain (mm)	Runoff at 1JG1 (m3/s)	Basin Rain (mm)	Accum. Rain (mm)	Runoff at 1JG1 (m3/s)	Base Flow (m3/s)	Direct Runoff (m3/s)	Accum. Volume (mil.m3)
1	1977	4	15	0	7.10	89.56	7.10	7.10	89.56	80.00	9.56	0.83
2	1977	4	16	24	2.84	96.47	2.84	9.94	96.47	80.00	16.47	2.25
3	1977	4	17	48	3.78	97.73	3.78	13.72	97.73	80.00	17.73	3.78
4	1977	4	18	72	4.01	100.28	4.01	17.73	100.28	80.00	20.28	5.53
5	1977	4	19	96	1.51	95.23	1.51	19.24	95.23	80.00	15.23	6.85
6	1977	4	20	120	0.70	124.43	0.70	19.94	124.43	80.00	44.43	10.69
7	1977	4	21	144	0.19	125.94	0.19	20.13	125.94	80.00	45.94	14.66
8	1977	4	22	168	1.80	148.45	1.80	21.93	148.45	80.00	68.45	20.57
9	1977	4	23	192	3.51	168.66	3.51	25.44	168.66	80.00	88.66	28.23
10	1977	4	24	216	8.68	169.91	8.68	34.12	169.91	80.00	89.91	36.00
11	1977	4	25	240	7.53	178.17	7.53	41.65	178.17	80.00	98.17	44.48
12	1977	4	26	264	10.89	145.63	10.89	52.54	145.63	80.00	65.63	50.15
13	1977	4	27	288	13.80	140.65	13.80	66.34	140.65	80.00	60.65	55.39
14	1977	4	28	312	8.51	118.32	8.51	74.85	118.32	80.00	38.32	58.70
15	1977	4	29	336	9.29	135.75	9.29	84.14	135.75	80.00	55.75	63.52
16	1977	4	30	360	6.80	130.02	6.80	90.94	130.02	80.00	50.02	67.84
17	1977	5	1	384	16.16	139.02	16.16	107.10	139.02	80.00	59.02	72.94
18	1977	5	2	408	20.27	153.04	20.27	127.37	153.04	80.00	73.04	79.25
19	1977	5	3	432	9.29	208.28	9.29	136.66	208.28	80.00	128.28	90.33
20	1977	5	4	456	8.30	253.28	8.30	144.96	253.28	80.00	173.28	105.31
21	1977	5	5	480	10.99	217.82	10.99	155.95	217.82	80.00	137.82	117.21
22	1977	5	6	504	14.57	190.76	14.57	170.52	190.76	80.00	110.76	126.78
23	1977	5	7	528	24.44	197.64	24.44	194.96	197.64	80.00	117.64	136.95
24	1977	5	8	552	9.44	216.38	9.44	204.40	216.38	80.00	136.38	148.73
25	1977	5	9	576	6.78	247.51	6.78	211.18	247.51	80.00	167.51	163.20
26	1977	5	10	600	3.44	239.44	3.44	214.62	239.44	80.00	159.44	176.98
27	1977	5	11	624	2.16	235.47	2.16	216.78	235.47	80.00	155.47	190.41
28	1977	5	12	648	4.48	222.33	4.48	221.26	222.33	80.00	142.33	202.71
29	1977	5	13	672	9.30	223.09	9.30	230.56	223.09	80.00	143.09	215.07
30	1977	5	14	696	4.72	214.85	4.72	235.28	214.85	80.00	134.85	226.72
31	1977	5	15	720	2.47	192.12	2.47	237.75	192.12	80.00	112.12	236.41
32	1977	5	16	744	0.76	168.04	0.76	238.51	168.04	80.00	88.04	244.02
33	1977	5	17	768	4.30	154.79	4.30	242.81	154.79	80.00	74.79	250.48
34	1977	5	18	792	5.13	145.07	5.13	247.94	145.07	80.00	65.07	256.19
35	1977	5	19	816	0.15	139.56		247.94	139.56	80.00	59.56	261.25
36	1977	5	20	840	0.18	132.63		247.94	132.63	80.00	52.63	265.79
37	1977	5	21	864	3.59	119.50		247.94	119.50	80.00	39.50	269.21
38	1977	5	22	888	4.88	112.36		247.94	112.36	80.00	32.36	272.00
39	1977	5	23	912	10.49	112.82		247.94	112.82	80.00	32.82	274.84
40	1977	5	24	936	5.84	106.87		247.94	106.87	80.00	26.87	277.16
41	1977	5	25	960	6.97	104.20		247.94	104.20	80.00	24.20	279.25
42	1977	5	26	984	5.95	101.58		247.94	101.58	80.00	21.58	281.12
43	1977	5	27	1008	6.02	103.76		247.94			0.00	281.12
44	1977	5	28	1032	0.97	104.64		247.94			0.00	281.12
45	1977	5	29	1056	0.63	109.59		247.94			0.00	281.12
46	1977	5	30	1080	3.15	110.51		247.94			0.00	281.12
47	1977	5	31	1104	3.60	105.53		247.94			0.00	281.12
48	1977	6	1	1128	0.52	100.28		247.94			0.00	281.12
49	1977	6	2	1152	1.75	92.36		247.94			0.00	281.12
50	1977	6	3	1176	0.00	87.59		247.94			0.00	281.12
						253.28		247.94				281.12

Basin Catchment Area= 3260 (km2)
Rainfall Duration from the Beginning to the Centroid (Tp)= 403.974 (hr)
Runoff Duration from the Beginning to the Centroid(Tr)= 535.353 (hr)
Duration of Rainfall(D)= 816 (hr)
Basin Time Lag(Lg)= 131.379 (hr)
Accum. Rainfall Depth= 247.94 (mm)
Accum.Runoff Depth= 86.2317 (mm)
Runoff Coefficient= 34.78%

表6.8　1JG1で観測された1978年洪水

Count	Year	Month	Date	Accum. Time	Basin Rain (mm)	Runoff at 1JG1 (m3/s)	Basin Rain (mm)	Accum. Rain (mm)	Runoff at 1JG1 (m3/s)	Base Flow (m3/s)	Direct Runoff (m3/s)	Accum. Volume (mil.m3)
1	1978	3	10	0	16.97	102.45		0.00			0.00	0.00
2	1978	3	11	24	11.10	145.07		0.00			0.00	0.00
3	1978	3	12	48	13.88	127.97		0.00			0.00	0.00
4	1978	3	13	72	10.19	139.02		0.00			0.00	0.00
5	1978	3	14	96	9.97	137.40		0.00			0.00	0.00
6	1978	3	15	120	4.37	142.85		0.00			0.00	0.00
7	1978	3	16	144	4.02	151.88		0.00			0.00	0.00
8	1978	3	17	168	13.81	151.88		0.00			0.00	0.00
9	1978	3	18	192	6.80	164.35		0.00			0.00	0.00
10	1978	3	19	216	6.79	169.28		0.00			0.00	0.00
11	1978	3	20	240	6.59	200.43		0.00			0.00	0.00
12	1978	3	21	264	3.38	226.14		0.00			0.00	0.00
13	1978	3	22	288	7.84	185.39		0.00			0.00	0.00
14	1978	3	23	312	21.56	176.24	21.56	21.56	176.24	170.00	6.24	0.54
15	1978	3	24	336	13.97	266.82	13.97	35.53	266.82	170.00	96.82	8.90
16	1978	3	25	360	11.30	412.93	11.30	46.83	412.93	170.00	242.93	29.89
17	1978	3	26	384	6.53	331.19	6.53	53.36	331.19	170.00	161.19	43.82
18	1978	3	27	408	2.43	307.67	2.43	55.79	307.67	170.00	137.67	55.72
19	1978	3	28	432	5.38	289.00		55.79	289.00	170.00	119.00	66.00
20	1978	3	29	456	5.01	268.55		55.79	268.55	170.00	98.55	74.51
21	1978	3	30	480	11.04	241.84		55.79	241.84	170.00	71.84	80.72
22	1978	3	31	504	5.21	236.26		55.79	236.26	190.00	46.26	84.72
23	1978	4	1	528	13.49	231.55		55.79	231.55	200.00	31.55	87.44
24	1978	4	2	552	8.81	239.44		55.79			0.00	87.44
25	1978	4	3	576	5.11	249.15		55.79			0.00	87.44
26	1978	4	4	600	8.42	226.14		55.79			0.00	87.44
27	1978	4	5	624	8.73	231.55		55.79			0.00	87.44
28	1978	4	6	648	6.06	216.33		55.79			0.00	87.44
29	1978	4	7	672	10.42	201.14		55.79			0.00	87.44
30	1978	4	8	696	15.36	186.72		55.79			0.00	87.44
31	1978	4	9	720	16.56	199.73		55.79			0.00	87.44
32	1978	4	10	744	14.42	257.46		55.79			0.00	87.44
33	1978	4	11	768	5.09	280.87		55.79			0.00	87.44
34	1978	4	12	792	2.96	275.54		55.79			0.00	87.44
35	1978	4	13	816	4.44	248.33		55.79			0.00	87.44
36	1978	4	14	840	4.67	241.84		55.79			0.00	87.44
37	1978	4	15	864	3.52	247.51		55.79			0.00	87.44
38	1978	4	16	888	5.18	241.04		55.79			0.00	87.44
39	1978	4	17	912	2.24	233.89		55.79			0.00	87.44
40	1978	4	18	936	4.29	221.57		55.79			0.00	87.44
41	1978	4	19	960	3.06	194.18		55.79			0.00	87.44
42	1978	4	20	984	2.04	123.43		55.79			0.00	87.44
43	1978	4	21	1008	4.50	168.66		55.79			0.00	87.44
44	1978	4	22	1032	4.31	157.14		55.79			0.00	87.44
45	1978	4	23	1056	3.73	143.96		55.79			0.00	87.44
46	1978	4	24	1080	3.39	133.15		55.79			0.00	87.44
47	1978	4	25	1104	5.19	127.46		55.79			0.00	87.44
48	1978	4	26	1128	5.67	119.98		55.79			0.00	87.44
49	1978	4	27	1152	12.44	122.44		55.79			0.00	87.44
50	1978	4	28	1176		127.46		55.79			0.00	87.44
								55.79	412.93			87.44

Basin Catchment Area= 3260 (km2)
Rainfall Duration from the Beginning to the Centroid (Tp)= 322.883 (hr)
Runoff Duration from the Beginning to the Centroid(Tr)= 383.828 (hr)
Duration of Rainfall(D)= 120 (hr)
Basin Time Lag(Lg)= 60.9447 (hr)
Accum. Rainfall Depth= 55.79 (mm)
Accum.Runoff Depth= 26.8224 (mm)
Runoff Coefficient= 48.08%

表6.9　1JG1で観測された1981年洪水

Count	Year	Month	Date	Accum. Time	Basin Rain (mm)	Runoff at 1JG1 (m3/s)	Basin Rain (mm)	Accum. Rain (mm)	Runoff at 1JG1 (m3/s)	Base Flow (m3/s)	Direct Runoff (m3/s)	Accum. Volume (mil.m3)
1	1981	4	6	0	21.74	76.09	21.74	21.74	76.09	50.00	26.09	2.25
2	1981	4	7	24	2.89	119.50	2.89	24.63	119.50	50.00	69.50	8.26
3	1981	4	8	48	3.21	168.66	3.21	27.84	168.66	50.00	118.66	18.51
4	1981	4	9	72	11.89	182.08	11.89	39.73	182.08	50.00	132.08	29.92
5	1981	4	10	96	13.43	136.86	13.43	53.16	136.86	50.00	86.86	37.43
6	1981	4	11	120	25.71	141.20	25.71	78.87	141.20	50.00	91.20	45.31
7	1981	4	12	144	32.19	145.63	32.19	111.06	145.63	50.00	95.63	53.57
8	1981	4	13	168	11.70	186.05	11.70	122.76	186.05	50.00	136.05	65.32
9	1981	4	14	192	9.65	271.16	9.65	132.41	271.16	50.00	221.16	84.43
10	1981	4	15	216	23.81	233.11	23.81	156.22	233.11	50.00	183.11	100.25
11	1981	4	16	240	9.30	217.82	9.30	165.52	217.82	50.00	167.82	114.75
12	1981	4	17	264	6.30	223.85	6.30	171.82	223.85	50.00	173.85	129.77
13	1981	4	18	288	4.24	214.85	4.24	176.06	214.85	50.00	164.85	144.02
14	1981	4	19	312	4.39	206.12	4.39	180.45	206.12	50.00	156.12	157.51
15	1981	4	20	336	0.98	180.77		180.45	180.77	50.00	130.77	168.80
16	1981	4	21	360	0.68	165.57		180.45	165.57	50.00	115.57	178.79
17	1981	4	22	384	4.69	150.16		180.45	150.16	50.00	100.16	187.44
18	1981	4	23	408	4.45	140.65		180.45	140.65	50.00	90.65	195.28
19	1981	4	24	432	1.95	134.20		180.45			0.00	195.28
20	1981	4	25	456	3.31	128.99		180.45			0.00	195.28
21	1981	4	26	480	3.58	130.54		180.45			0.00	195.28
22	1981	4	27	504	5.43	127.46		180.45			0.00	195.28
23	1981	4	28	528	15.14	115.18		180.45			0.00	195.28
24	1981	4	29	552	4.59	106.42		180.45			0.00	195.28
25	1981	4	30	576	3.99	99.43		180.45			0.00	195.28
26	1981	5	1	600	3.48	87.98		180.45			0.00	195.28
27	1981	5	2	624	4.04	81.88		180.45			0.00	195.28
28	1981	5	3	648	9.57	75.74		180.45			0.00	195.28
29	1981	5	4	672	7.83	71.61		180.45			0.00	195.28
30	1981	5	5	696	1.83	68.94		180.45			0.00	195.28
31	1981	5	6	720	22.87	67.96		180.45			0.00	195.28
32	1981	5	7	744	18.87	72.28		180.45			0.00	195.28
33	1981	5	8	768	6.17	102.45		180.45			0.00	195.28
34	1981	5	9	792	12.83	120.96		180.45			0.00	195.28
35	1981	5	10	816	13.90	102.88		180.45			0.00	195.28
36	1981	5	11	840	4.77	111.89		180.45			0.00	195.28
37	1981	5	12	864	4.50	119.50		180.45			0.00	195.28
38	1981	5	13	888	6.53	110.05		180.45			0.00	195.28
39	1981	5	14	912	16.17	132.10		180.45			0.00	195.28
40	1981	5	15	936	1.43	151.31		180.45			0.00	195.28
41	1981	5	16	960	11.47	126.44		180.45			0.00	195.28
42	1981	5	17	984	8.47	136.33		180.45			0.00	195.28
43	1981	5	18	1008	8.03	128.48		180.45			0.00	195.28
44	1981	5	19	1032	9.73	112.82		180.45			0.00	195.28
45	1981	5	20	1056	1.03	106.87		180.45			0.00	195.28
46	1981	5	21	1080	0.03	99.85		180.45			0.00	195.28
47	1981	5	22	1104		91.96		180.45			0.00	195.28
48	1981	5	23	1128		84.89		180.45			0.00	195.28
49	1981	5	24	1152		78.95		180.45			0.00	195.28
50	1981	5	25	1176		76.09		180.45			0.00	195.28
						271.16		180.45				195.28

Basin Catchment Area= 3260 (km2)
Rainfall Duration from the Beginning to the Centroid (Tp)= 128.466 (hr)
Runoff Duration from the Beginning to the Centroid(Tr)= 212.032 (hr)
Duration of Rainfall(D)= 336 (hr)
Basin Time Lag(Lg)= 83.5659 (hr)
Accum. Rainfall Depth= 180.45 (mm)
Accum.Runoff Depth= 59.9004 (mm)
Runoff Coefficient= 33.20%

表6.10　1JG1で観測された1982年洪水

Count	Year	Month	Date	Accum. Time	Basin Rain (mm)	Runoff at 1JG1 (m3/s)	Basin Rain (mm)	Accum. Rain (mm)	Runoff at 1JG1 (m3/s)	Base Flow (m3/s)	Direct Runoff (m3/s)	Accum. Volume (mil.m3)
1	1982	11	5	0	12.45	81.14		0.00			0.00	0.00
2	1982	11	6	24	13.31	89.56		0.00			0.00	0.00
3	1982	11	7	48	6.23	114.70		0.00			0.00	0.00
4	1982	11	8	72	6.11	114.70		0.00			0.00	0.00
5	1982	11	9	96	8.90	121.95		0.00			0.00	0.00
6	1982	11	10	120	7.61	127.97		0.00			0.00	0.00
7	1982	11	11	144	6.44	134.20		0.00			0.00	0.00
8	1982	11	12	168	4.00	145.07		0.00			0.00	0.00
9	1982	11	13	192	7.35	143.40		0.00			0.00	0.00
10	1982	11	14	216	12.50	141.75		0.00			0.00	0.00
11	1982	11	15	240	3.50	172.42		0.00			0.00	0.00
12	1982	11	16	264	4.75	163.74		0.00			0.00	0.00
13	1982	11	17	288	13.75	158.32		0.00			0.00	0.00
14	1982	11	18	312	0.01	153.04		0.00			0.00	0.00
15	1982	11	19	336	0.26	140.65		0.00			0.00	0.00
16	1982	11	20	360	1.38	127.46		0.00			0.00	0.00
17	1982	11	21	384	4.25	116.13	4.25	4.25	116.13	90.00	26.13	2.26
18	1982	11	22	408	6.14	108.68	6.14	10.39	108.68	90.00	18.68	3.87
19	1982	11	23	432	16.99	101.58	16.99	27.38	101.58	90.00	11.58	4.87
20	1982	11	24	456	14.03	97.31	14.03	41.41	97.31	90.00	7.31	5.50
21	1982	11	25	480	9.53	114.70	9.53	50.94	114.70	90.00	24.70	7.64
22	1982	11	26	504	12.21	100.71	12.21	63.15	100.71	90.00	10.71	8.56
23	1982	11	27	528	27.09	102.01	27.09	90.24	102.01	90.00	12.01	9.60
24	1982	11	28	552	14.33	145.35	14.33	104.57	145.35	90.00	55.35	14.38
25	1982	11	29	576	16.94	192.81	16.94	121.51	192.81	90.00	102.81	23.27
26	1982	11	30	600	5.43	188.06	5.43	126.94	188.06	90.00	98.06	31.74
27	1982	12	1	624	22.23	215.59	22.23	149.17	215.59	90.00	125.59	42.59
28	1982	12	2	648	24.14	257.46	24.14	173.31	257.46	90.00	167.46	57.06
29	1982	12	3	672	13.33	327.18	13.33	186.64	327.18	90.00	237.18	77.55
30	1982	12	4	696	13.93	332.70	13.93	200.57	332.70	90.00	242.70	98.52
31	1982	12	5	720	0.65	327.68		200.57	327.68	90.00	237.68	119.05
32	1982	12	6	744	4.84	299.64		200.57	299.64	90.00	209.64	137.17
33	1982	12	7	768	10.96	286.27		200.57	286.27	90.00	196.27	154.13
34	1982	12	8	792	2.93	277.31		200.57	277.31	90.00	187.31	170.31
35	1982	12	9	816	0.00	243.45		200.57	243.45	90.00	153.45	183.57
36	1982	12	10	840	3.69	219.32		200.57	219.32	90.00	129.32	194.74
37	1982	12	11	864	1.89	199.73		200.57	199.73	90.00	109.73	204.22
38	1982	12	12	888	9.78	195.55		200.57	195.55	90.00	105.55	213.34
39	1982	12	13	912	5.98	179.47		200.57	179.47	90.00	89.47	221.07
40	1982	12	14	936	5.90	162.52		200.57	162.52	90.00	72.52	227.34
41	1982	12	15	960	8.43	150.73		200.57	150.73	90.00	60.73	232.58
42	1982	12	16	984	0.39	142.30		200.57	142.30	90.00	52.30	237.10
43	1982	12	17	1008	7.03	133.15		200.57			0.00	237.10
44	1982	12	18	1032	4.79	122.94		200.57			0.00	237.10
45	1982	12	19	1056	1.10	113.29		200.57			0.00	237.10
46	1982	12	20	1080	1.98	102.45		200.57			0.00	237.10
47	1982	12	21	1104		94.81		200.57			0.00	237.10
48	1982	12	22	1128		96.06		200.57			0.00	237.10
49	1982	12	23	1152		93.58		200.57			0.00	237.10
50	1982	12	24	1176		81.51		200.57			0.00	237.10
						332.70		200.57				237.10

Basin Catchment Area= 3260 (km2)
Rainfall Duration from the Beginning to the Centroid (Tp)= 544.823 (hr)
Runoff Duration from the Beginning to the Centroid(Tr)= 719.411 (hr)
Duration of Rainfall(D)= 168 (hr)
Basin Time Lag(Lg)= 174.588 (hr)
Accum. Rainfall Depth= 200.57 (mm)
Accum.Runoff Depth= 72.7308 (mm)
Runoff Coefficient= 36.26%

表6.11　１ＪＧ１で観測された1990年洪水 (1/2)

Count	Year	Date	Time	Accum. Time	GH at 1JG1 (feet)	Runoff at 1JG1 (m3/s)	Basin Rain (mm)	9035001 Rain (mm)	9035013 Rain (mm)	9035075 Rain (mm)	9035079 Rain (mm)	9035233 Rain (mm)	Accum. Rain (mm)	Base Flow (m3/s)	Direct Flood (m3/s)	Accum. Volume (mil.m3)
1	1990	4/3	0:00	0	10.65	256	2.21	1.18	2.20	0.42	7.23	0.00	2.21			0.00
2	1990		4:00	4	10.25	224	2.21	1.18	2.20	0.42	7.23	0.00	4.41			0.00
3	1990		8:00	8	9.75	189	2.21	1.18	2.20	0.42	7.23	0.00	6.62			0.00
4	1990		12:00	12	9.75	189	2.21	1.18	2.20	0.42	7.23	0.00	8.83			0.00
5	1990		16:00	16	9.83	194	2.21	1.18	2.20	0.42	7.23	0.00	11.03			0.00
6	1990		20:00	20	9.80	192	2.21	1.18	2.20	0.42	7.23	0.00	13.24			0.00
7	1990	4/4	0:00	24	9.93	201	3.44	6.18	1.90	1.80	0.62	6.72	16.68			0.00
8	1990		4:00	28	9.90	199	3.44	6.18	1.90	1.80	0.62	6.72	20.13			0.00
9	1990		8:00	32	9.83	194	3.44	6.18	1.90	1.80	0.62	6.72	23.57			0.00
10	1990		12:00	36	9.90	199	3.44	6.18	1.90	1.80	0.62	6.72	27.01			0.00
11	1990		16:00	40	10.10	213	3.44	6.18	1.90	1.80	0.62	6.72	30.46	200.00	13.22	0.19
12	1990		20:00	44	10.15	217	3.44	6.18	1.90	1.80	0.62	6.72	33.90	200.00	16.91	0.43
13	1990	4/5	0:00	48	10.45	240	5.62	5.68	6.25	5.70	9.23	1.23	39.52	200.00	40.05	1.01
14	1990		4:00	52	10.63	255	5.62	5.68	6.25	5.70	9.23	1.23	45.14	200.00	54.75	1.80
15	1990		8:00	56	10.80	269	5.62	5.68	6.25	5.70	9.23	1.23	50.76	200.00	69.21	2.80
16	1990		12:00	60	10.93	281	5.62	5.68	6.25	5.70	9.23	1.23	56.38	200.00	80.66	3.96
17	1990		16:00	64	10.70	261	5.62	5.68	6.25	5.70	9.23	1.23	62.00	200.00	60.64	4.83
18	1990		20:00	68	10.58	251	5.62	5.68	6.25	5.70	9.23	1.23	67.62	200.00	50.61	5.56
19	1990	4/6	0:00	72	10.60	252	1.47	1.17	0.90	2.02	0.57	2.72	69.09	200.00	52.26	6.31
20	1990		4:00	76	11.60	345	1.47	1.17	0.90	2.02	0.57	2.72	70.57	200.00	145.22	8.40
21	1990		8:00	80	12.50	448	1.47	1.17	0.90	2.02	0.57	2.72	72.04	200.00	247.74	11.97
22	1990		12:00	84	13.50	585	1.47	1.17	0.90	2.02	0.57	2.72	73.51	200.00	385.25	17.52
23	1990		16:00	88	13.65	608	1.47	1.17	0.90	2.02	0.57	2.72	74.99	200.00	408.20	23.40
24	1990		20:00	92	13.65	608	1.47	1.17	0.90	2.02	0.57	2.72	76.46	200.00	408.20	29.27
25	1990	4/7	0:00	96	13.85	640	3.15	0.33	5.33	0.00	7.95	2.12	79.61	200.00	439.77	35.61
26	1990		4:00	100	13.40	570	3.15	0.33	5.33	0.00	7.95	2.12	82.75	200.00	370.30	40.94
27	1990		8:00	104	13.00	513	3.15	0.33	5.33	0.00	7.95	2.12	85.90	200.00	313.22	45.45
28	1990		12:00	108	12.75	480	3.15	0.33	5.33	0.00	7.95	2.12	89.05	200.00	279.69	49.48
29	1990		16:00	112	12.45	442	3.15	0.33	5.33	0.00	7.95	2.12	92.19	200.00	241.54	52.96
30	1990		20:00	116	12.25	417	3.15	0.33	5.33	0.00	7.95	2.12	95.34	200.00	217.35	56.08
31	1990	4/8	0:00	120	12.20	411	2.26	4.33	1.22	0.08	5.03	0.63	97.60	200.00	211.45	59.13
32	1990		4:00	124	12.25	417	2.26	4.33	1.22	0.08	5.03	0.63	99.86	200.00	217.35	62.26
33	1990		8:00	128	12.33	427	2.26	4.33	1.22	0.08	5.03	0.63	102.12	200.00	226.91	65.53
34	1990		12:00	132	12.55	454	2.26	4.33	1.22	0.08	5.03	0.63	104.38	200.00	254.01	69.18
35	1990		16:00	136	12.80	486	2.26	4.33	1.22	0.08	5.03	0.63	106.64	200.00	286.26	73.31
36	1990		20:00	140	12.98	510	2.26	4.33	1.22	0.08	5.03	0.63	108.90	200.00	310.48	77.78
37	1990	4/9	0:00	144	13.15	534	1.44	1.00	0.42	4.28	0.33	1.18	110.34	200.00	334.13	82.59
38	1990		4:00	148	13.40	570	1.44	1.00	0.42	4.28	0.33	1.18	111.79	200.00	370.30	87.92
39	1990		8:00	152	13.55	593	1.44	1.00	0.42	4.28	0.33	1.18	113.23	200.00	392.83	93.58
40	1990		12:00	156	13.40	570	1.44	1.00	0.42	4.28	0.33	1.18	114.67	200.00	370.30	98.91
41	1990		16:00	160	13.33	560	1.44	1.00	0.42	4.28	0.33	1.18	116.12	200.00	360.00	104.09
42	1990		20:00	164	12.90	500	1.44	1.00	0.42	4.28	0.33	1.18	117.56	200.00	299.61	108.41
43	1990	4/10	0:00	168	12.68	471	3.84	6.87	0.33	7.07	4.23	0.68	121.40	200.00	270.58	112.31
44	1990		4:00	172	12.55	454	3.84	6.87	0.33	7.07	4.23	0.68	125.23	200.00	254.01	115.96
45	1990		8:00	176	12.50	448	3.84	6.87	0.33	7.07	4.23	0.68	129.07	200.00	247.74	119.53
46	1990		12:00	180	12.60	460	3.84	6.87	0.33	7.07	4.23	0.68	132.91	200.00	260.33	123.28
47	1990		16:00	184	12.60	460	3.84	6.87	0.33	7.07	4.23	0.68	136.74	200.00	260.33	127.03
48	1990		20:00	188	12.60	460	3.84	6.87	0.33	7.07	4.23	0.68	140.58	200.00	260.33	130.78
49	1990	4/11	0:00	192	12.40	435	0.91	2.35	1.48	0.53	0.17	0.00	141.49	200.00	235.40	134.17
50	1990		4:00	196	12.65	467	0.91	2.35	1.48	0.53	0.17	0.00	142.39	200.00	266.72	138.01
51	1990		8:00	200	13.10	527	0.91	2.35	1.48	0.53	0.17	0.00	143.30	200.00	327.09	142.72
52	1990		12:00	204	13.35	563	0.91	2.35	1.48	0.53	0.17	0.00	144.21	200.00	362.93	147.94
53	1990		16:00	208	13.50	585	0.91	2.35	1.48	0.53	0.17	0.00	145.11	200.00	385.25	153.49
54	1990		20:00	212	13.60	600	0.91	2.35	1.48	0.53	0.17	0.00	146.02	200.00	400.48	159.26
55	1990	4/12	0:00	216	13.00	513	1.34	1.00	2.00	0.28	1.95	1.45	147.36	200.00	313.22	163.77
56	1990		4:00	220	12.60	460	1.34	1.00	2.00	0.28	1.95	1.45	148.69	200.00	260.33	167.52
57	1990		8:00	224	12.23	415	1.34	1.00	2.00	0.28	1.95	1.45	150.03	200.00	214.98	170.61
58	1990		12:00	228	12.15	406	1.34	1.00	2.00	0.28	1.95	1.45	151.37	200.00	205.61	173.57
59	1990		16:00	232	12.20	411	1.34	1.00	2.00	0.28	1.95	1.45	152.70	200.00	211.45	176.62
60	1990		20:00	236	12.40	435	1.34	1.00	2.00	0.28	1.95	1.45	154.04	200.00	235.40	180.01
61	1990	4/13	0:00	240	12.43	439	1.17	0.18	0.67	2.33	1.67	1.02	155.21	200.00	239.08	183.45
62	1990		4:00	244	12.50	448	1.17	0.18	0.67	2.33	1.67	1.02	156.39	200.00	247.74	187.02
63	1990		8:00	248	12.23	415	1.17	0.18	0.67	2.33	1.67	1.02	157.56	200.00	214.98	190.11
64	1990		12:00	252	12.10	400	1.17	0.18	0.67	2.33	1.67	1.02	158.73	200.00	199.83	192.99
65	1990		16:00	256	12.05	394	1.17	0.18	0.67	2.33	1.67	1.02	159.91	200.00	194.11	195.79
66	1990		20:00	260	11.95	383	1.17	0.18	0.67	2.33	1.67	1.02	161.08	200.00	182.84	198.42
67	1990	4/14	0:00	264	11.78	364.22	1.28	0.37	1.00	1.67	1.85	1.52	162.36	200.00	164.22	200.79
68	1990		4:00	268	11.70	355.69	1.28	0.37	1.00	1.67	1.85	1.52	163.64	200.00	155.69	203.03
69	1990		8:00	272	11.73	358.87	1.28	0.37	1.00	1.67	1.85	1.52	164.92	200.00	158.87	205.31

表6.11　1JG1で観測された1990年洪水 (2/2)

Count	Year	Date	Time	Accum. Time	GH. at 1JG1 (feet)	Runoff at 1JG1 (m3/s)	Basin Rain (mm)	9035001 Rain (mm)	9035013 Rain (mm)	9035075 Rain (mm)	9035079 Rain (mm)	9035233 Rain (mm)	Accum. Rain (mm)	Base Flow (m3/s)	Direct Flood (m3/s)	Accum. Volume (mil.m3)
70	1990		12:00	276	11.68	353.58	1.28	0.37	1.00	1.67	1.85	1.52	166.20	200.00	153.58	207.53
71	1990		16:00	280	11.53	338.02	1.28	0.37	1.00	1.67	1.85	1.52	167.48	200.00	138.02	209.51
72	1990		20:00	284	11.55	340.07	1.28	0.37	1.00	1.67	1.85	1.52	168.76	200.00	140.07	211.53
73	1990	4/15	0:00	288	11.55	340.07	1.50	2.42	4.00	1.07	0.00	0.00	170.26	200.00	140.07	213.55
74	1990		4:00	292	11.42	326.93	1.50	2.42	4.00	1.07	0.00	0.00	171.75	200.00	126.93	215.38
75	1990		8:00	296	11.37	321.98	1.50	2.42	4.00	1.07	0.00	0.00	173.25	200.00	121.98	217.13
76	1990		12:00	300	11.30	315.13	1.50	2.42	4.00	1.07	0.00	0.00	174.75	200.00	115.13	218.79
77	1990		16:00	304	11.25	310.31	1.50	2.42	4.00	1.07	0.00	0.00	176.24	200.00	110.31	220.38
78	1990		20:00	308	11.48	332.95	1.50	2.42	4.00	1.07	0.00	0.00	177.74	200.00	132.95	222.29
79	1990	4/16	0:00	312	11.43	327.93	1.96	1.48	0.67	1.62	3.05	2.97	179.70	200.00	127.93	224.14
80	1990		4:00	316	11.30	315.13	1.96	1.48	0.67	1.62	3.05	2.97	181.65	200.00	115.13	225.79
81	1990		8:00	320	11.23	308.39	1.96	1.48	0.67	1.62	3.05	2.97	183.61	200.00	108.39	227.35
82	1990		12:00	324	11.18	303.64	1.96	1.48	0.67	1.62	3.05	2.97	185.57	200.00	103.64	228.85
83	1990		16:00	328	11.15	300.81	1.96	1.48	0.67	1.62	3.05	2.97	187.52	200.00	100.81	230.30
84	1990		20:00	332	11.15	300.81	1.96	1.48	0.67	1.62	3.05	2.97	189.48	200.00	100.81	231.75
85	1990	4/17	0:00	336	11.65	350.43	1.31	2.50	0.00	0.00	4.05	0.00	190.79	200.00	150.43	233.92
86	1990		4:00	340	11.95	382.84	1.31	2.50	0.00	0.00	4.05	0.00	192.10	200.00	182.84	236.55
87	1990		8:00	344	11.95	382.84	1.31	2.50	0.00	0.00	4.05	0.00	193.41	200.00	182.84	239.18
88	1990		12:00	348	12.10	399.83	1.31	2.50	0.00	0.00	4.05	0.00	194.72	200.00	199.83	242.06
89	1990		16:00	352	11.85	371.81	1.31	2.50	0.00	0.00	4.05	0.00	196.03	200.00	171.81	244.53
90	1990		20:00	356	11.50	334.97	1.31	2.50	0.00	0.00	4.05	0.00	197.34	200.00	134.97	246.48
91	1990	4/18	0:00	360	11.25	310.31	1.86	8.75	0.00	0.00	0.57	0.00	199.20	200.00	110.31	248.07
92	1990		4:00	364	11.35	320.01	1.86	8.75	0.00	0.00	0.57	0.00	201.07	200.00	120.01	249.79
93	1990		8:00	368	11.43	327.93	1.86	8.75	0.00	0.00	0.57	0.00	202.93	200.00	127.93	251.64
94	1990		12:00	372	11.20	305.53	1.86	8.75	0.00	0.00	0.57	0.00	204.79	200.00	105.53	253.16
95	1990		16:00	376	11.00	286.96	1.86	8.75	0.00	0.00	0.57	0.00	206.66	200.00	86.96	254.41
96	1990		20:00	380	11.20	305.53	1.86	8.75	0.00	0.00	0.57	0.00	208.52	200.00	105.53	255.93
97	1990	4/19	0:00	384	11.10	296.15	0.53	1.58	0.62	0.07	0.00	0.37	209.05	200.00	96.15	257.31
98	1990		4:00	388	10.90	277.99	0.53	1.58	0.62	0.07	0.00	0.37	209.57	200.00	77.99	258.44
99	1990		8:00	392	10.80	269.21	0.53	1.58	0.62	0.07	0.00	0.37	210.10	200.00	69.21	259.43
100	1990		12:00	396	10.75	264.90	0.53	1.58	0.62	0.07	0.00	0.37	210.63	200.00	64.90	260.37
101	1990		16:00	400	10.67	258.10	0.53	1.58	0.62	0.07	0.00	0.37	211.15	200.00	58.10	261.20
102	1990		20:00	404	10.60	252.26	0.53	1.58	0.62	0.07	0.00	0.37	211.68	200.00	52.26	261.96
103	1990	4/20	0:00	408	10.55	248.14	0.07	0.35	0.00	0.00	0.00	0.00	211.75	200.00	48.14	262.65
104	1990		4:00	412	10.48	242.46	0.07	0.35	0.00	0.00	0.00	0.00	211.82	200.00	42.46	263.26
105	1990		8:00	416	10.42	237.66	0.07	0.35	0.00	0.00	0.00	0.00	211.89	200.00	37.66	263.80
106	1990		12:00	420	10.37	233.72	0.07	0.35	0.00	0.00	0.00	0.00	211.96	200.00	33.72	264.29
107	1990		16:00	424	10.33	230.60	0.07	0.35	0.00	0.00	0.00	0.00	212.03	200.00	30.60	264.73
108	1990		20:00	428	10.28	226.73	0.07	0.35	0.00	0.00	0.00	0.00	212.10	200.00	26.73	265.11
109	1990	4/21	0:00	432	10.27	225.97	1.05	0.08	0.00	2.10	2.40	0.67	213.15	200.00	25.97	265.49
110	1990		4:00	436	10.27	225.97	1.05	0.08	0.00	2.10	2.40	0.67	214.20	200.00	25.97	265.86
111	1990		8:00	440	10.23	222.92	1.05	0.08	0.00	2.10	2.40	0.67	215.25	200.00	22.92	266.19
112	1990		12:00	444	10.23	222.92	1.05	0.08	0.00	2.10	2.40	0.67	216.30	200.00	22.92	266.52
113	1990		16:00	448	10.20	220.65	1.05	0.08	0.00	2.10	2.40	0.67	217.35	200.00	20.65	266.82
114	1990		20:00	452	10.20	220.65	1.05	0.08	0.00	2.10	2.40	0.67	218.40	200.00	20.65	267.12
115	1990	4/22	0:00	456	10.20	220.65	0.45	0.00	0.37	0.00	1.87	0.00	218.85	200.00	20.65	267.41
116	1990		4:00	460	10.20	220.65	0.45	0.00	0.37	0.00	1.87	0.00	219.29	200.00	20.65	267.71
117	1990		8:00	464	10.22	222.16	0.45	0.00	0.37	0.00	1.87	0.00	219.74	200.00	22.16	268.03
118	1990		12:00	468	10.25	224.44	0.45	0.00	0.37	0.00	1.87	0.00	220.19	200.00	24.44	268.38
119	1990		16:00	472	10.25	224.44	0.45	0.00	0.37	0.00	1.87	0.00	220.63	200.00	24.44	268.73
120	1990		20:00	476	10.27	225.97	0.45	0.00	0.37	0.00	1.87	0.00	221.08	200.00	25.97	269.11
121	1990	4/23	0:00	480	10.30	228.27	0.00	0.00	0.00	0.00	0.00	0.00	221.08	200.00	28.27	269.52
122	1990		4:00	484	10.30	228.27	0.00	0.00	0.00	0.00	0.00	0.00	221.08	200.00	28.27	269.92
123	1990		8:00	488	10.27	225.97	0.00	0.00	0.00	0.00	0.00	0.00	221.08	200.00	25.97	270.30
124	1990		12:00	492	10.27	225.97	0.00	0.00	0.00	0.00	0.00	0.00	221.08	200.00	25.97	270.67
125	1990		16:00	496	10.25	224.44	0.00	0.00	0.00	0.00	0.00	0.00	221.08	200.00	24.44	271.02
126	1990		20:00	500	9.97	203.82	0.00	0.00	0.00	0.00	0.00	0.00	221.08	200.00	3.82	271.08
127	1990	4/24	0:00	504	9.88	197.49	2.23	0.10	0.00	2.47	0.00	8.58	223.31			271.08
128	1990		4:00	508	9.88	197.49	2.23	0.10	0.00	2.47	0.00	8.58	225.54			271.08
129	1990		8:00	512	9.85	195.41	2.23	0.10	0.00	2.47	0.00	8.58	227.77			271.08
130	1990		12:00	516	9.80	191.98	2.23	0.10	0.00	2.47	0.00	8.58	230.00			271.08
131	1990		16:00	520	9.70	185.25	2.23	0.10	0.00	2.47	0.00	8.58	232.23			271.08
132	1990		20:00	524	9.63	180.63	2.23	0.10	0.00	2.47	0.00	8.58	234.46			271.08
133	1990	4/25	0:00	528	9.58	177.39										271.08
							234.46	287.50	176.10	201.00	316.60	191.10	234.46			271.08

Basin Catchment Area= 3260 (km2)
Rainfall Duration from the Beginning to the Centroid (Tp)= 144.551 (hr)
Runoff Duration from the Beginning to the Centroid (Tr)= 193.416 (hr)
Duration of Rainfall = 480 (hr)
Basin Time Lag = 48.865 (hr)
Accum. Rainfall Depth= 234.46 (mm)
Accum. Runoff Depth= 83.15 (mm)
Runoff Coefficient= 35.47%

表6.12　マグワグワダム地点における単位ハイドログラフ

Time (hr)	% of (Lg + D/2)	q x (LG+D/2) /vol	q (m3/sec)
0	0%	0	0
12	23.47%	16.00	114.45
24	46.94%	29.00	207.44
36	70.41%	23.00	164.52
48	93.88%	15.50	110.87
60	117.35%	10.80	77.25
72	140.82%	7.60	54.36
84	164.29%	5.20	37.20
96	187.76%	3.40	24.32
108	211.23%	2.00	14.31
120	234.70%	1.25	8.94
132	258.17%	0.73	5.22
144	281.64%	0.45	3.22
156	305.11%	0.26	1.86
168	328.58%	0.17	1.22
180	352.05%	0.10	0.20
192	375.52%	—	—
204	398.99%	—	—
216	422.46%	—	—
228	445.92%	—	—
240	469.39%	—	—

表6.13　ソンドゥ川流域における可能最大降雨

Time (day)	Recorded Max. Depth-Duration (mm)	Probable Max. Depth-Duration (mm)	P.M.P (mm/12hr)
0.5	52.1	83.4	83.4
1.0	56.6	90.6	7.2
1.5	71.0	113.6	23.0
2.0	85.4	136.6	23.0
2.5	96.7	154.7	18.1
3.0	107.9	172.6	17.9
3.5	117.3	187.7	15.0
4.0	126.7	202.7	15.0
4.5	131.5	210.4	7.7
5.0	136.2	217.9	7.5
5.5	148.5	237.6	19.7
6.0	160.8	257.3	19.7
6.5	178.1	285.0	27.7
7.0	195.4	312.6	27.7
7.5	201.8	322.9	10.2
8.0	208.1	333.0	10.1
8.5	214.5	343.2	10.2
9.0	220.9	353.4	10.2
9.5	227.2	363.5	10.1
10.0	233.6	373.8	10.2
10.5	237.1	379.4	5.6
11.0	240.7	385.1	5.8
11.5	244.2	390.7	5.6
12.0	247.8	396.5	5.8
12.5	251.3	402.1	5.6
13.0	254.8	407.7	5.6
13.5	258.4	413.4	5.8
14.0	261.9	419.0	5.6
14.5	265.5	424.8	5.8
15.0	269.0	430.4	5.6
15.5	275.0	440.0	9.6
16.0	280.9	449.4	9.4
16.5	286.9	459.0	9.6
17.0	292.9	468.6	9.6
17.5	298.9	478.2	9.6
18.0	304.8	487.7	9.4
18.5	310.8	497.3	9.6
19.0	316.8	506.9	9.6
19.5	322.7	516.3	9.4
20.0	328.7	525.9	9.6
20.5	335.0	536.0	10.1
21.0	341.4	546.2	10.2
21.5	347.7	556.3	10.1
22.0	354.0	566.4	10.1
22.5	360.3	576.5	10.1
23.0	366.7	586.7	10.2
23.5	373.0	596.8	10.1
24.0	379.3	606.9	10.1
24.5	385.7	617.1	10.2
25.0	392.0	627.2	10.1
25.5	398.3	637.3	10.1
26.0	404.7	647.5	10.2
26.5	411.0	657.6	10.1
27.0	417.3	667.7	10.1
27.5	423.6	677.8	10.1
28.0	430.0	688.0	10.2
28.5	436.3	698.1	10.1
29.0	442.6	708.2	10.1
29.5	449.0	718.4	10.2
30.0	455.3	728.5	10.1

表 6.14　推定ＰＭＰ降雨パターン

Day	Rainfall Excess (mm)	Day	Rainfall Excess (mm)
0.5	6.06	15.5	13.80
1.0	6.06	16.0	10.80
1.5	6.06	16.5	10.80
2.0	6.06	17.0	9.00
2.5	6.06	17.5	9.00
3.0	6.06	18.0	4.56
3.5	6.06	18.5	4.56
4.0	6.06	19.0	6.12
4.5	6.06	19.5	6.12
5.0	6.06	20.0	6.12
5.5	5.76	20.5	3.42
6.0	5.76	21.0	3.42
6.5	5.76	21.5	3.42
7.0	5.76	22.0	3.42
7.5	5.76	22.5	3.42
8.0	3.42	23.0	3.42
8.5	3.42	23.5	5.76
9.0	3.42	24.0	5.76
9.5	3.42	24.5	5.76
10.0	3.42	25.0	5.76
10.5	6.12	25.5	5.76
11.0	6.12	26.0	6.06
11.5	16.62	26.5	6.06
12.0	16.62	27.0	6.06
12.5	11.82	27.5	6.06
13.0	11.82	28.0	6.06
13.5	13.80	28.5	6.06
14.0	13.80	29.0	6.06
14.5	49.98	29.5	6.06
15.0	4.32	30.0	6.06

表6.15　マグワグワダム地点での推定ＰＭＦ流入量

Day	Q (m3/s)	Day	Q (m3/s)
0.5	269	15.5	1,700
1.0	395	16.0	1,526
1.5	495	16.5	1,402
2.0	562	17.0	1,287
2.5	609	17.5	1,181
3.0	642	18.0	1,049
3.5	664	18.5	898
4.0	679	19.0	809
4.5	688	19.5	766
5.0	693	20.0	743
5.5	693	20.5	696
6.0	689	21.0	630
6.5	685	21.5	580
7.0	682	22.0	545
7.5	680	22.5	524
8.0	652	23.0	509
8.5	602	23.5	525
9.0	563	24.0	567
9.5	537	24.5	602
10.0	518	25.0	625
10.5	536	25.5	642
11.0	583	26.0	657
11.5	622	26.5	672
12.0	769	27.0	682
12.5	1,005	27.5	689
13.0	1,137	28.0	693
13.5	1,163	28.5	696
14.0	1,194	29.0	698
14.5	1,656	29.5	699
15.0	1,921	30.0	700

表7.1　1JG1における浮遊砂サンプリング記録

D/M/Yr	Gauge Height (m)	Discharge (m3/s)	Weight (ton/day)
26/1/48	1.14	5.20	3.74
13/2/48	1.04	3.30	1.85
27/2/48	1.01	2.80	2.28
25/5/48	1.32	9.80	34.22
17/5/48	1.40	12.70	49.63
26/5/48	1.31	9.50	25.57
6/8/48	1.65	23.50	104.20
14/6/48		36.7	346.6
28/6/48	1.74	29.00	87.77
9/11/48	2.41	98.50	587.80
7/12/51	1.68	25.30	124.50
26/7/51	1.80	32.50	248.20
13/9/51	2.38	94.00	555.20
10/4/51	1.71	26.80	103.50
6/9/52	2.41	98.50	643.20
9/8/52	1.97	45.20	334.50
20/10/52	1.76	29.70	121.60
1/12/53	1.19	6.10	16.77
16/3/53	0.96	2.20	2.25
20/4/53	1.23	7.40	19.09
21/6/53	1.47	15.30	57.86
25/1/54	1.04	3.30	9.61
19/5/54	1.90	39.40	178.81
24/5/54	2.07	55.50	464.09
21/6/54	2.27	79.10	441.36
5/2/55	1.25	7.80	57.13
5/9/55	1.69	26.00	469.25
19/9/55	2.30	83.40	818.61
13/9/56	2.50		263.24
1/7/57	1.34	10.50	28.62
21/1/57	1.35	10.80	22.28
2/4/57	1.36	11.00	31.96
25/2/57	1.22	6.90	18.89
25/3/57	1.14	5.20	10.95
4/1/57	1.31	9.40	18.64
22/4/57	-	96.8	1273.22
5/6/57	-	148.3	763.41
13/5/57	-	122.9	365.91
20/5/57	-	86.8	321.75
6/3/57	-	188.6	1142.48
17/6/57	-	140	442.25
7/1/57	-	101.1	526.49
8/5/57	2.30	86.80	1308.50
22/7/57	2.01	49.35	281.09
9/2/57	2.23	75.36	385.15
30/9/57	1.68	25.72	85.39
14/10/57	1.45	15.44	52.22
20/1/58	1.12	6.23	13.96
14/5/84	0.66	1.00	41.05
15/6/84	0.66	1.00	20.90
28/6/84	0.61	0.76	46.25

表7.2　1JG3における浮遊砂サンプリング記録

D/M/Yr	Gauge Height (m)	Discharge (m3/s)	Weight (ton/day)
19/5/80	2.32	56.80	1162.25
24/6/80	1.87	43.50	449.58
19/7/80	2.25	53.90	373.12
20/11/80	0.70	15.70	157.15
22/9/84	1.82	25.00	98.63
10/5/84	1.69	19.40	294.97
16/11/84	1.37	17.30	73.12
23/11/84	1.18	13.3	42.85
3/1/85	0.81	6.40	28.98
4/10/85	3.40	55.40	781.50

表7.3　1JG4における浮遊砂サンプリング記録

D/M/Yr	Gauge Height (m)	Discharge (m3/s)	Weight (ton/day)
22/9/84	1.99	25.90	97.34
10/5/84	1.84	19.10	155.07
23/11/84	1.53	13.60	38.20
12/7/84	1.69	18.10	244.94
1/11/85	1.32	9.20	44.58
18/1/85	1.23	7.60	18.92
25/1/85	1.24	7.20	26.53
22/2/85	1.02	4.10	16.3
22/3/85	1.14	6.30	15.57

表7.4　1JG5における浮遊砂サンプリング記録

D/M/Yr	Gauge Height (m)	Discharge (m3/s)	Weight (ton/day)
6/8/84	0.58	10.10	26.70
30/8/84	1.06	36.60	185.97
9/12/84	1.04	33.00	120.21
21/9/84	0.89	24.80	86.27
10/5/84	0.85	23.20	81.10
15/11/85	0.66	14.00	72.26
23/11/85	0.67	14.10	42.91
29/11/85	0.71	16.4	133.24
12/6/84	0.70	15.10	126.92
20/12/84	0.90	29.20	111.46
1/10/85	0.60	9.90	7.30
17/1/85	0.54	7.80	26.49
24/1/85	0.51	6.50	13.96
21/2/85	0.48	4.00	6.94
3/1/85	0.60	8.00	19.73
3/7/85	0.51	6.10	39.89
21/3/85	0.52	5.50	17.60
4/10/85	1.38	69.40	986.55
5/4/85	1.50	86.40	365.38
5/10/85	1.48	71.70	668.24

表7.5　1JD3における浮遊砂サンプリング記録

D/M/Yr	Gauge Height (m)	Discharge (m3/s)	Weight (ton/day)
15/7/80	2.55	49.10	254.07
19/8/80	2.16	21.30	97.02
24/9/80	2.16	21.00	33.53
19/11/80	1.90	11.50	50.14
14/5/84	0.77	7.40	20.38
15/6/84	0.75	6.30	35.26
28/6/84	0.70	21.90	18.16
30/8/84	1.19	23.9	228.86
9/12/84	1.15	21.20	47.64
21/9/84	1.04	16.50	93.09
28/9/84	0.91	12.30	24.60
10/5/84	1.03	16.00	50.46
15/11/84	0.83	9.90	30.07
22/11/84	0.81	8.90	19.64
12/6/84	0.81	8.40	45.52
20/12/84	0.91	12.10	18.81
1/10/85	0.73	6.60	16.26
17/1/85	0.69	5.00	23.33
24/1/85	0.67	4.70	16.46
21/2/85	0.65	2.90	18.05
28/2/85	0.70	3.40	9.10
3/7/85	0.64	2.80	5.07
21/3/85	0.68	4.50	14.09
4/9/85	1.10	20.40	386.16
26/4/85	1.76	61.10	626.04
5/4/85	1.66	53.50	402.93

表7.6　1JF8における浮遊砂サンプリング記録

D/M/Yr	Gauge Height (m)	Discharge (m3/s)	Weight (ton/day)
14/5/84	0.46	3.30	13.85
30/8/84	0.65	9.40	45.03
21/9/84	0.59	6.70	36.91
28/9/84	0.50	3.70	9.86
10/5/84	0.55	5.30	14.66
15/11/84	0.46	3.50	36.04
22/11/84	0.50	3.50	22.65
29/11/84	0.53	4.9	107.01
12/6/84	0.50	4.10	150.90
20/12/84	0.78	13.00	53.59
1/10/85	0.45	3.30	11.08
17/1/85	0.39	2.00	4.59
24/1/85	0.36	1.70	5.73
21/2/85	0.34	1.20	5.42
28/2/85	0.37	1.20	9.23
3/7/85	0.43	2.70	28.61
21/3/85	0.32	1.20	4.75
18/4/85	1.71	52.10	383.30
26/4/85	1.61	57.40	178.04
5/4/85	1.18	28.20	159.39
5/10/85	0.98	16.40	138.03
24/5/85	1.27	32.70	490.67

表7.7　マグワグワ貯水池への堆砂流入量

Year	At the 1JG1 Station			Sediment Inflow into Magwagwa Reservoir (1000m3)	Annual Denundate Rate (mm/year)
	Average Discharge (m3/s)	Accum. Sediment Volume (1000m3)	Daily Max Sediment Inflow (1000m3)		
1946	40.69	312.66	-	298.50	0.094
1947	60.71	1082.20	46.58	1033.20	0.327
1948	19.60	181.52	3.31	173.30	0.055
1949	15.36	126.45	2.52	120.72	0.038
1950	21.13	183.41	2.52	175.10	0.055
1951	51.08	725.05	17.67	692.23	0.219
1952	48.10	702.69	18.63	670.88	0.212
1953	7.46	34.28	0.35	32.73	0.010
1954	26.08	268.16	4.54	256.02	0.081
1955	25.27	262.21	4.37	250.34	0.079
1956	48.15	573.30	6.63	547.34	0.173
1957	44.24	615.85	14.18	587.97	0.186
1958	25.19	236.42	7.07	225.72	0.071
1959	24.37	220.14	3.63	210.17	0.067
1960	38.09	413.64	4.68	394.92	0.125
1961	58.33	1148.09	32.24	1096.11	0.347
1962	66.25	985.65	23.61	941.03	0.298
1963	64.29	1138.78	24.59	1087.22	0.344
1964	60.63	972.19	47.80	928.18	0.294
1965	21.96	203.83	6.18	194.60	0.062
1966	36.60	425.29	10.74	406.04	0.128
1967	36.63	425.02	5.78	405.78	0.128
1968	66.25	1007.22	25.89	961.63	0.304
1969	24.90	214.54	7.65	204.82	0.065
1970	60.70	834.07	10.24	796.31	0.252
1971	39.44	483.35	7.57	461.47	0.146
1972	30.58	306.92	4.25	293.03	0.093
1973	37.14	386.72	6.59	369.21	0.117
1974	44.03	559.65	12.55	534.31	0.169
1975	44.61	585.33	9.02	558.83	0.177
1976	26.45	267.00	5.01	254.91	0.081
1977	70.20	1073.45	16.28	1024.85	0.324
1978	79.47	1298.23	33.67	1239.46	0.392
1979	47.04	557.50	6.35	532.26	0.168
1980	24.73	234.08	3.42	223.48	0.071
1981	47.27	638.85	18.02	609.93	0.193
1982	50.83	761.51	24.42	727.04	0.230
1983	43.72	512.79	8.46	489.58	0.155
1984	17.05	122.66	4.00	117.11	0.037
1985	47.18	610.40	8.74	582.77	0.184
1986	21.01	164.67	1.46	157.21	0.050
1987	36.41	431.61	11.37	412.07	0.130
1988	62.18	905.65	14.45	864.65	0.274
1989	50.73	631.52	-	602.93	0.191
1990	79.61	1232.01	-	1166.69	0.369
Average	42.04	556.81	-	531.39	0.168

Note : (1) Estimated sediment volume includes the bedload which is assumed to be 20% of the suspended load.

Note : (2) Estimate of sediment in 1990 is included by October.

表 8.1 既得水利権 (1/2)

River Name	Name of Permit Holder	Issued Date (Yr/M/D)	Expired Date (Yr/M/D)	Purpose of Water Abstruction: Domestic Water (l/s)	Public Tap Water (l/s)	Minor Irrigation (l/s)	Industry (l/s)	Hydro-Power (l/s)	General Irrigation (l/s)	Others (l/s)	Total Amount (l/s)
Kiptiget	Buret Tea Company	54/11/12	2014/9/18								0.00
Kiptiget	Land Limitted V.	72/10/20	85/5/31	0.25							0.25
Kiptiget	Coservater of Forest	63/5/31	88/5/31	0.21							0.21
Kiptiget	Richard Arap Koech	86/8/7	2003/6/14	0.06							0.06
Kiptiget	Conservater of Forest	84/6/14	84/12/31	0.05							0.05
Kiptiget	Kimalel Arap Boido	80/2/6	2004/2/6								0.00
kiptiget	Marinwny Chepkwony										0.00
Kiptiget	Kipkering Arap Chumo	86/3/11	2011/3/11	0.02							0.02
Kiptiget	A. H. P. Co., Ltd.	87/5/8	92/5/8								0.00
	Sub-total			0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.60
Kipsonoi	Frendrick Kipkemoi La	75/10/15	80/7/31	0.50							0.50
Kipsonoi	Manaret F.Co.Socy	66/9/14	91/9/30	0.57							0.57
Kipsonoi	Ernest Nonman Lanyon	60/8/18	85/6/30	0.04			0.70				0.75
Kipsonoi	Kibuget F. Coop.		80/12/31	0.13							0.13
Kipsonoi	Brooke Bond Co., Ltd.		99/10/8	0.07							0.07
Kipsonoi	Sett. Fund Trustee	68/5/20	86/1/31	0.28		0.01					0.29
Kipsonoi	Kimutei x. Kibigen.	61/10/5	85/12/31								0.00
Kipsonoi	Sett. Fund Trudtees						0.00				0.00
Kipsonoi	Sett. Fund Trustees	68/4/15	93/4/30	0.11							0.11
Kipsonoi	Kipsigis A. D. Council	55/4/14						0.00			0.00
Kipsonoi			78/11/3								0.00
Kipsonoi	Sotik Water Supply	68/6/3	93/6/29	114.46							114.46
Kipsonoi	Ngoina Tea Estate	57/7/13	83/12/31	0.26			0.26				0.52
Kipsonoi	Director of Agriculture		79/1/5	0.05							0.05
Kipsonoi	Michael Carlos Bird	58/3/31	83/12/31	0.13							0.13
Kipsonoi	Settlement Fun Trust	67/6/30	83/12/31								0.00
Kipsonoi	Maritim Arap Soi	67/8/28	92/8/31								0.00
Kipsonoi	Kenya Fruits Proc. Ltd.	87/3/27	93/2/26				0.07				0.07
Kipsonoi	Kiptulwa Ranch & Farm	71/6/16	95/6/3	1.55						0.05	1.60
Kipsonoi	Pyrethrum Marketing Board	84/7/12	77/1/16								0.00
Kipsonoi	Kipkoech Arap Langat	75/12/3	98/6/27	0.07							0.07
Kipsonoi	Sotik Tea Co., Ltd.	81/1/25	2003/10/25	0.16							0.16
Kipsonoi	Kipkeke Ltd.	78/10/25	79/2/29	0.26							0.26
Kipsonoi	Kipewit Secondary School			0.57							0.57
Kipsonoi	Samuel K. Arap Chumo	86/4/3	2010/6/28								0.00
Kipsonoi	Kiplangat Arap Maina	86/5/13	87/5/13								0.00
Kipsonoi	Kimngeno Arap Siege & J.	87/10/2	2012/10/2	0.04							0.04
Kipsonoi	Nelson K. Keter	89/5/5	94/5/5	0.10							0.10
	Sub-total		-	119.36	0.00	0.01	1.03	0.00	0.00	0.05	120.46
Itare	L.F.A. Green.	56/4/6	87/12/31								0.00
Itare	Mlima Farmers Company	75/8/27	84/12/31								0.00
Itare	Lands Ltd.	75/7/23	83/12/31								0.00
Itare	Haraka Farmers	69/6/10	85/12/31								0.00
Itare	Kongoi Farm Limited	74/1/16	85/12/31								0.00
Itare	Lands Limited	74/7/17	83/12/31								0.00
Itare	Broock Bond Liebig co.,Ltd.	87/4/3	92/4/3	2.40				117.72			120.12
Itare	Lands Limited	75/8/20	87/12/31								0.00
Itare	Haraka Limited	75/7/30	88/3/31								0.00
Itare	Haraka Limited	74/7/17	88/3/31	0.62							0.62
Itare	Agricultural Sett. Trust	65/8/5	90/8/31	0.36							0.36
Itare	Set-kobor Farm	75/8/20	80/5/31	0.26							0.26
Itare	Agricultural Trust	63/2/15	88/2/28								0.00
Itare	Agricultural Trust	62/6/25	87/5/31								0.00
Itare	Conservation of Forest	73/9/5	74/5/5	0.05							0.05
Itare	Kipsigis Country	76/1/21	99/10/9	0.01							0.01
Itare	Kiptangas Lebosso	76/7/14	76/11/14								0.00
Itare	Divisional Forest Office	86/4/3	89/3/3	0.07							0.07
Itare	Chuma Arap Maritim	76/12/8	77/9/8								0.00
Itare	George Langat	81/4/22	2004/2/4	0.05							0.05
Itare	Komunykwony Water Projec	84/3/6		92.81							92.81
	Sub-total			96.62	0.00	0.00	0.00	117.72	0.00	0.00	214.34

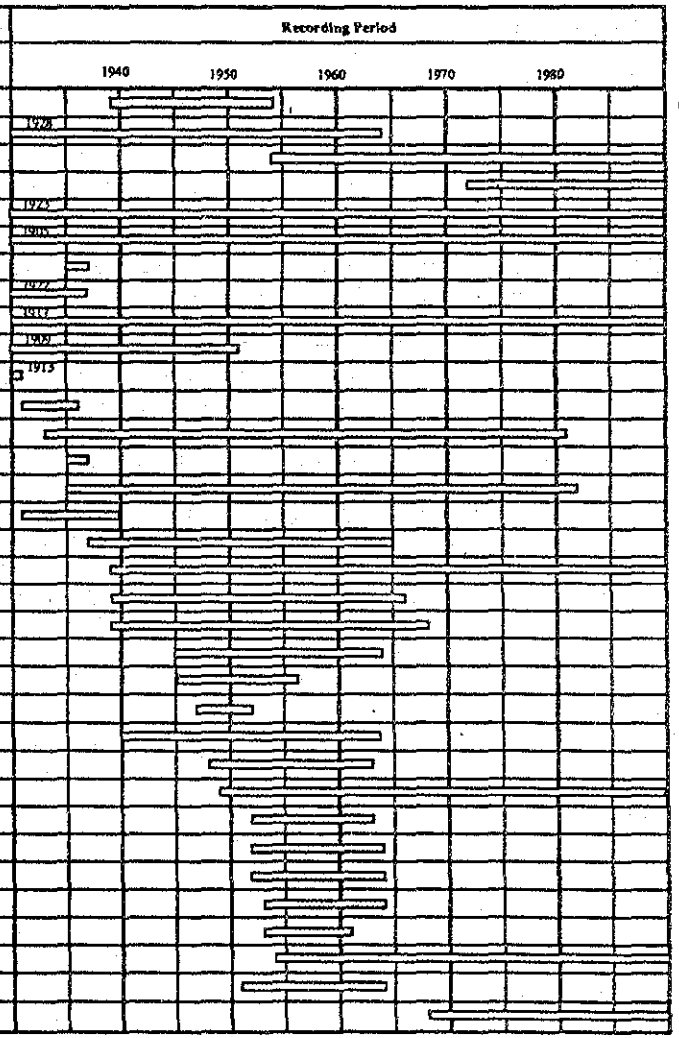
表8.1　既得水利権（2/2）

River Name	Name of Permit Holder	Issued Date (Yr/M/D)	Expired Date (Yr/M/D)	Purpose of Water Abstruction: Domestic Water (l/s)	Public Tap Water (l/s)	Minor Irrigation (l/s)	Industry (l/s)	Hydro-Power (l/s)	General Irrigation (l/s)	Others (l/s)	Total Amount (l/s)
Chemosit	Henry E.Leah Koskei	69/9/3	94/2/12	0.04							0.04
Chemosit	S.Chepkwony A.Kalya	76/1/13	80/9/30	0.17							0.17
Chemosit	K.C.C.Kibeneti Water Suppl	71/6/2	96/1/27		0.18						0.18
Chemosit	Tegat Tea Factory	75/6/18	98/10/18	0.51			0.63				1.14
Chemosit	Joseph K.Arap.Cheruiyot	86/6/6	2011/6/6	0.07				0.16			0.23
Chemosit	Joshua A.Chererotti	86/11/7	91/11/7	0.03							0.03
Chemosit	Solomon Chepkwony & K.Ki	88/8/5	93/8/5	0.02							0.02
	Sub-total			0.84	0.18	0.00	0.63	0.16	0.00	0.00	1.81
Sambret	Broock Bond Liebig Co.,Ltd.	87/4/3	92/4/3	0.53							0.53
Sambret	C.C. of Kipsigis	97/7/25	92/7/31	0.02							0.02
	Sub-total			0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.55
Sisi	Wochi Estates	78/7/24	93/4/30								0.00
Sisi	Kaitet R.F. Coop.School	72/8/18	93/7/31	0.58							0.58
Sisi	Sett F. Trustees	71/6/30	95/6/5	0.33							0.33
Sisi	Sett.F.Trustees	72/1/27	96/8/6								0.00
Sisi	B. Kenya Estates	55/3/25	2001/11/7								0.00
Sisi	Simeon Nyachae.	75/9/10	97/3/15	0.09							0.09
	Sub-total			1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Songon	Arimi F.C.S.Ltd.	84/2/9	2006/12/31	0.21							0.21
Songon	Chokereria Farm Limited	84/7/26	2030/5/5	0.08							0.08
Songon	Lands Ltd.	82/3/24	82/4/26	0.06							0.06
Songon	Settlement Fund Trust	75/11/19	84/12/31	0.19							0.19
Songon	Kenjockeny Estate	56/12/19	81/12/31	0.24							0.24
Songon	Agricultural Development Co	85/10/17	2007/12/31								0.00
Songon	Agricultural Development Co	71/5/12	82/12/31								0.00
Songon	Kamukasagiki Farmers	74/9/25	87/1/24								0.00
Songon	Kimusagiki Company	75/12/3	83/12/31								0.00
Songon	Lands Limited	74/6/26	84/1/31	0.30							0.30
Songon	Francis Arap Maiyo.	75/4/30	83/12/31	0.66							0.66
Songon	Moto Farm Coop. Soc.	80/8/15	84/12/31	610.65							610.65
Songon	Kongoi Farm Ltd.	73/4/11	84/6/3	0.09							0.09
Songon	Settlement Fund Trust	76/2/4	84/12/31								0.00
Songon	Wakaruaya Estate Ltd.	80/6/11	85/12/31	0.26							0.26
Songon	Mrs. E.M.Abraham		78/12/1	0.24							0.24
Songon	Boron Farm A.D.C.	60/8/31	85/12/31	0.55							0.55
Songon	Agricultural Dev. Coop.	70/11/11	88/2/28								0.00
Songon	Land Limited	73/5/16	87/9/11								0.00
Songon	Lands Limited	76/2/4	80/12/31	0.08							0.08
Songon	Francis Arap Maiywa	74/7/24	87/11/30								0.00
Songon	Sett.Fund Trustee	78/11/15	88/2/28								0.00
Songon	Sett.Fund Trustee	80/7/16	87/2/9	1.14							1.14
Songon	Ikumbi W.Project	78/8/2	79/8/2	1.04							1.04
Songon	Christopher G.Njeru	85/2/18		0.01							0.01
	Sub-total			615.79	0.00	0.00	0.00	0.00	0.00	0.00	615.79
Saosa	A.H.P.Co.,Ltd.	58/5/23	83/12/31	1.09			0.79				1.87
Saosa	A.H.P. Co.,Ltd.	65/1/16	90/1/31	0.76			0.62				1.38
Saosa	A.H.P. Co.,Ltd.	68/2/26	93/2/28	0.41							0.41
	Sub-total			2.26	0.00	0.00	1.41	0.00	0.00	0.00	3.66
Sondu	Lutheran Church of Kenya	68/9/25		0.13							0.13
Sondu	Kipsigis A.D. Council	55/4/14									0.00
Sondu	Settlement F. Trustee	57/8/1	82/12/31	0.05							0.05
Sondu	Agricultural Dev. Coop.	72/4/26	73/4/26	1.14							1.14
Sondu	Agriculture S. Trustee	62/6/23	99/8/18	0.26							0.26
Sondu	A.S.Trust	63/12/19	88/12/31	0.10							0.10
Sondu	Lutheran Church Matongo	68/9/25	93/9/30	0.13							0.13
Sondu	Andrew Okiri	80/9/24									0.00
	Sub-total			1.81	0.00	0.00	0.00	0.00	0.00	0.00	1.81
	TOTAL			838.83	0.18	0.01	3.07	117.88	0.00	0.05	960.01

付　　図

図 4.1 ソンドゥ川流域内の雨量観測所一覧表 (1/2)

NO.	Station Name	ID. Number	River ID.Number	Coordinates Lat.	Coordinates Long.
1	NYAKACH DISPENSARY	9034020	1JF / 1JG	0°23'S	34°56'E
2	CRAIGMORE SOTIK	9034024	1JE	0°49'S	34°59'E
3	NYAKWELE TRADING CENTRE	9034067	1JG	0°21'S	34°47'E
4	KABABE PRIMARY SCHOOL	9034113	1JC	0°32'S	34°59'E
5	JAMJI ESTATE	9035001	1JC	0°28'S	35°12'E
6	KERICHO D.C. OFFICE	9035003	1JC	0°23'S	35°17'E
7	KARABWET KERICHO	9035004	1JC	0°20'S	35°20'E
8	LUMBWA KISIMOT	9035005	1JC	0°19'S	35°23'E
9	SOTIK MONIERI	9035013	1JF	0°40'S	35°04'E
10	MOLO KWELESOI	9035019	1JA	0°23'S	35°34'E
11	LUMBWA INDUSTRIAL MISSON	9035024	1JC	0°20'S	35°21'E
12	KAMA KOSA	9035039	1JF	0°42'S	35°14'E
13	KABINGA SCHOOL	9035044	1JD	0°25'S	35°07'E
14	SOTIK ESTATE	9035058	1JE	0°45'S	35°12'E
15	LITEIN MISSION	9035059	1JF / 1JB	0°35'S	35°11'E
16	JEBALAT ESTATE	9035063	1JF	0°41'S	35°05'E
17	KIVOGA ESTATE	9035066	1JF	0°36'S	35°04'E
18	KAISUGU HOUSE	9035075	1JC	0°20'S	35°23'E
19	KAISUGU FOREST	9035076	1JC	0°20'S	35°22'E
20	SETI ESTATE	9035077	1JF	0°34'S	35°02'E
21	KERINGET ESTATE SOTIK	9035095	1JE	0°44'S	35°06'E
22	MATARORA	9035098	1JF	0°35'S	35°03'E
23	CHEBORGET	9035105	1JF	0°35'S	35°07'E
24	MOLO LOLOKWE	9035111	1JA	0°22'S	35°34'E
25	TALAKWA LTD.	9035112	1JE	0°45'S	35°14'E
26	NYARONDET ESTATE	9035121	1JF	0°43'S	35°02'E
27	R.C. CREAMERIES LTD.	9035134	1JF	0°42'S	35°05'E
28	READING ESTATE	9035135	1JF	0°44'S	35°11'E
29	KASIALA FARM	9035136	1JE	0°49'S	35°01'E
30	CHEMEGAL EXP. SUB-STATION	9035137	1JE	0°44'S	35°06'E
31	MOYET FARM	9035139	1JE	0°45'S	35°18'E
32	SONDU POLICE STATION	9035142	1JF / 1JG	0°24'S	35°01'E
33	KERICHO TEA RES. INSTITUTE	9035145	1JC	0°21'S	35°20'E
34	KAPLONG GIRLS SEC. SCHOOL	9035270	1JF	0°41'S	35°08'E



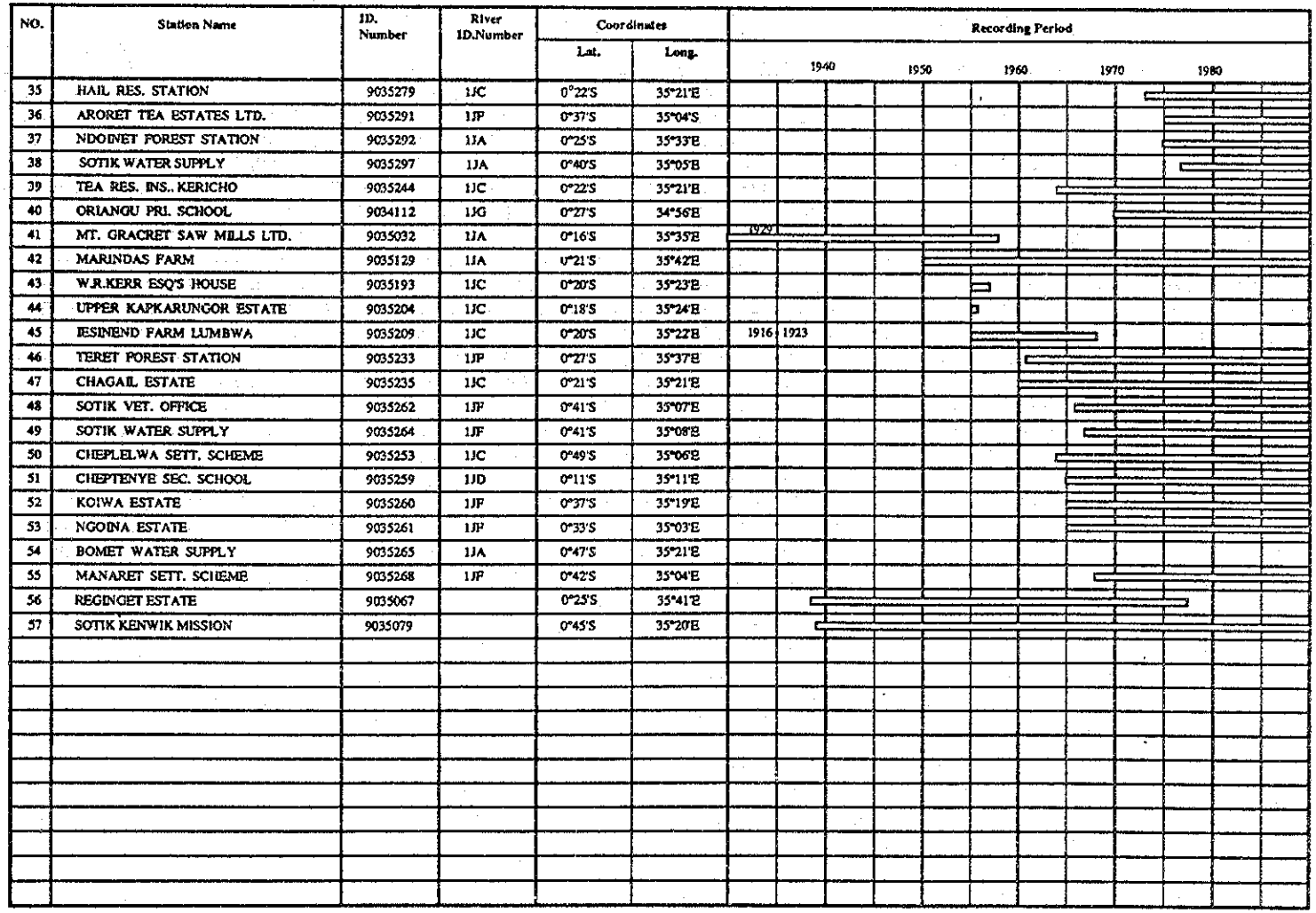
Hourly Rainfall

Daily Rainfall

REPUBLIC OF KENYA
MAGWAGWA HYDROELECTRIC POWER DEVELOPMENT PROJECT
JAPAN INTERNATIONAL COOPERATION AGENCY

図4.1 ソンドゥ川流域内の雨量観測所一覧表 (2/2)

NO.	Station Name	ID. Number	River ID.Number	Coordinates Lat.	Coordinates Long.	Recording Period
35	HAIL RES. STATION	9035279	1JC	0°22'S	35°21'E	
36	AROREET TEA ESTATES LTD.	9035291	1JF	0°37'S	35°04'S	
37	NDOINET FOREST STATION	9035292	1JA	0°25'S	35°33'E	
38	SOTIK WATER SUPPLY	9035297	1JA	0°40'S	35°05'E	
39	TEA RES. INS.. KERICHO	9035244	1JC	0°22'S	35°21'E	
40	ORIANGU PRI. SCHOOL	9034112	1JG	0°27'S	34°56'E	
41	MT. GRACRET SAW MILLS LTD.	9035032	1JA	0°16'S	35°35'E	1929
42	MARINDAS FARM	9035129	1JA	0°21'S	35°42'E	
43	W.R.KERR ESQ'S HOUSE	9035193	1JC	0°20'S	35°23'E	
44	UPPER KAPKARUNGOR ESTATE	9035204	1JC	0°18'S	35°24'E	
45	IESINEND FARM LUMBWA	9035209	1JC	0°20'S	35°22'E	1916 1923
46	TERET FOREST STATION	9035233	1JF	0°27'S	35°37'E	
47	CHAGAIL ESTATE	9035235	1JC	0°21'S	35°21'E	
48	SOTIK VET. OFFICE	9035262	1JF	0°41'S	35°07'E	
49	SOTIK WATER SUPPLY	9035264	1JF	0°41'S	35°08'E	
50	CHEPLELWA SETT. SCHEME	9035253	1JC	0°49'S	35°06'E	
51	CHEPTENYE SEC. SCHOOL	9035259	1JD	0°11'S	35°11'E	
52	KOIWA ESTATE	9035260	1JF	0°37'S	35°19'E	
53	NGOINA ESTATE	9035261	1JF	0°33'S	35°03'E	
54	BOMET WATER SUPPLY	9035265	1JA	0°47'S	35°21'E	
55	MANARET SETT. SCHEME	9035268	1JF	0°42'S	35°04'E	
56	REGINGET ESTATE	9035067		0°25'S	35°41'E	
57	SOTIK KENWIK MISSION	9035079		0°45'S	35°20'E	



Hourly Rainfall

Daily Rainfall

REPUBLIC OF KENYA
MAGWAGWA HYDROELECTRIC POWER DEVELOPMENT PROJECT
JAPAN INTERNATIONAL COOPERATION AGENCY

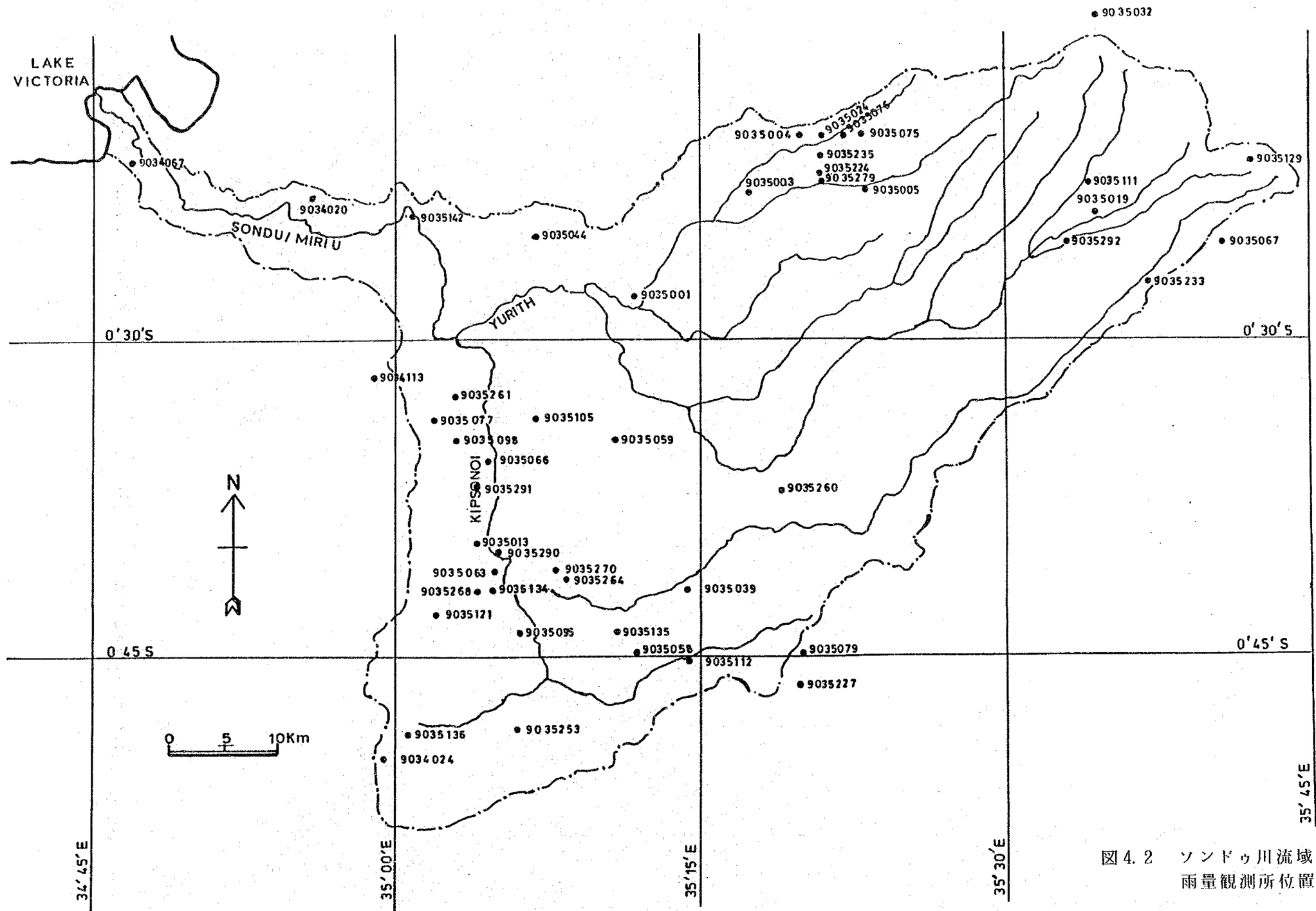


図4.2　ソンドゥ川流域内の雨量観測所位置図

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JAPAN INTERNATIONAL COOPERATION AGENCY

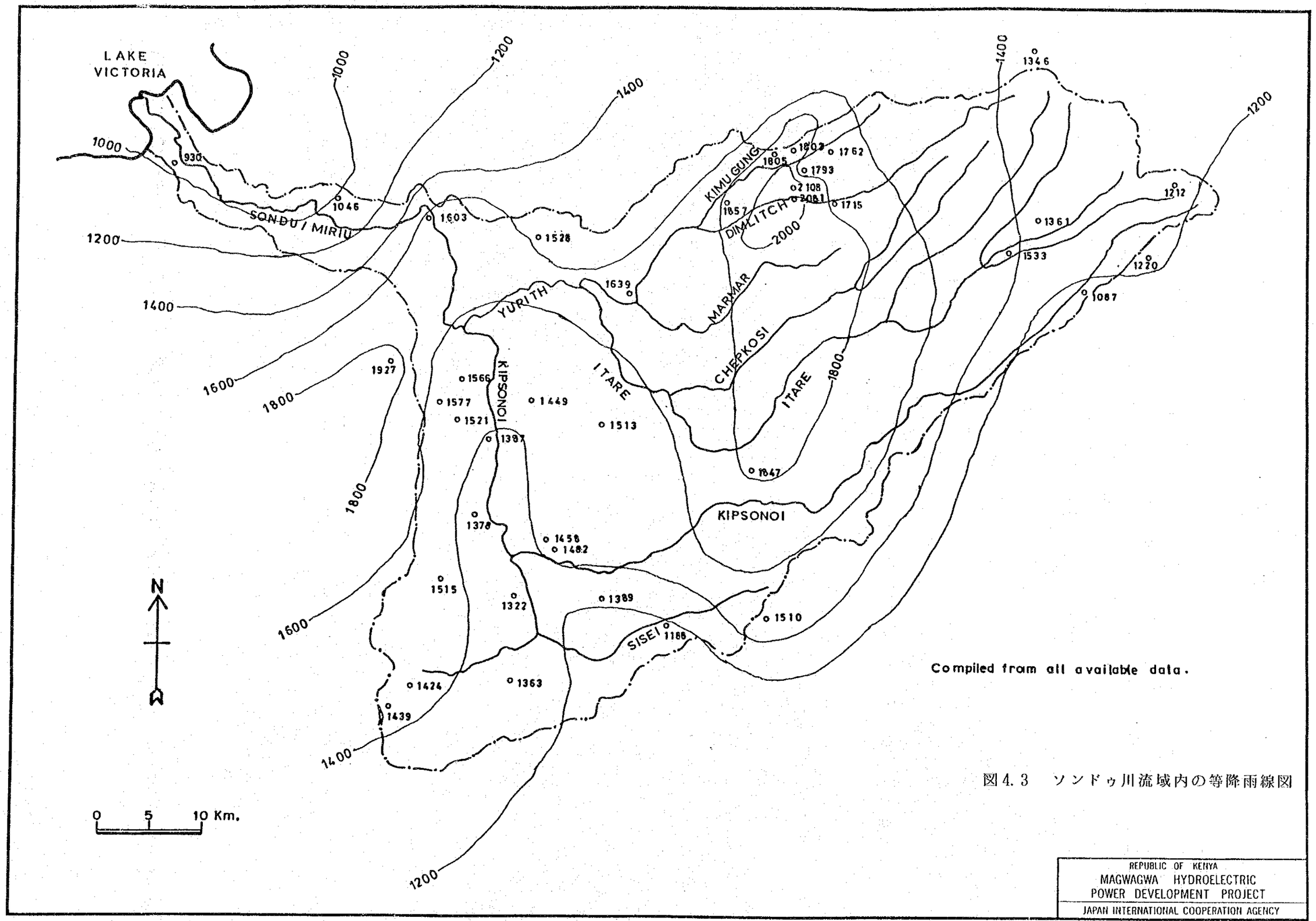

図4.3　ソンドゥ川流域内の等降雨線図

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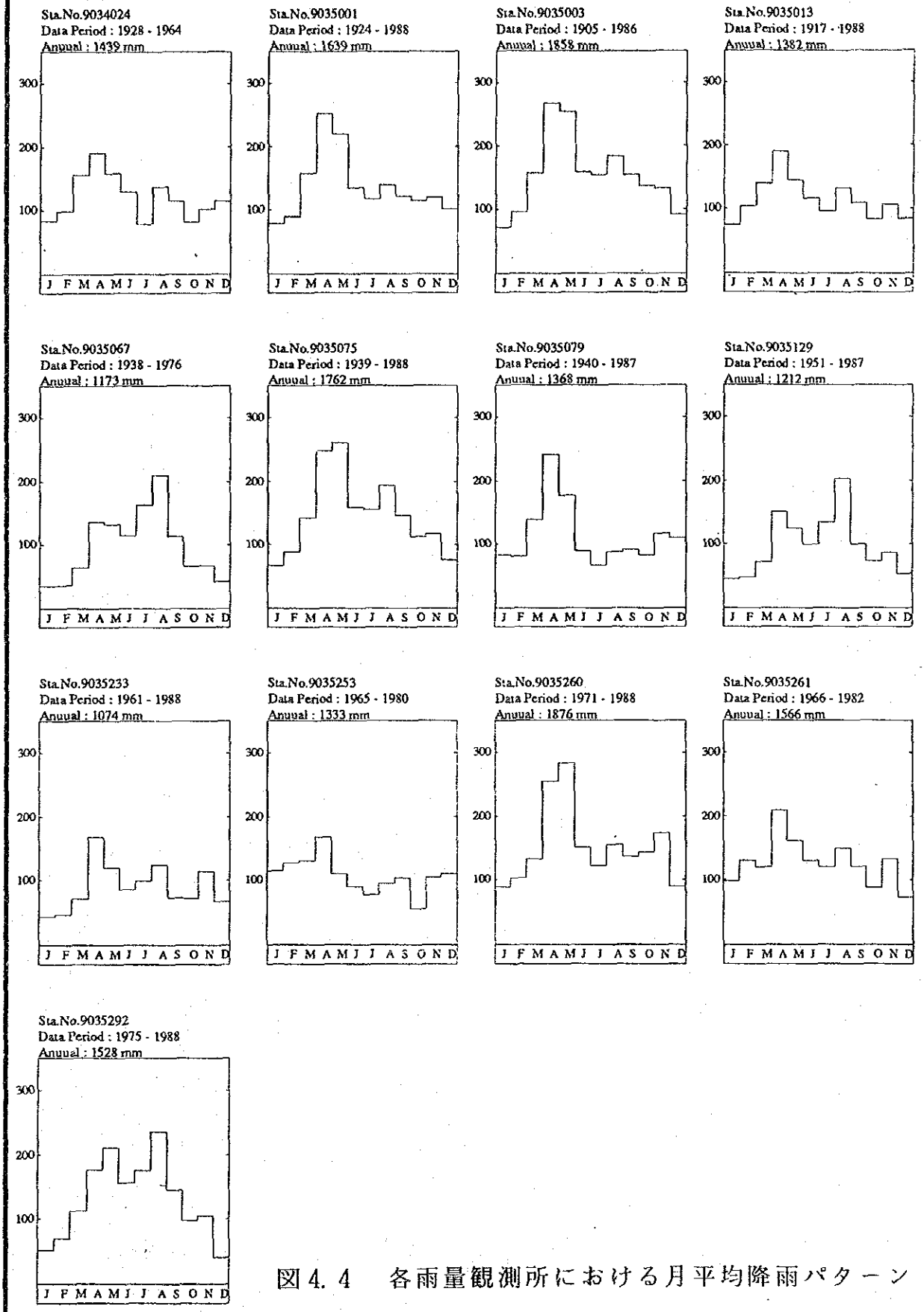

図4.4　各雨量観測所における月平均降雨パターン

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MAGWAGWA HYDROELECTRIC
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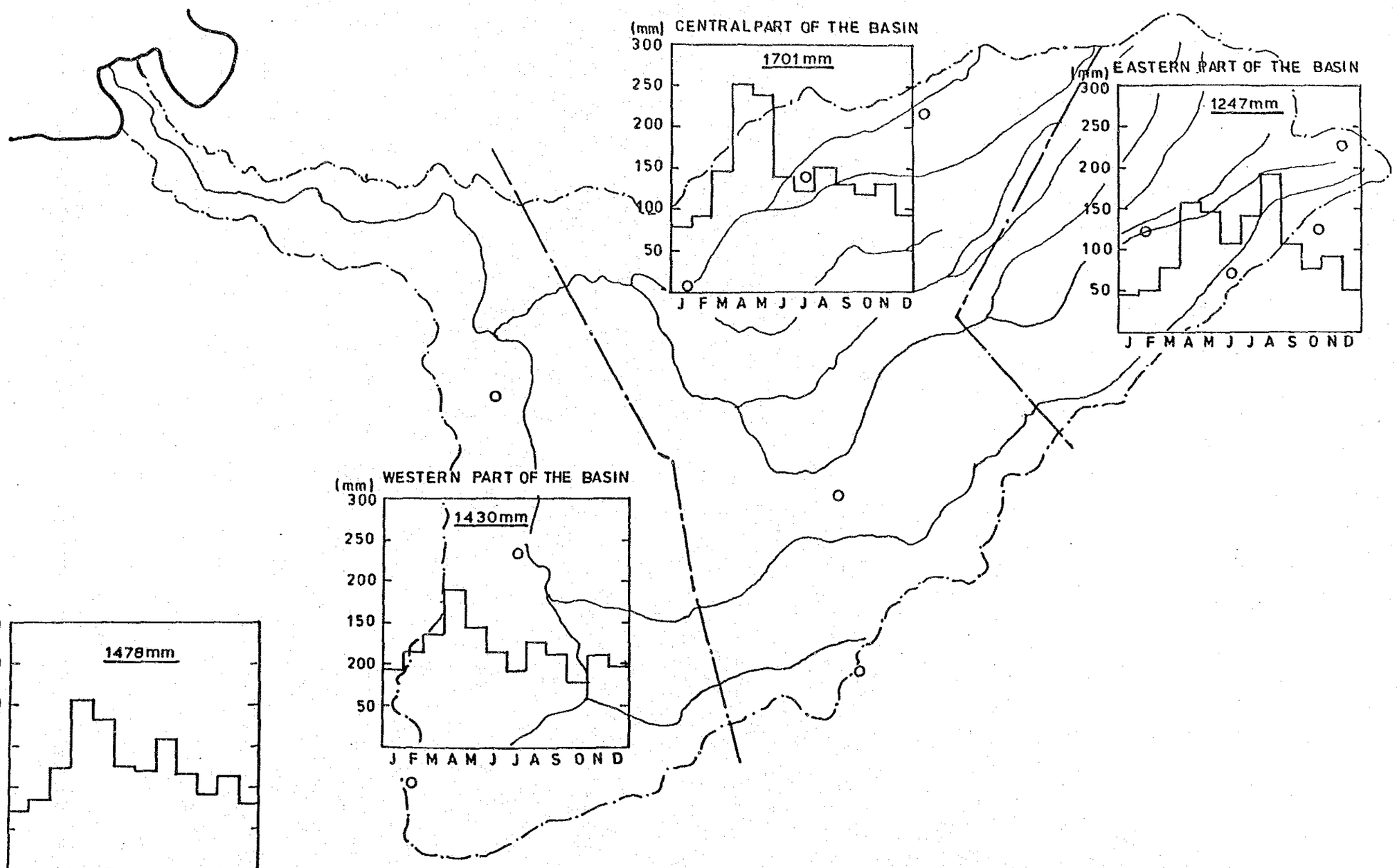

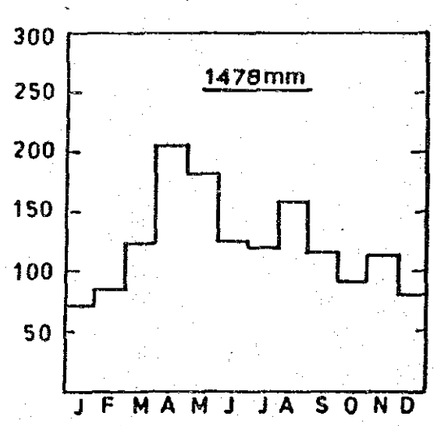

MEAN MONTHLY BASIN RAINFALL

図4.5　ソンドゥ川流域内の代表的月平均降雨パターン

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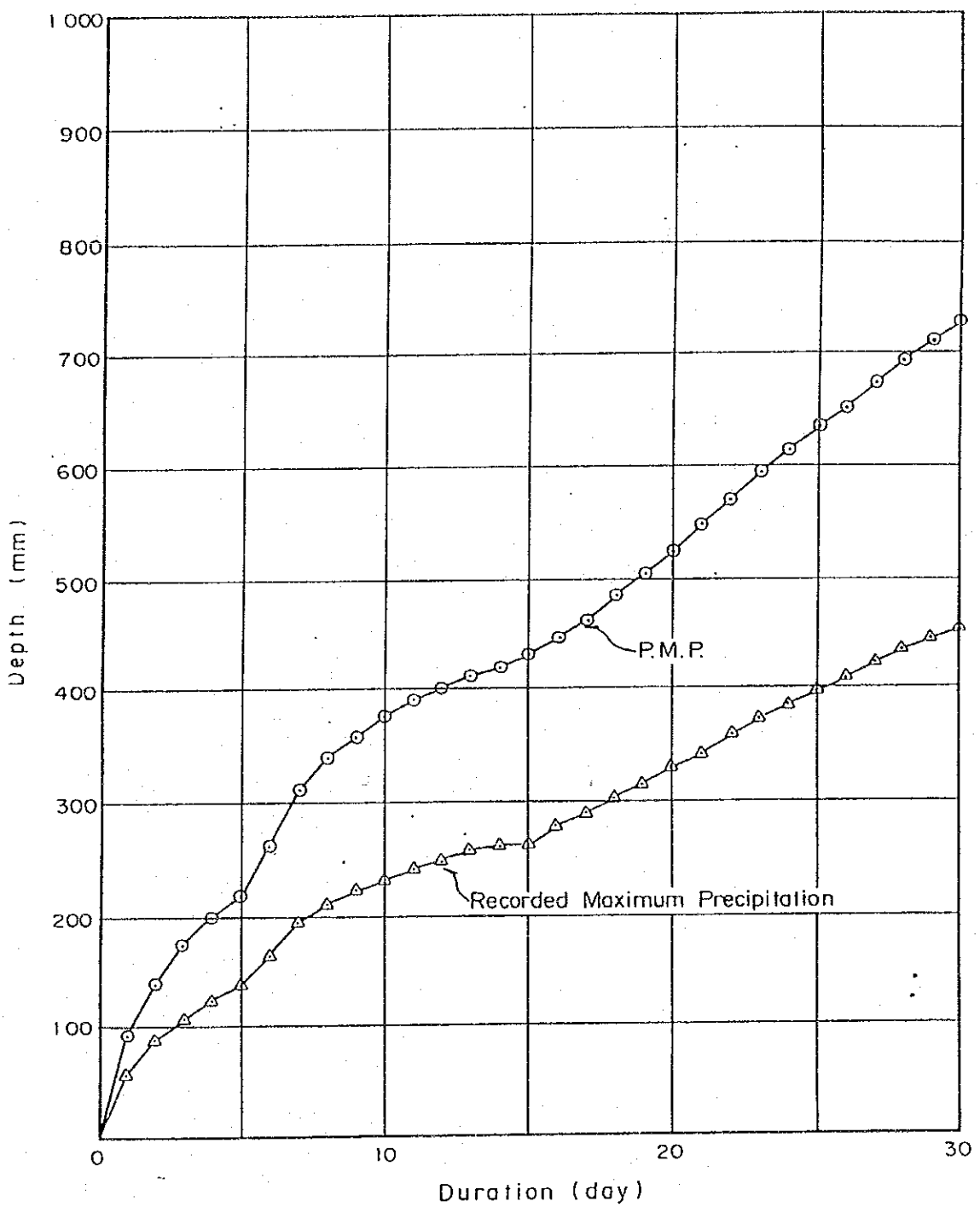
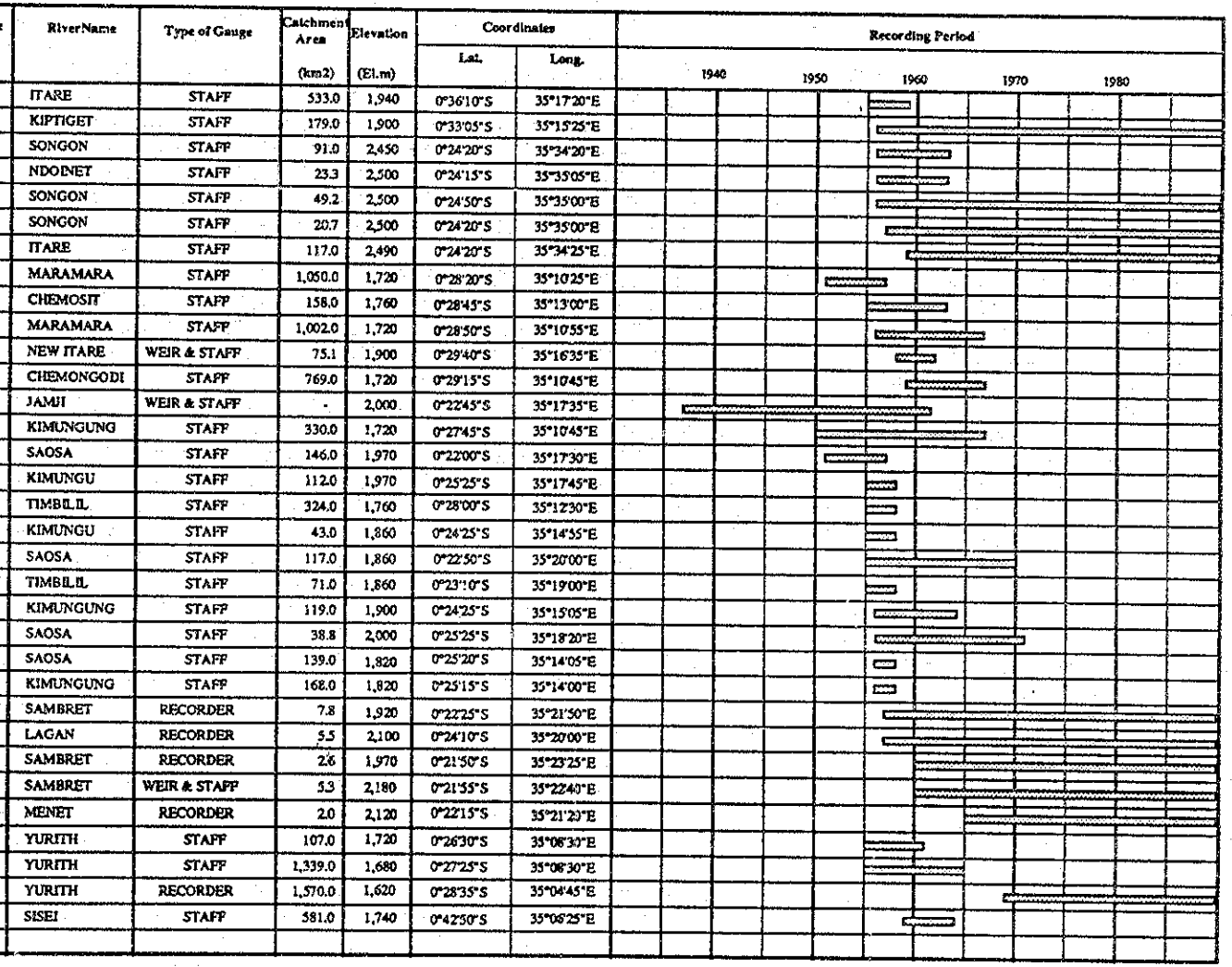


図 4. 6　流域降雨における降雨高－継続時間の関係

REPUBLIC OF KENYA
MAGWAGWA HYDROELECTRIC
POWER DEVELOPMENT PROJECT
JAPAN INTERNATIONAL COOPERATION AGENCY

図 5.1 ソンドゥ川流域内の流量観測所一覧表 (1/2)

NO.	Station Name	RiverName	Type of Gauge	Catchment Area (km2)	Elevation (El.m)	Coordinates Lat.	Coordinates Long.
1	1JA1	ITARE	STAFF	533.0	1,940	0°36'10"S	35°17'20"E
2	1JA2	KIPTIGET	STAFF	179.0	1,900	0°33'05"S	35°15'25"E
3	1JA3	SONGON	STAFF	91.0	2,450	0°24'20"S	35°34'20"E
4	1JA4	NDOINET	STAFF	23.3	2,500	0°24'15"S	35°35'05"E
5	1JA5	SONGON	STAFF	49.2	2,500	0°24'50"S	35°35'00"E
6	1JA6	SONGON	STAFF	20.7	2,500	0°24'20"S	35°35'00"E
7	1JA7	ITARE	STAFF	117.0	2,490	0°24'20"S	35°34'25"E
8	1JB1	MARAMARA	STAFF	1,050.0	1,720	0°28'20"S	35°10'25"E
9	1JB2	CHEMOSIT	STAFF	158.0	1,760	0°28'45"S	35°13'00"E
10	1JB3	MARAMARA	STAFF	1,002.0	1,720	0°28'50"S	35°10'55"E
11	1JB4	NEW ITARE	WEIR & STAFF	75.1	1,900	0°29'40"S	35°16'35"E
12	1JB5	CHEMONGODI	STAFF	769.0	1,720	0°29'15"S	35°10'45"E
13	1JC1	JAMJI	WEIR & STAFF	-	2,000	0°22'45"S	35°17'35"E
14	1JC2	KIMUNGUNG	STAFF	330.0	1,720	0°27'45"S	35°10'45"E
15	1JC3	SAOSA	STAFF	146.0	1,970	0°22'00"S	35°17'30"E
16	1JC4	KIMUNGU	STAFF	112.0	1,970	0°25'25"S	35°17'45"E
17	1JC5	TIMBILIL	STAFF	324.0	1,760	0°28'00"S	35°12'30"E
18	1JC6	KIMUNGU	STAFF	43.0	1,860	0°24'25"S	35°14'55"E
19	1JC7	SAOSA	STAFF	117.0	1,860	0°22'50"S	35°20'00"E
20	1JC8	TIMBILIL	STAFF	71.0	1,860	0°23'10"S	35°19'00"E
21	1JC9	KIMUNGUNG	STAFF	119.0	1,900	0°24'25"S	35°15'05"E
22	1JC10	SAOSA	STAFF	38.8	2,000	0°25'25"S	35°18'20"E
23	1JC11	SAOSA	STAFF	139.0	1,820	0°25'20"S	35°14'05"E
24	1JC12	KIMUNGUNG	STAFF	168.0	1,820	0°25'15"S	35°14'00"E
25	1JC13	SAMBRET	RECORDER	7.8	1,920	0°22'25"S	35°21'50"E
26	1JC14	LAGAN	RECORDER	5.5	2,100	0°24'10"S	35°20'00"E
27	1JC15	SAMBRET	RECORDER	2.6	1,970	0°21'50"S	35°23'25"E
28	1JC16	SAMBRET	WEIR & STAFF	5.3	2,180	0°21'55"S	35°22'40"E
29	1JC17	MENET	RECORDER	2.0	2,120	0°22'15"S	35°21'20"E
30	1JD1	YURITH	STAFF	107.0	1,720	0°26'30"S	35°08'30"E
31	1JD2	YURITH	STAFF	1,339.0	1,680	0°27'25"S	35°08'30"E
32	1JD3	YURITH	RECORDER	1,570.0	1,620	0°28'35"S	35°04'45"E
33	1JE1	SISEI	STAFF	581.0	1,740	0°42'50"S	35°05'25"E



Hourly Discharge

Daily Discharge

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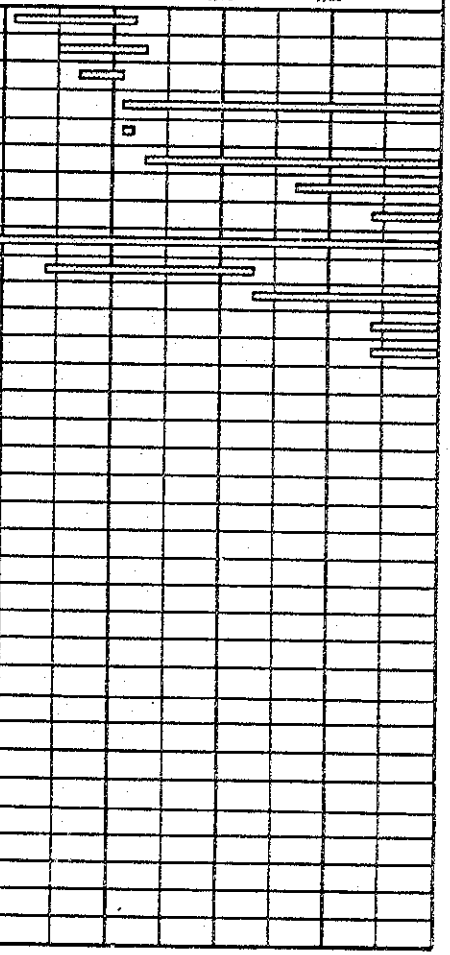
NO.	Station Name	River Name	Type of Gauge	Catchment Area (km2)	Elevation (El.m)	Coordinates Lat.	Coordinates Long.
34	1JF1	KIPSONOI	STAFF	1523.0	1,600	0°30'45"S	35°04'45"E
35	1JF2	KIPSONOI	WEIR & STAFF	476.0	1,740	0°41'55"S	35°07'20"E
36	1JF3	KIPSONOI	STAFF	321.0	1,920	0°39'00"S	35°17'40"E
37	1JF4	KIPSONOI	STAFF	72.5	2,460	0°27'00"S	35°36'50"E
38	1JF5	KIPSONOI	STAFF	-	-	-	-
39	1JF6	KIPSONOI	STAFF	394.0	1,840	0°42'30"S	35°13'15"E
40	1JF7	KIPSONOI	STAFF	-	1,680	0°35'25"S	35°05'08"E
41	1JF8	KIPSONOI	RECORDER	-	1,600	0°32'37"S	35°04'42"E
42	1JG1	SONDU/MIRIU	RECORDER	3260.0	1,500	0°23'35"S	35°00'30"E
43	1JG2	SONDU/MIRIU	STAFF	3450.0	1,140	0°20'50"S	34°48'45"E
44	1JG3	SONDU/MIRIU	STAFF	3462.5	1,140	0°20'50"S	34°47'40"E
45	1JG4	SONDU/MIRIU	RECORDER	-	1,140	0°20'07"S	34°48'07"E
46	1JG5	SONDU/MIRIU	STAFF	-	1,500	0°23'30"S	35°00'48"E

Recording Period



Hourly Discharge

Daily Discharge

図5.1 ソンドゥ川流域内の流量観測所一覧表 (2/2)

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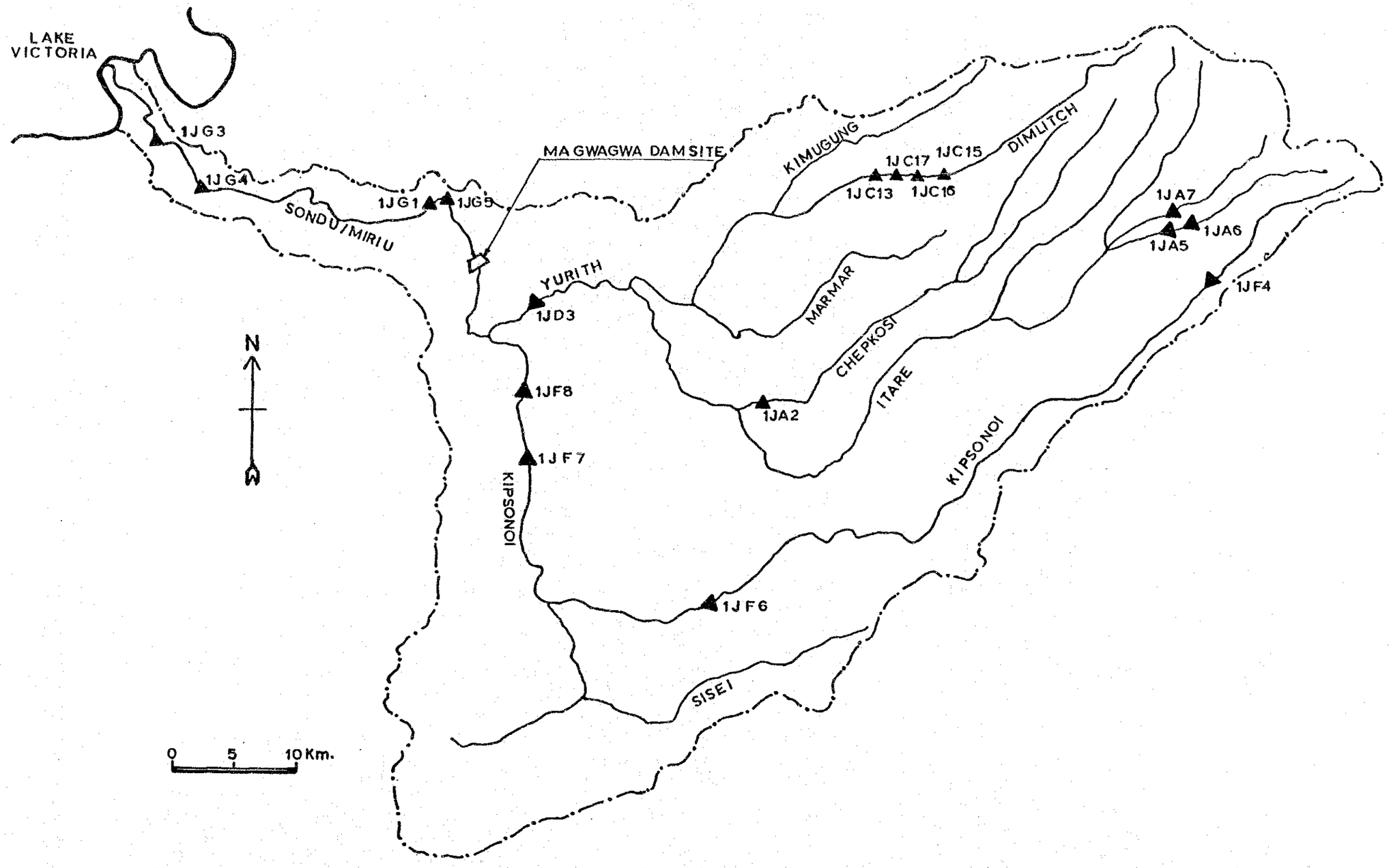

図 5. 2　ソンドゥ川流域内の流量観測所位置図

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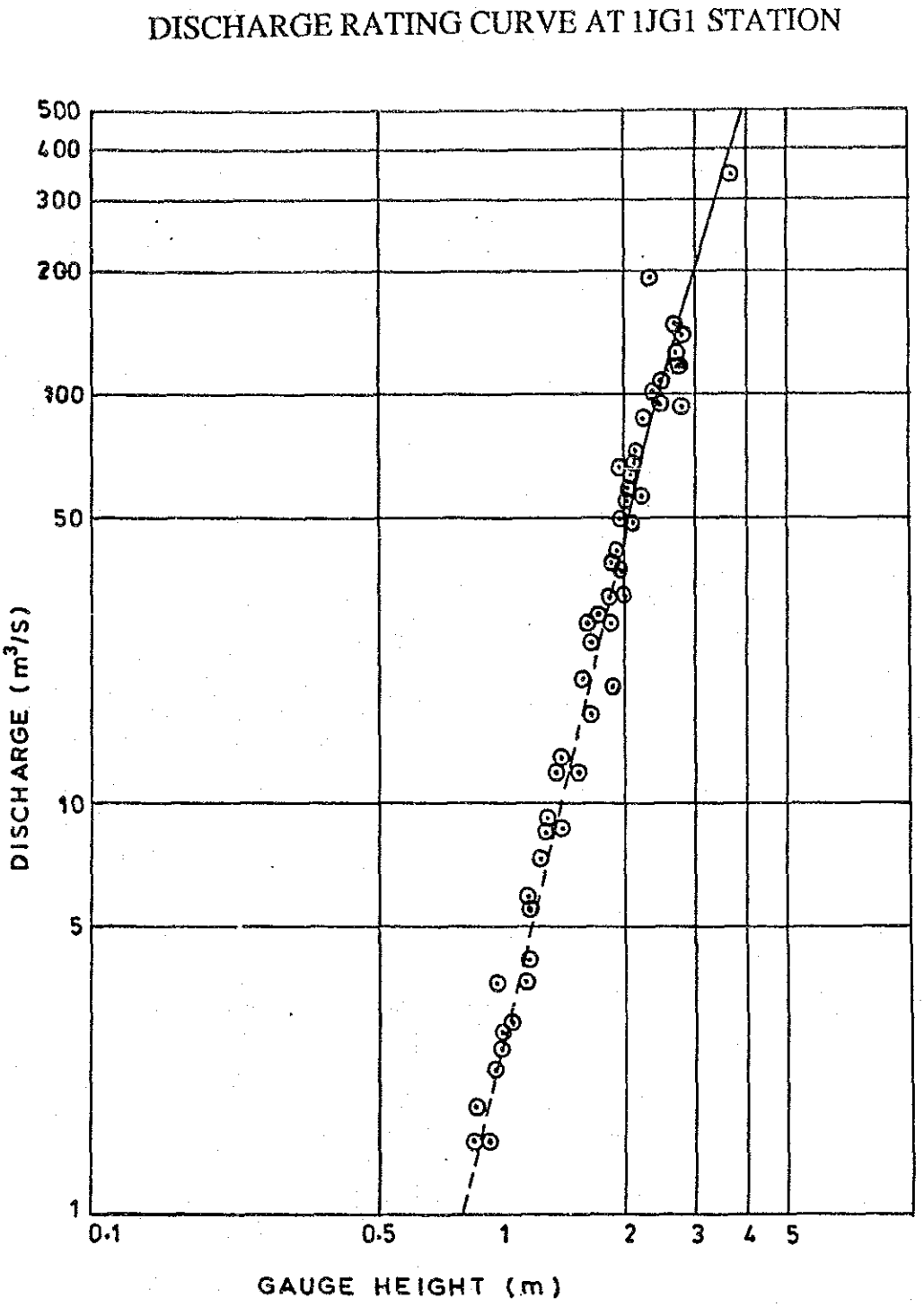

$H \leqq 1.97m \quad Q = 2.62 \times H^{4.20}$

$H > 1.97m \quad Q = 4.26 \times H^{3.48}$

図5.3　1JG1流量観測所における水位流量曲線

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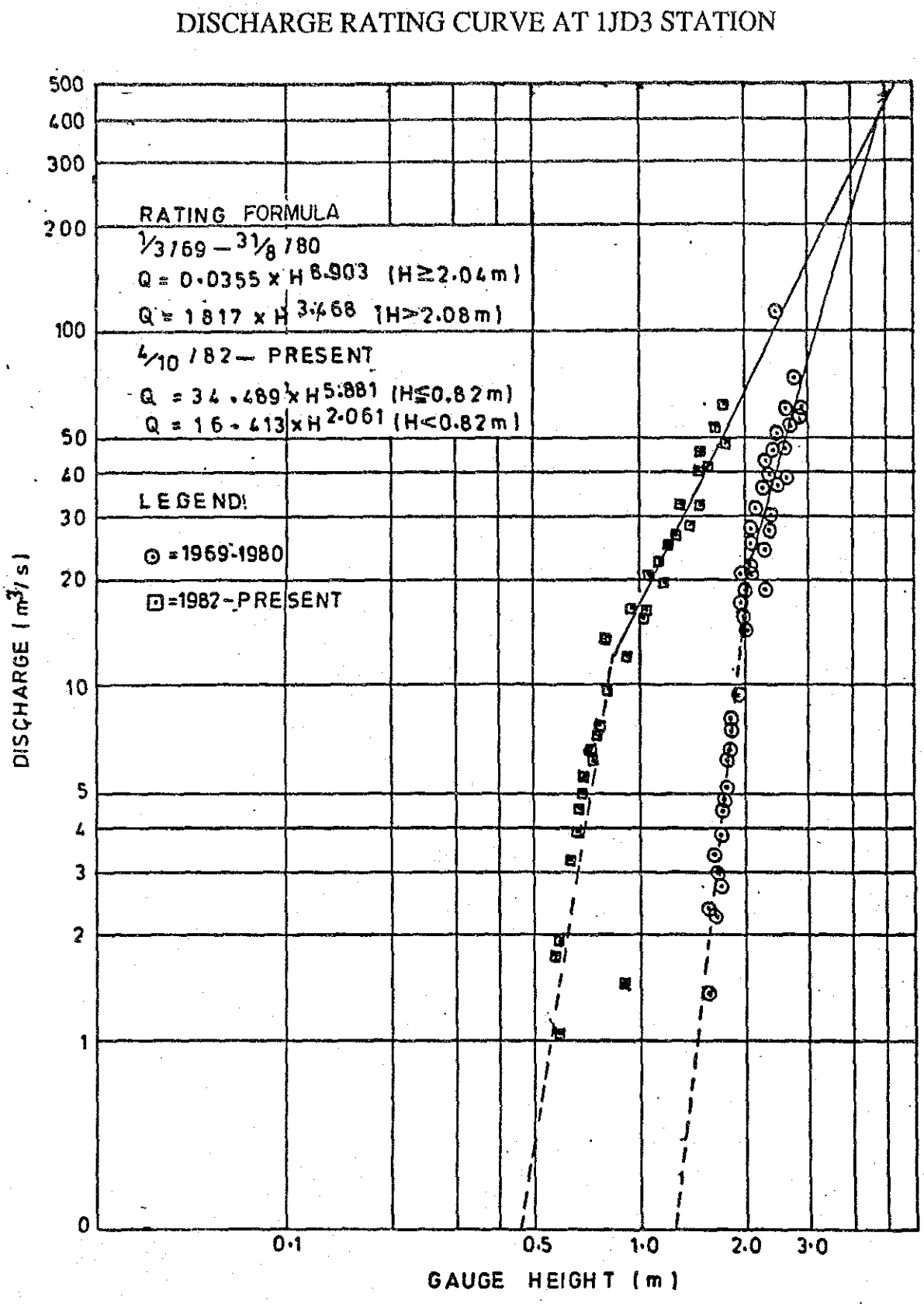

図5.4　1JD3流量観測所における水位流量曲線

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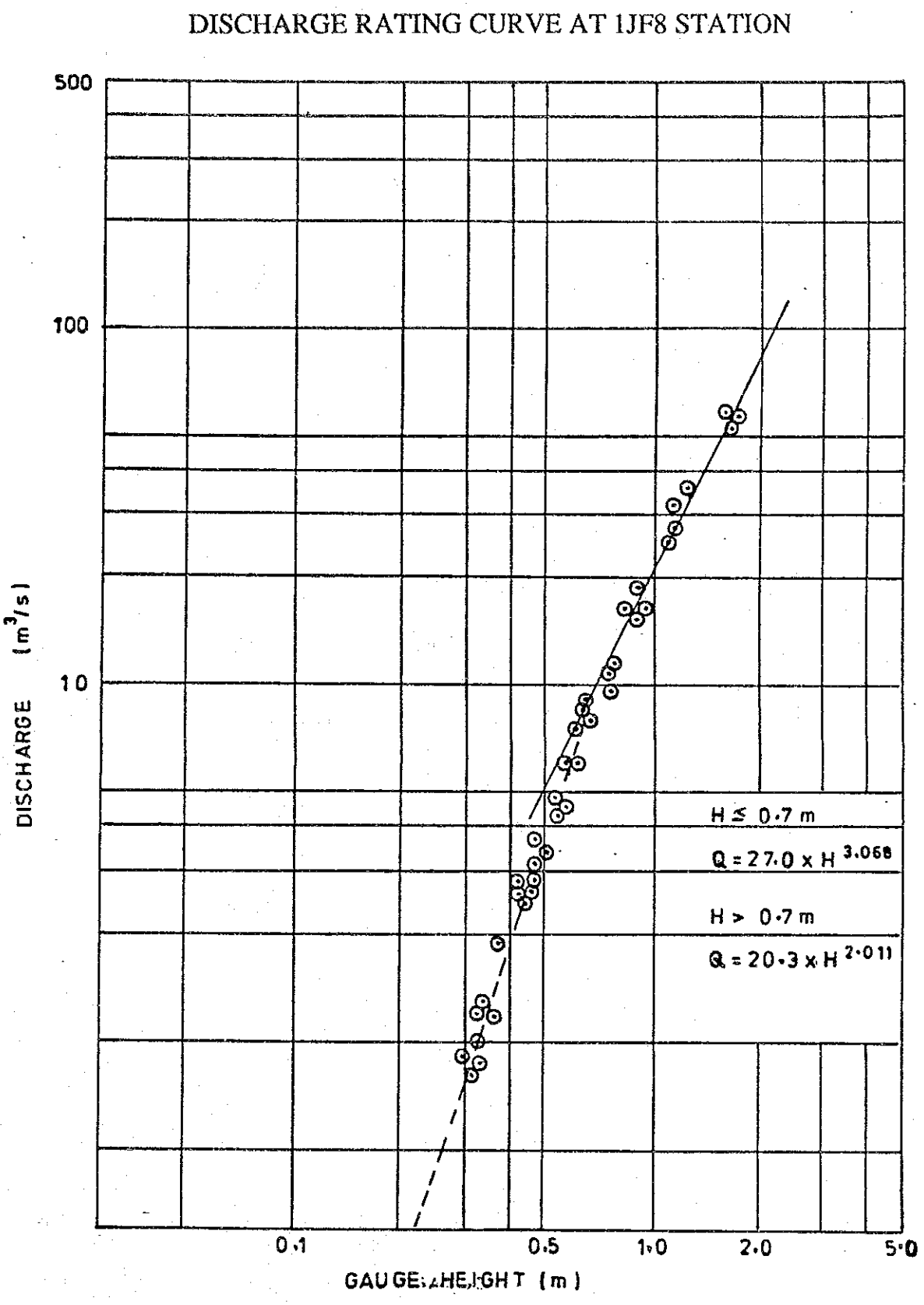

図5.5　1JF8流量観測所における水位流量曲線

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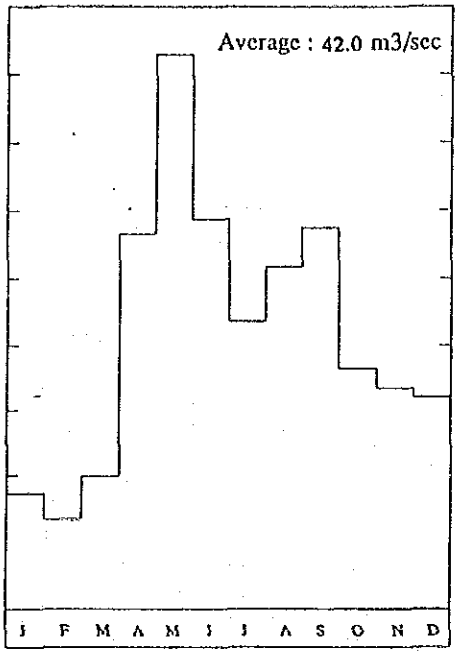
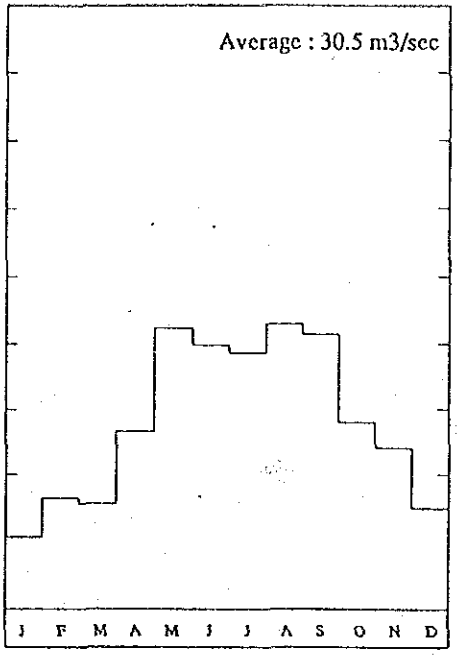
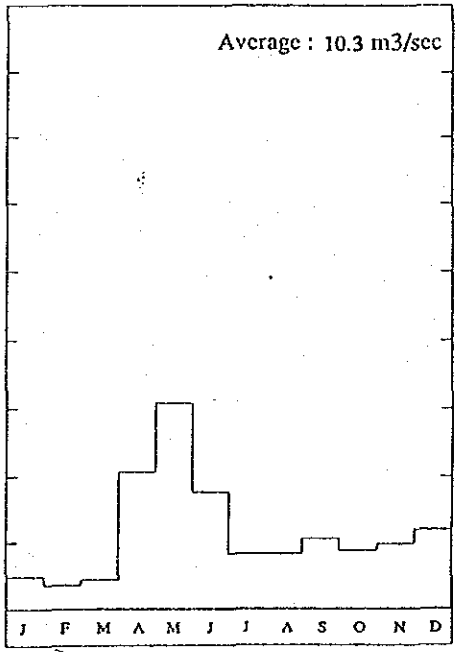
Station Name : 1JG1
River : Sondu/Miriu
C.A. : 3,260 km2
Data Period : 1946 - 1990



Station Name : 1JD3
River : Yurith
C.A. : 1,570 km2
Data Period : 1969 - 1989



Station Name : 1JF1/1JF8
River : Kipsonoi
C.A. : 1,523 km2/1,540 km2
Data Period : 1951 - 1961/1986 - 1989



Station Name : 1GD4
River : Nyando
C.A. : 2,520 km2
Data Period : 1956 - 1988

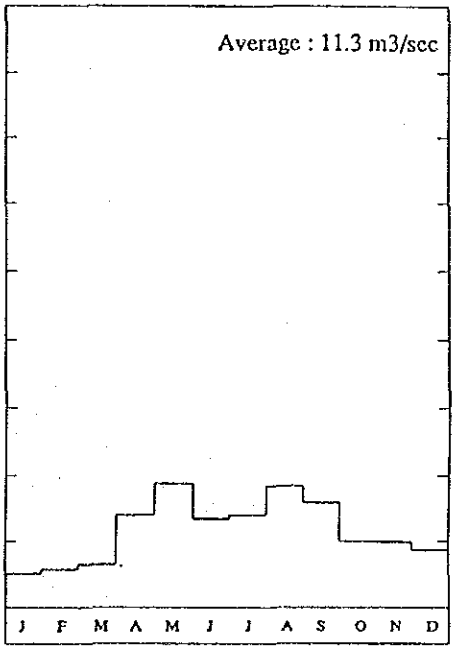


図5.6　各流量観測所における
月平均流量パターン

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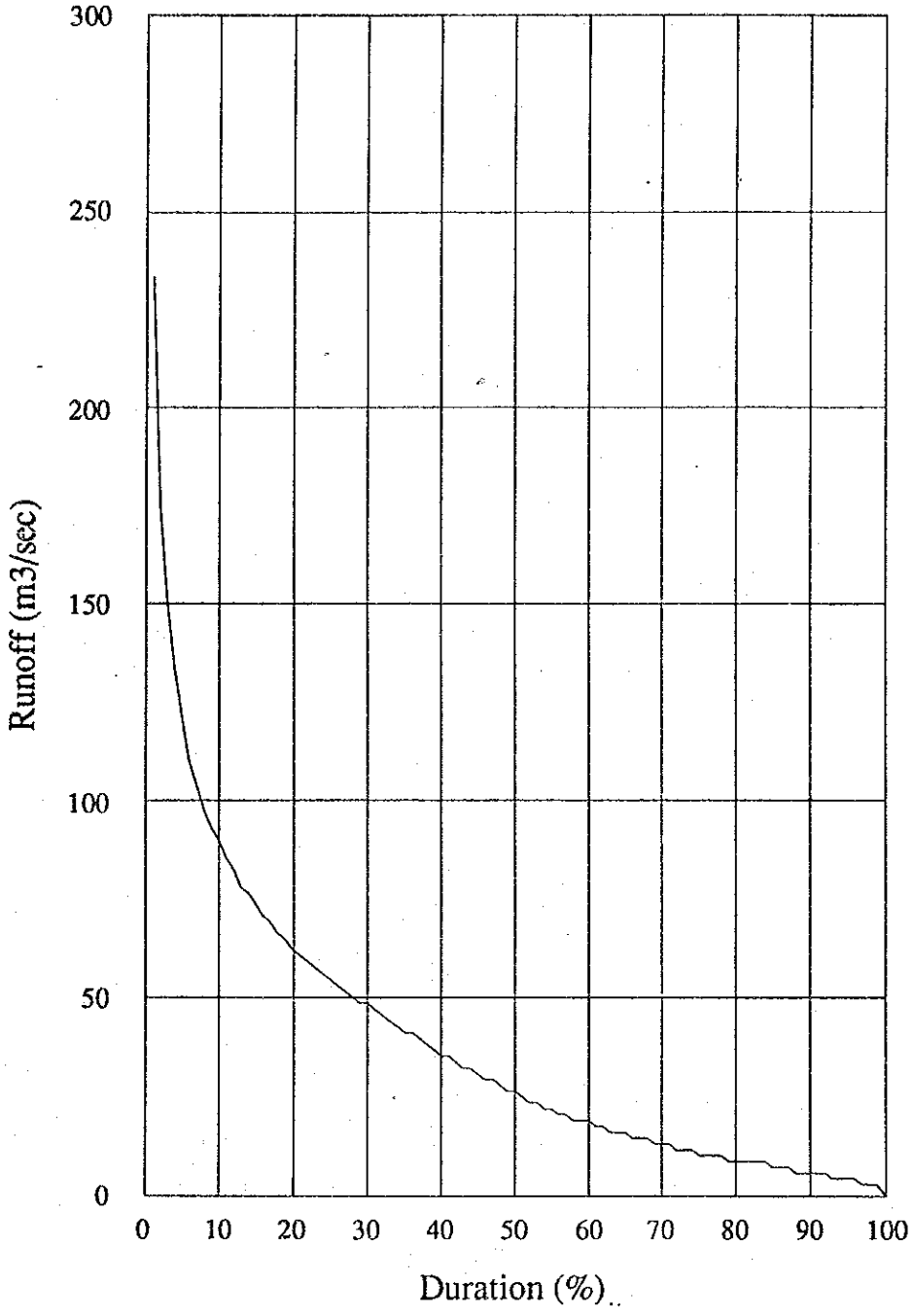

図5.7　シリーズ法によるマグワグワダム地点での流況図

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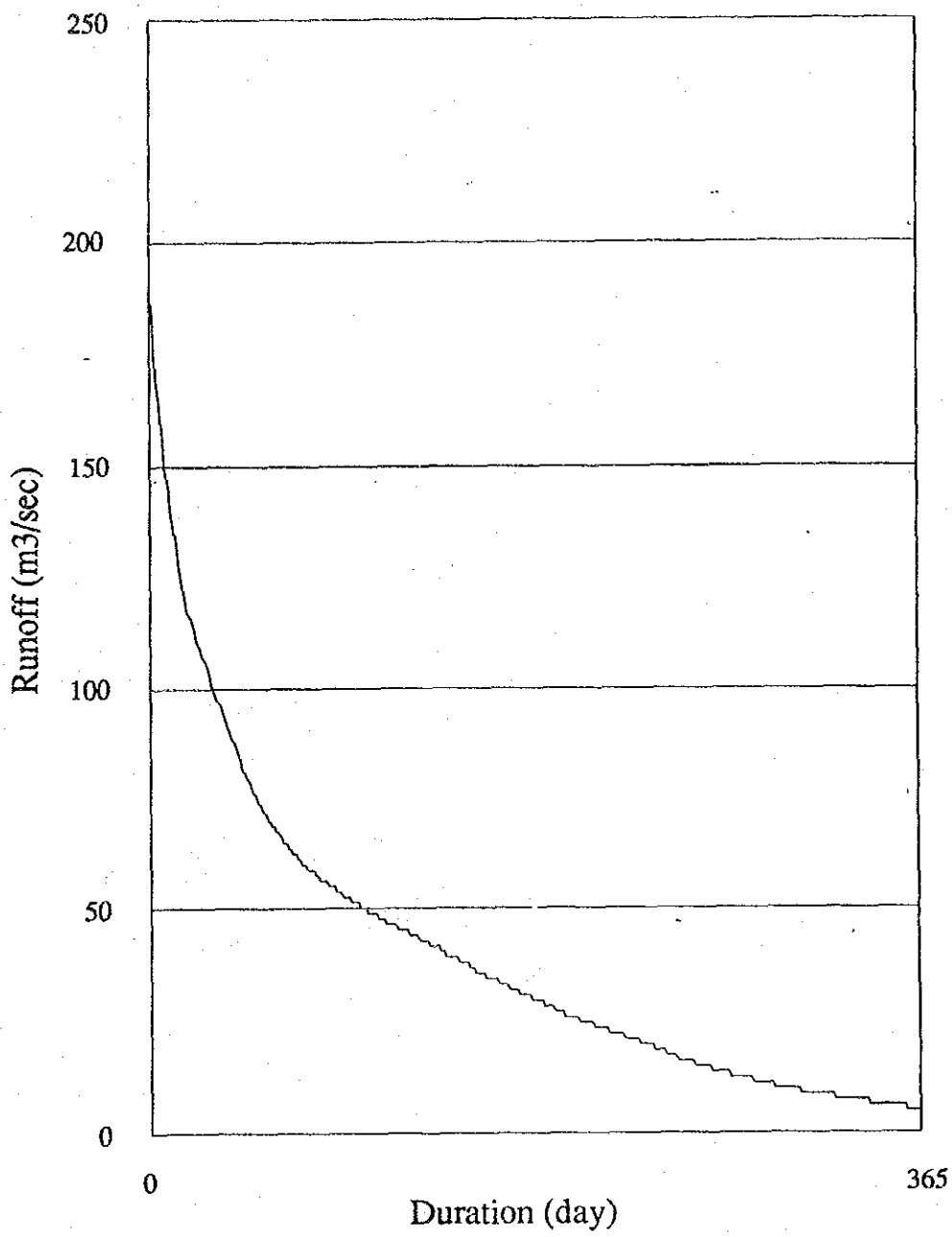

図5.8　パラレル法によるマグワグワダム地点での流況図

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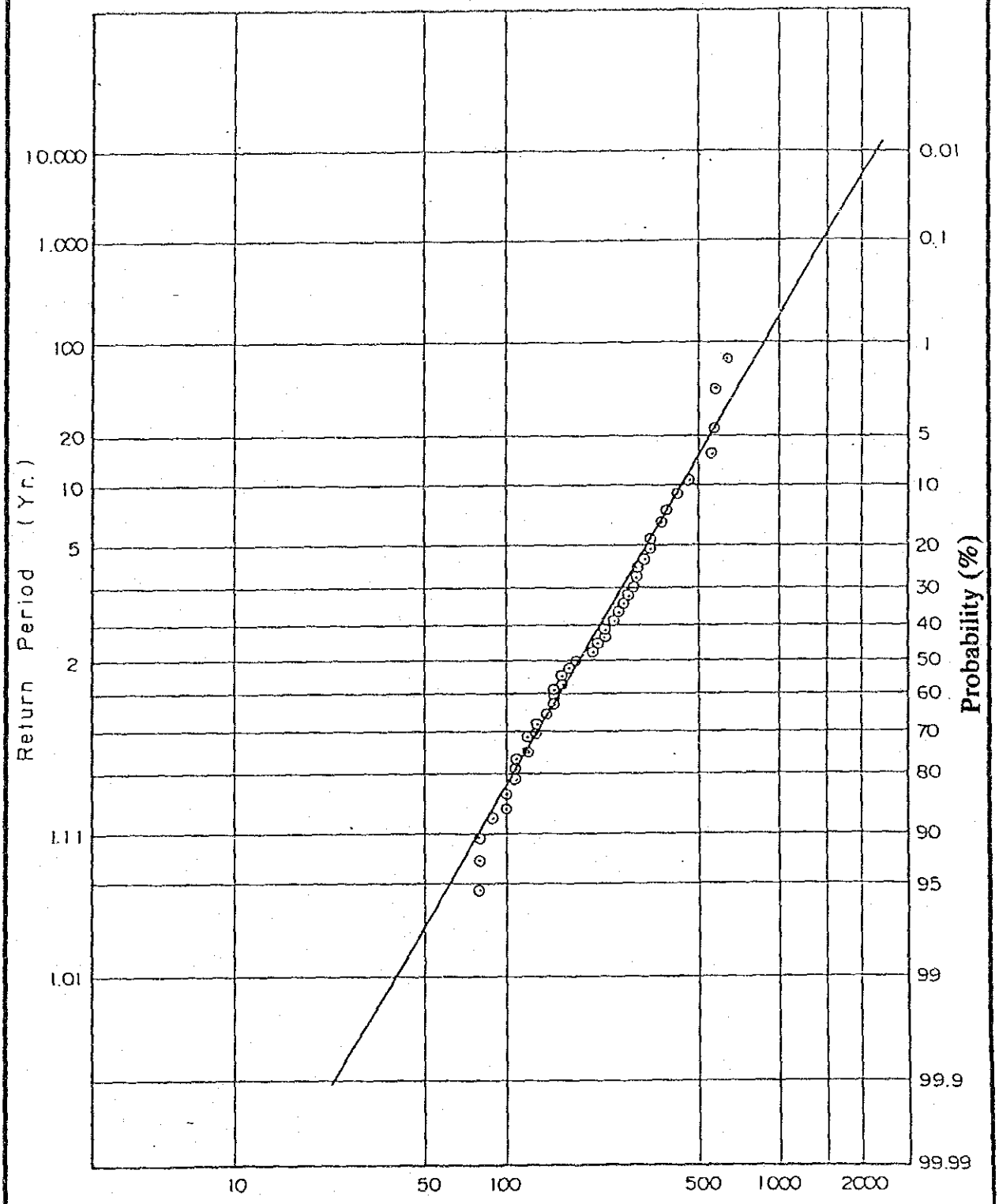

図6.1　1JG1における年最大洪水流量の確率頻度曲線

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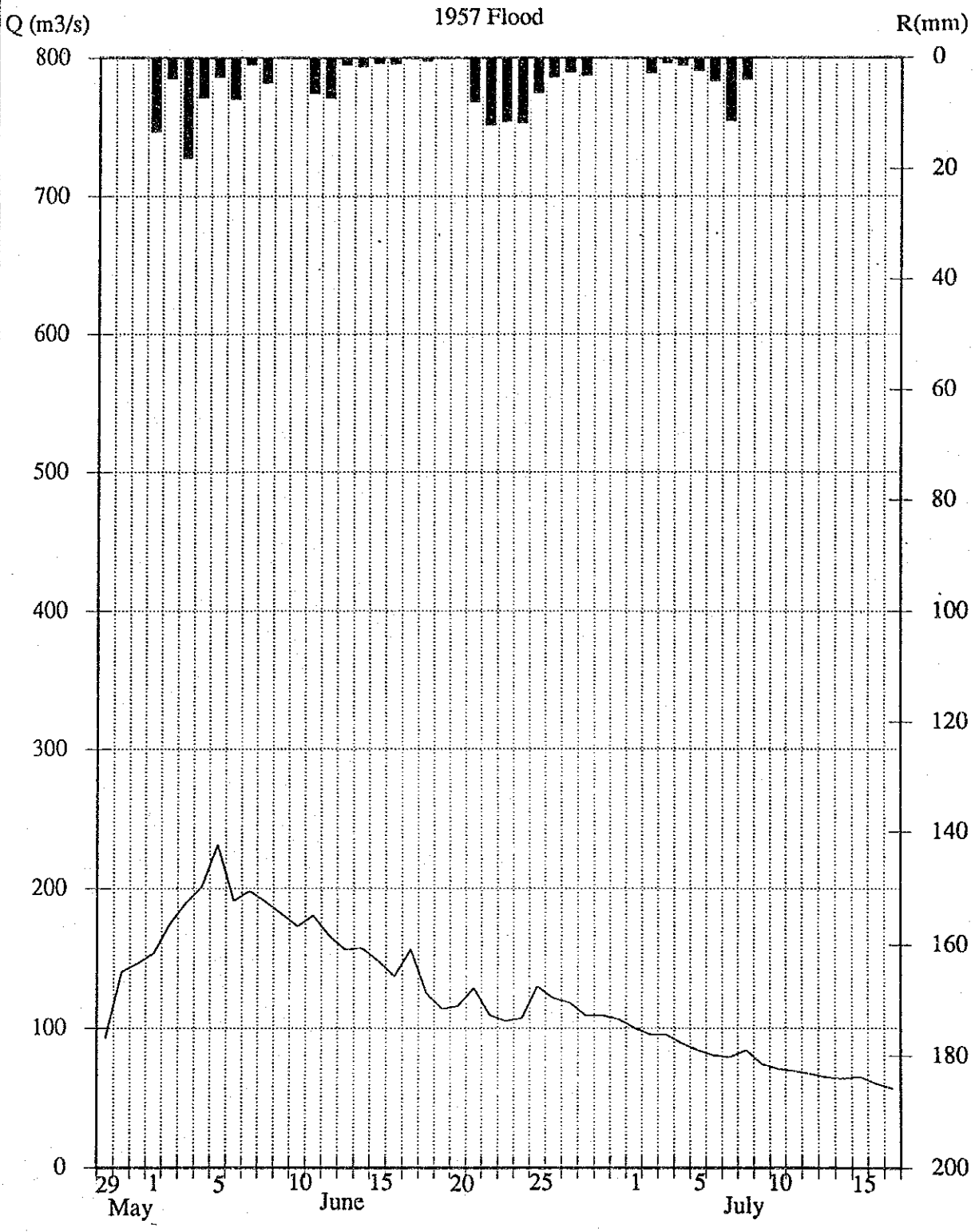

図 6. 2　1957年洪水のハイドログラフ

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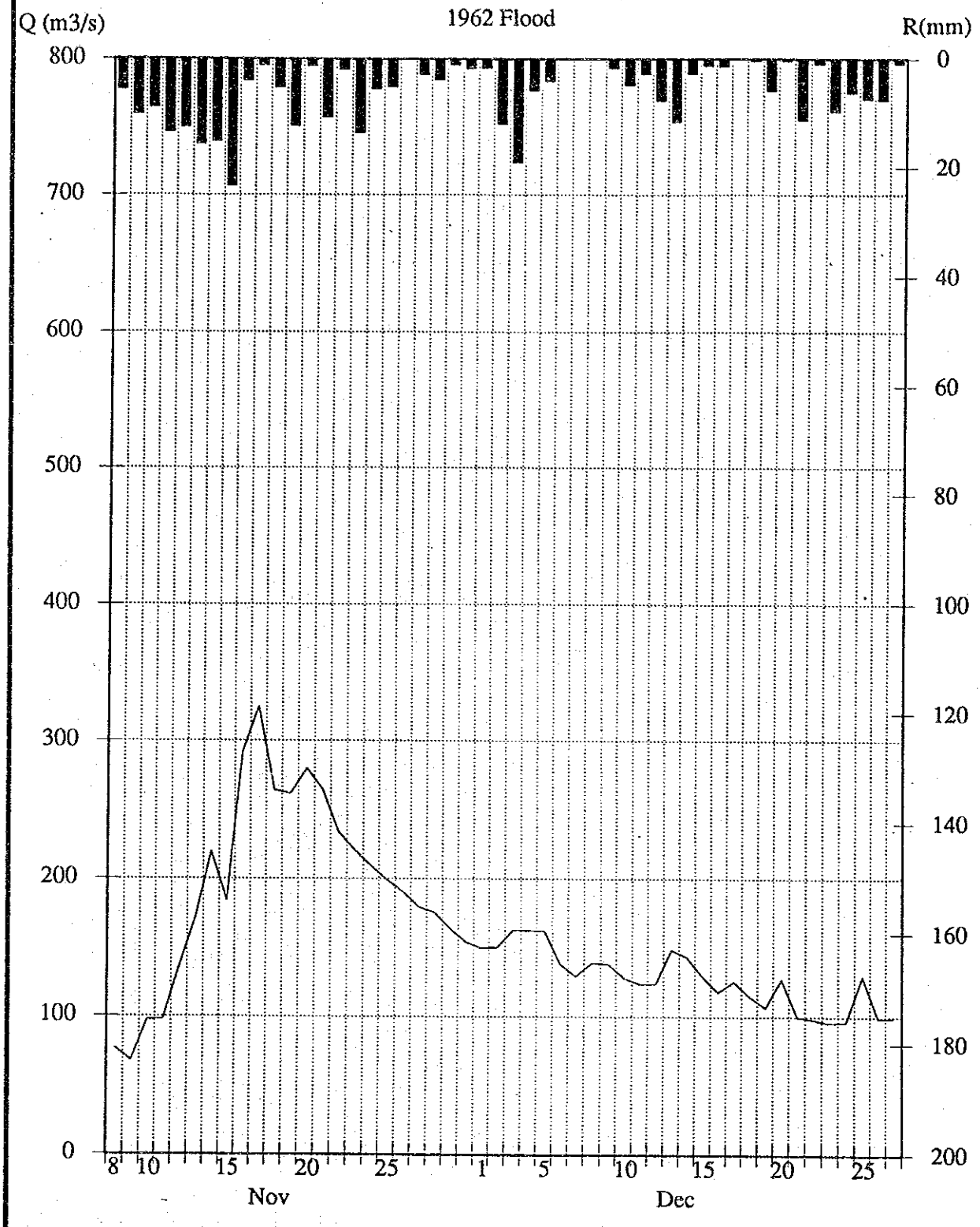

図 6. 3　1962年洪水のハイドログラフ

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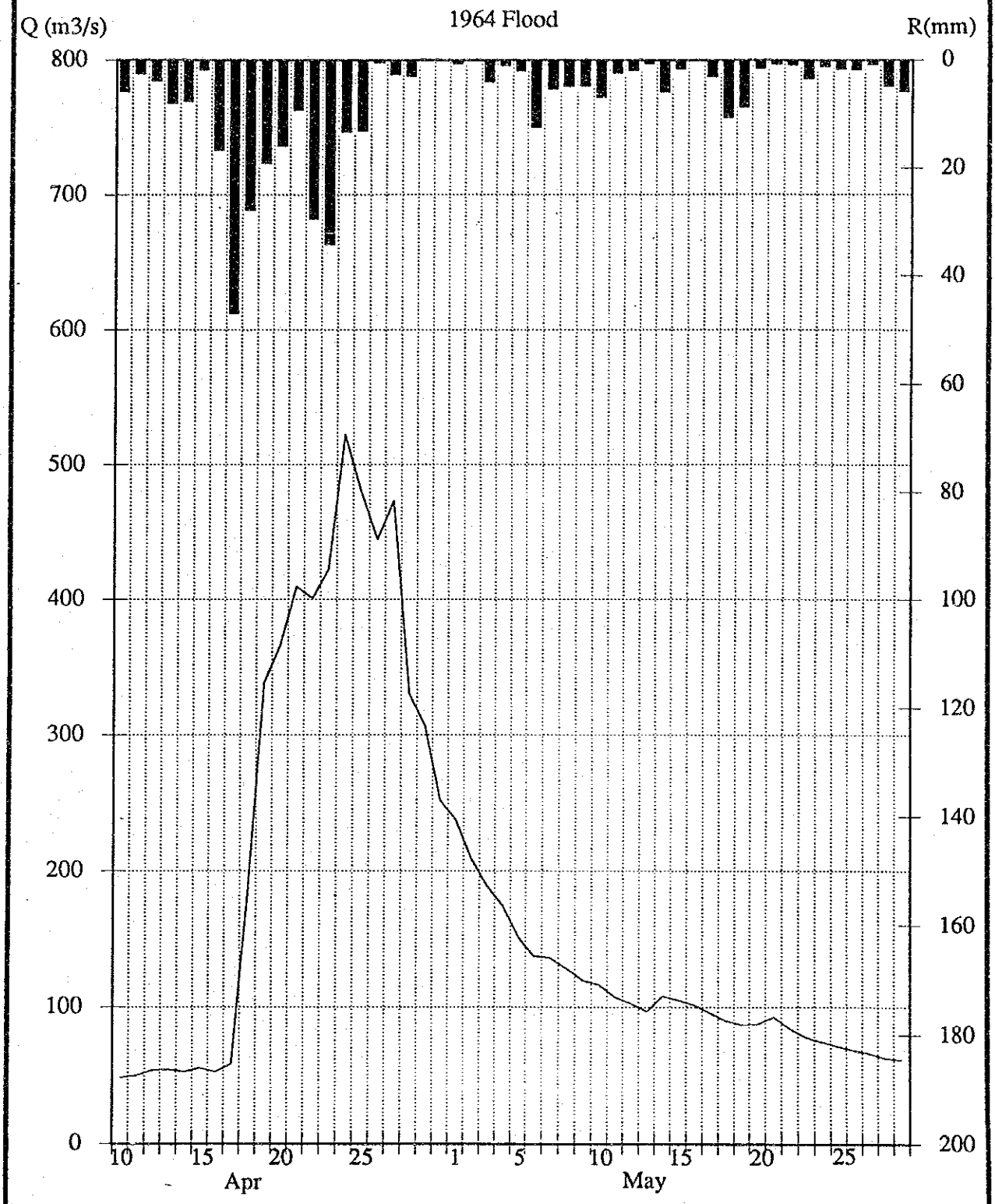

図6.4　1964年洪水のハイドログラフ

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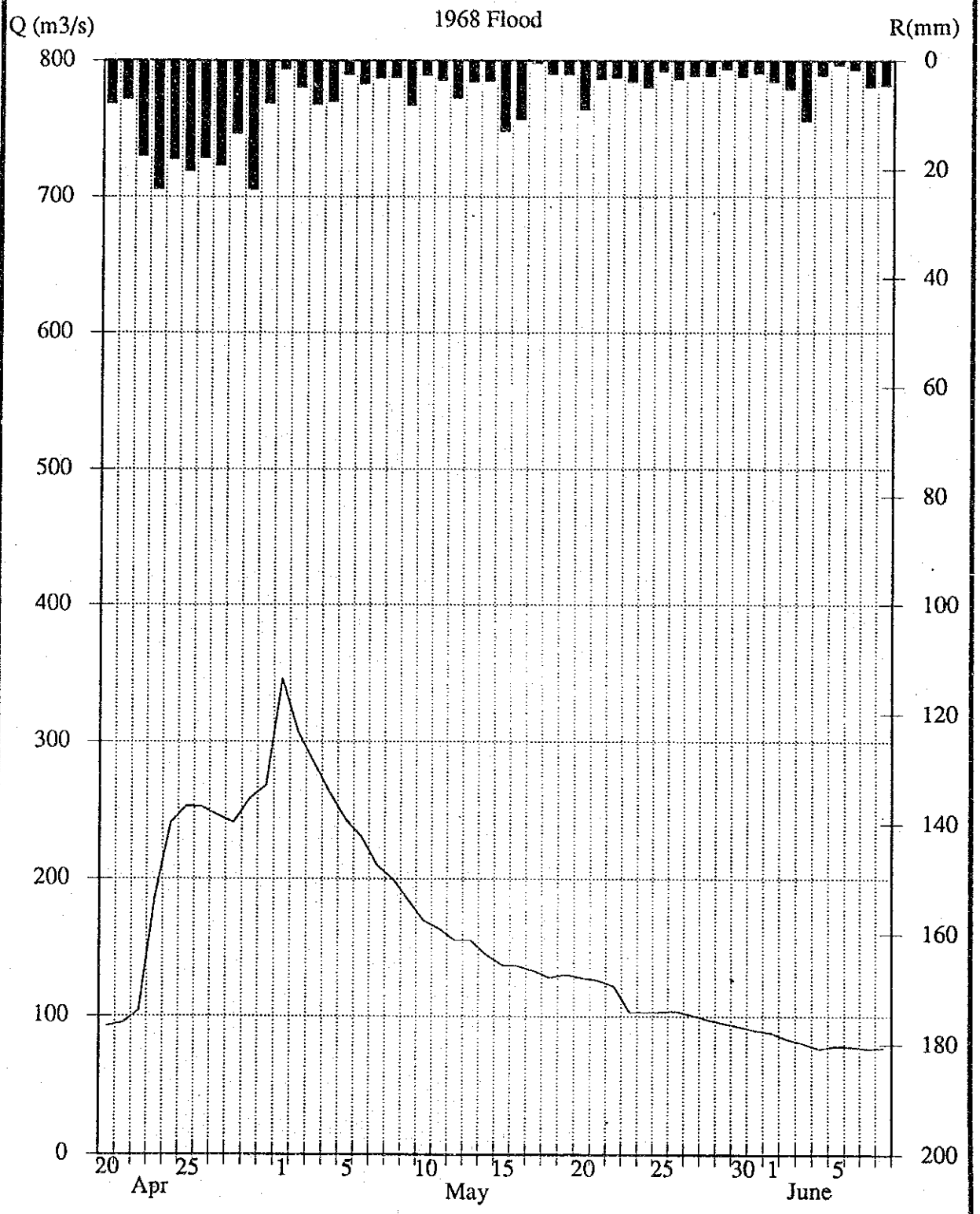

図6.5　1968年洪水のハイドログラフ

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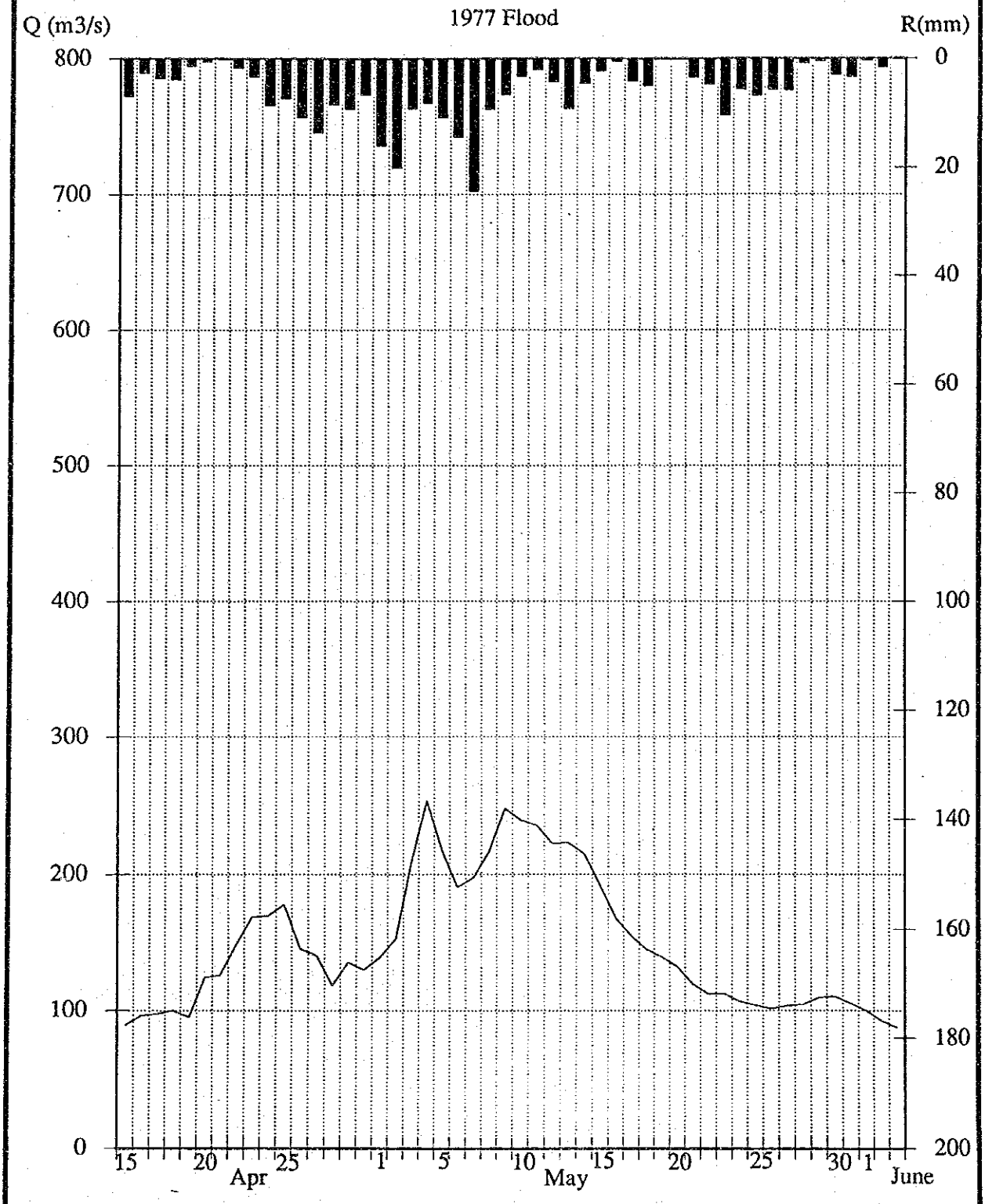

図 6. 6　1977年洪水のハイドログラフ

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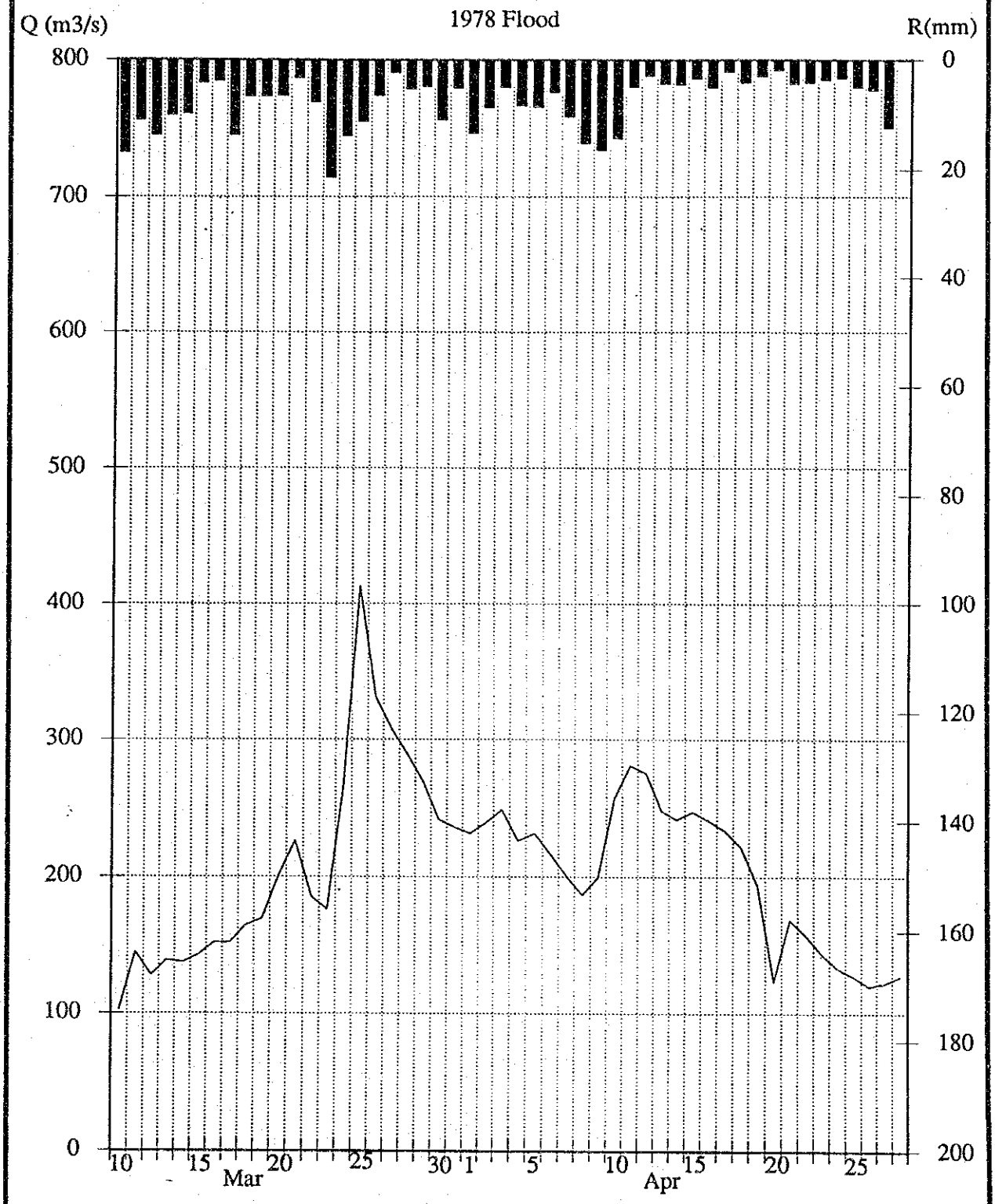

図 6. 7　1978年洪水のハイドログラフ

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