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**ROYAL OBSERVATORY, HONG KONG**

**TECHNICAL NOTE NO. 17  
(SECOND EDITION)**

**THE RAINFALL OF HONG KONG**

**BY  
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The Rainfall of Hong Kong  
(Second Edition)

General

In view of its geographical setting it is not surprising that Hong Kong receives most of its rainfall when the winds in the lower layers of the atmosphere are blowing from the south or east.

In the summer the atmosphere is nearly always conditionally unstable and much of the rain falls in the form of showers or thunderstorms due to local convection. The highest rainfall occurs near the tops of the large mountains, and there is a marked diurnal variation with a maximum in the morning.

When Hong Kong lies within the circulation of a tropical cyclone centred to the west or southwest of the Colony, showers are usually heavy and frequent. It has been estimated that nearly a quarter of the rainfall of Hong Kong may be associated with tropical cyclones.

In winter there is normally an anticyclone over China and the lower atmosphere is generally stable. At higher levels there is frequently a subsiding westerly current which is very dry. Rainfall is reduced to about a tenth of the summer average. Clouds tend to form in stratified sheets and precipitation usually occurs in the form of drizzle or light rain. At this time of year slightly more rain falls in the east of the Colony and there is practically no diurnal variation.

The Maximum Intensity of Rainfall

The most intense rainfall that occurs in Hong Kong is associated with thunderstorm clouds of great vertical extent. The rainfall associated with typhoons, although frequently heavy and prolonged, never quite reaches record intensities.

The highest instantaneous rates of rainfall recorded in each month on the Jardi rainfall intensity recorder at King's Park, from the time it was first established in June 1952 up to the end of 1963 are listed below:-

	<u>mm/hr</u>	<u>in/hr</u>	<u>Date</u>		<u>mm/hr</u>	<u>in/hr</u>	<u>Date</u>
Jan	94	3.70	3/1/56	Jul	217	8.54	25/7/53
Feb	136	5.35	7/2/59	Aug	320	12.60	7/8/55
Mar	144	5.67	27/3/53	Sep	307	12.09	30/9/58
Apr	151	5.95	8/4/54	Oct	195	7.68	13/10/58
May	253	9.96	31/5/58	Nov	106	4.17	10/11/53
Jun	242	9.53	12/6/59	Dec	72	2.84	30/12/55

The highest rates of rainfall sustained for various lengths of time at the Royal Observatory between 1884 and 1963 using hourly readings were:-

<u>Period</u>	<u>Maximum Rainfall</u>		<u>Rate</u>		<u>Date</u>
	mm.	in.	mm/hr	in/hr	
1 Year	3060.7	119.72	0.3	0.01	1889
1 Month	1240.5	48.84	1.7	0.07	May 1889
24 Hours	697.0	27.44	29.0	1.14	29-30/5/89
12 Hours	526.8	20.74	43.9	1.73	19/7/26
6 Hours	430.5	16.95	71.6	2.82	19/7/26
3 Hours	243.8	9.60	81.3	3.20	30/5/89
1 Hour	100.7	3.96	100.7	3.96	19/7/26

Some of these rates have been exceeded in different parts of the Colony. The highest for which records are available are:-

Period	Maximum Rainfall		Rate		Date	Time	Place
	mm.	in.	mm/hr	in/hr			
1 Month	1586.5	62.42	2.1	0.08	May 1957	---	Beacon Hill A
24 Hours	716.53	28.21	29.9	1.18	21/22 May 1957	8 a.m. -8 a.m.	Beacon Hill A
3 Hours	256.5	10.1	85.5	3.37	6 May 1960	0600 -0900	Tai Lam Chung

The Frequency of Occurrence of Heavy Rainfall

It is very difficult to interpret the record of an autographic rain-gauge over a short interval in very heavy rainfall. An analysis of the Royal Observatory autographic raingauge records in the 14 year period 1947 - 1960 gave the following results:-

Number of Occurrences in 14 years	Rainfall in the Period Specified Equalled or Exceeded					
	$\frac{1}{4}$ hr period	$\frac{1}{2}$ hr period	1hr period	2hr period	4hr period	8hr period
	mm	mm	mm	mm	mm	mm
1	39.6	52.2	95.1	125.9	146.2	184.7
2	34.6	52.0	91.5	125.8	145.7	173.7
3	33.3	50.5	85.0	114.0	138.0	171.0
4	30.9	50.0	84.6	111.2	130.2	170.9
5	28.9	49.8	68.8	102.2	125.2	164.1
10	27.3	43.9	64.9	81.3	106.7	122.2
20	23.7	37.3	50.9	69.8	82.9	101.9
30	21.4	33.8	46.3	60.5	75.6	92.0
40	20.3	30.2	43.4	54.3	65.7	85.1
50	19.6	28.1	40.5	50.3	62.7	80.7
60	18.9	27.0	38.1	47.1	60.3	
80	17.7	24.4	33.1	41.3		
100	16.3	23.2	30.8			
150	15.0	20.4				
200	13.6	18.0				
250	12.5	16.2				
300	11.8					
400	10.4					

The Variation of Rainfall from Year to Year

Table 1 shows the frequency of occurrence of months with rainfall in specified ranges during 72 years. The most noticeable feature is the very large variability of rainfall in May and to a lesser extent in October. There is very little persistence and no well marked periodicities in the monthly rainfall amounts although L. Starbuck showed that the wettest years often start with subnormal rainfall in January and February.

TABLE I

Rainfall Distribution at Royal Observatory 1884 - 1962

Range                      Number of Months in 72 years with rainfall in the Specified Range

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
mm. 0 - 4.9	15	9	3	-	-	-	-	-	-	8	17	16
5.0 - 9.9	8	6	5	-	-	-	-	-	-	2	8	10
10.0 - 14.9	5	8	3	-	-	-	-	-	-	5	5	10
15.0 - 19.9	7	2	4	-	-	-	-	-	1	3	4	9
20.0 - 24.9	5	2	2	-	-	-	-	-	-	3	3	6
25.0 - 29.9	6	4	2	-	1	-	-	-	-	1	3	2
30.0 - 34.9	3	4	2	1	1	-	-	-	-	2	4	5
35.0 - 39.9	3	5	5	1	-	-	-	-	-	3	3	2
40.0 - 44.9	1	1	3	1	-	-	-	1	-	3	1	-
45.0 - 49.9	3	3	1	7	2	-	-	-	1	4	3	4
50.0 - 59.9	5	3	4	6	1	1	-	-	-	4	3	-
60.0 - 69.9	5	9	9	7	2	-	-	-	2	2	3	1
70.0 - 79.9	2	1	3	4	1	1	-	-	1	4	2	2
80.0 - 89.9	1	5	4	3	-	-	-	1	1	4	-	-
90.0 - 99.9	-	2	6	2	2	-	-	-	3	2	1	-
100.0 - 119.9	2	4	6	8	3	1	1	2	4	2	2	4
120.0 - 139.9	-	2	3	4	3	4	1	2	3	2	6	1
140.0 - 159.9	-	-	2	6	4	2	6	4	6	5	1	-
160.0 - 179.9	-	-	1	5	5	2	4	2	4	3	1	-
180.0 - 199.9	-	-	1	2	5	2	4	-	1	1	1	-
200.0 - 249.9	1	2	1	7	12	4	6	6	4	4	1	-
250.0 - 299.9	-	-	2	4	5	8	7	9	12	1	-	-
300.0 - 349.9	-	-	-	1	4	6	10	10	8	-	-	-
350.0 - 399.9	-	-	-	1	5	10	6	10	3	-	-	-
400.0 - 449.9	-	-	-	2	3	6	1	4	5	1	-	-
450.0 - 499.9	-	-	-	-	3	5	9	4	5	2	-	-
500.0 - 599.9	-	-	-	-	4	9	8	8	5	-	-	-
600.0 - 699.9	-	-	-	-	2	7	5	4	-	1	-	-
700.0 - 799.9	-	-	-	-	1	1	4	4	2	-	-	-
800.0 - 999.9	-	-	-	-	2	3	-	1	1	-	-	-
> 1000	-	-	-	-	1	-	-	-	-	-	-	-
Normal Rainfall	31.7	46.9	72.2	135.8	292.7	401.2	371.7	370.8	278.8	99.2	43.1	24.9

## Distribution of Rainfall in Hong Kong

In the post-war years the number of raingauges operated throughout the Colony has steadily increased. In 1952 there were 27 raingauges in operation and the number had increased to 94 by 1962. In order to prepare mean rainfall maps of the Colony a considerable number of missing records had to be estimated and unreliable readings had to be investigated.

Two basic methods of estimation of missing records have been used. If the records of a station were almost complete, missing records were estimated directly from monthly rainfall maps or from the rainfall at nearby stations during the missing period. The figures obtained from the neighbouring stations were adjusted if the missing station was found at other times to have significantly different rainfall. However, there is an important group of monthly raingauges around Plover Cove that have only been operating for 3 years. Ten of the nearest and most reliable stations were chosen as controls and the mean rainfall of these stations was calculated both for the three year and for the eleven year period. The ratios between these means was calculated for each month and the figures from the group of monthly raingauges were then adjusted in the same ratios. A similar procedure was applied to stations that had been operating for four years.

The figures in Table II are either the actual or the estimated mean rainfall in millimetres for the eleven years 1952-1962. The number of months on which the estimate is based are given in column 4. It is interesting that the mean annual rainfall of all 94 stations is 2271 mm. which is very close to the mean figure from the Royal Observatory of 2205 mm. This shows that on average the Royal Observatory is reasonably representative of the rest of the Colony.

## Inaccuracies in Rainfall Records

There are several possible causes of inaccuracies in the rainfall readings in Hong Kong and the majority probably lead to an underestimate of the true rainfall.

The terrain of Hong Kong is such that it is almost impossible to find sites that are completely flat and free from the effects of sheltering. Moreover in strong winds some of the rain can be deflected upwards by the body of the raingauge itself. This effect is enhanced if the gauge is mounted on a massive concrete pillar although the design of some of the pillars is such as to allow some rain to splash off the pillar into the raingauge. The primary consideration in the siting of the raingauges has been to choose sites that would be convenient for the observers. The result is that the majority of the gauges are at comparatively low levels near centres of population and the network is probably not representative of the reservoir catchments which include much higher ground.

There are various instrumental errors. Autographic raingauges miss most of the rain that falls during the syphoning period. For example some gauges take about 15 seconds to syphon and syphon every 5 mm of rainfall. If rain were falling steadily at 100 mm per hour the loss from such a gauge would amount to about 8%. The containers of Snowden type gauges will only hold about six inches of rain after which they overflow. Many of the raingauges are only read once per day so that there are occasions when some water is lost. The monthly raingauges in use in Hong Kong are fitted with ordinary domestic taps and although these proved satisfactory during a trial period there may be a tendency to drip after a few years.

Some of the raingauges are installed at institutions where there is a comparatively rapid change of personnel and there have been unfortunate periods when certain raingauges have been neglected completely or incorrect returns have been made.

Another source of error arises because it is not always possible to read gauges at exactly the same time and the more remote monthly gauges cannot always be read on the first day of the month, particularly on occasions of typhoons, or public holidays.

Finally, there are errors introduced in the process of estimating for missing data. These are probably the most serious of all, particularly in the case of gauges that have only been operating for 3 or 4 years. If one particularly heavy thunderstorm affects these stations and misses the control stations, or vice versa, the difference is exaggerated in the process of estimation. This may account for the high figures obtained for the month of April by some of the raingauges around Plover Cove.

In order to decide whether the eleven years chosen for the rainfall maps are typical of a longer period it is interesting to compare the mean rainfall at the Royal Observatory for these 11 years with the mean rainfall over a 70 year period.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
11 Year	25	65	62	125	292	440	296	373	422	44	47	15	2205 mm
70 Year	32	47	72	136	293	401	372	371	279	99	43	25	2169 mm

These figures show that the eleven-year mean is quite close to the long period mean except that the maps for July and October probably show too little rainfall and the map for September too much.

## MEAN RAINFALL FOR THE 11 YEARS 1952-1962

Number on Key Chart	Location	Map Ref.	Height ft.	No. of months data used	Jan mm.	Feb mm.	Mar mm.	Apr mm.	May mm.	Jun mm.	Jul mm.	Aug mm.	Sep mm.	Oct mm.	Nov mm.	Dec mm.	Year mm.
1	Royal Observatory	KV086692	105	132	25	65	62	125	292	440	296	373	422	44	47	15	2205
2	Hong Kong Airport	KV115722	12	132	22	58	56	121	325	476	319	400	443	38	47	12	2316
3	Waglan Island	KV217557	170	130	12	35	48	96	220	207	213	252	212	27	21	8	1351
4	North Point Generating Station	KV108681	76	127	21	61	55	124	303	383	280	362	409	39	47	10	2096
5	Tai Tam Reservoir	KV123642	510	131	22	63	72	140	322	427	362	457	473	48	55	19	2460
6	Tai Tam Byewash Reservoir (Recording)	KV121642	460	131	19	57	67	131	305	400	344	440	452	47	52	17	2330
7	Tai Tam Tuk Dam	KV134627	180	131	21	58	63	124	285	381	304	404	418	44	46	18	2164
8	Mong Nai Chung Reservoir	KV106641	790	130	17	53	59	117	291	436	366	466	472	48	49	10	2383
9	Aberdeen Upper Reservoir	KV075642	390	132	18	58	62	111	263	349	314	401	439	38	48	13	2113
10	Aberdeen Lower Reservoir (Recording)	KV072638	260	131	16	57	61	111	257	328	307	382	405	31	42	10	2007
11	Pok Fu Lam Reservoir	KV046652	570	130	18	55	57	104	249	324	281	334	370	34	36	12	1872
12	Jubilee Dam	KV061779	680	132	27	72	68	135	364	501	357	400	442	49	48	15	2478
13	Jubilee Dam (Recording)	KV061777	655	132	26	70	67	131	348	479	342	385	431	48	47	15	2389
14	Beacon Hill No.1	KV073750	500	131	26	72	69	140	364	516	309	408	417	42	45	18	2423
15	Beacon Hill No.2	KV086753	500	128	26	68	69	137	368	516	310	411	404	40	39	16	2404
16	Kowloon Byewash Reservoir	KV061744	340	130	17	51	47	104	276	418	259	339	318	26	30	10	1895
17	Yuen Long (Below Intake)	HQ084825	100	130	16	56	56	114	248	314	221	226	280	20	28	19	1598
18	Fanling Golf Club	KV038908	70	131	19	68	64	165	332	435	307	357	416	35	40	9	2247
19	Tin Fu Tsai	JV971796	640	94	23	74	64	136	349	410	343	311	328	26	47	18	2129
20	Tsing Lung Tau	JV943784	300	88	29	75	66	145	340	422	347	324	384	27	45	19	2222
21	Tai Lam Chung	JV935773	100	94	25	73	62	143	339	410	365	305	364	25	44	16	2170
22	Wong Shiu Chi School, Tai Po	KV086852	90	25	20	69	61	213	445	559	279	380	413	46	45	15	2544
23	Tai Lam Chung (Recording)	JV930773	150	86	23	68	64	124	303	380	341	280	334	26	40	16	1999
24	Botanic Gardens	KV066665	350	130	23	68	70	134	285	426	299	360	417	38	48	14	2182
25	Silver Mine Bay Agricultural Station	HQ074659	120	132	33	82	80	126	322	405	356	330	380	26	64	23	2226
26	Tai Po Police Station	KV085852	130	95	22	68	55	143	333	512	324	326	375	32	39	19	2268
27	Happy Valley Race Course	KV093657	15	132	21	65	64	121	300	412	318	417	494	49	54	16	2330
28	Cheung Chau Police Station	JV936590	50	127	19	63	52	103	261	364	258	284	270	22	33	13	1739
29	Sha Tau Kok Police Station	KV128952	115	102	21	60	65	145	377	414	303	302	435	31	47	15	2214
30	Sam Yuk Middle School, Clear Water Bay	KV202696	350	111	29	58	93	150	396	401	336	379	442	39	92	16	2430

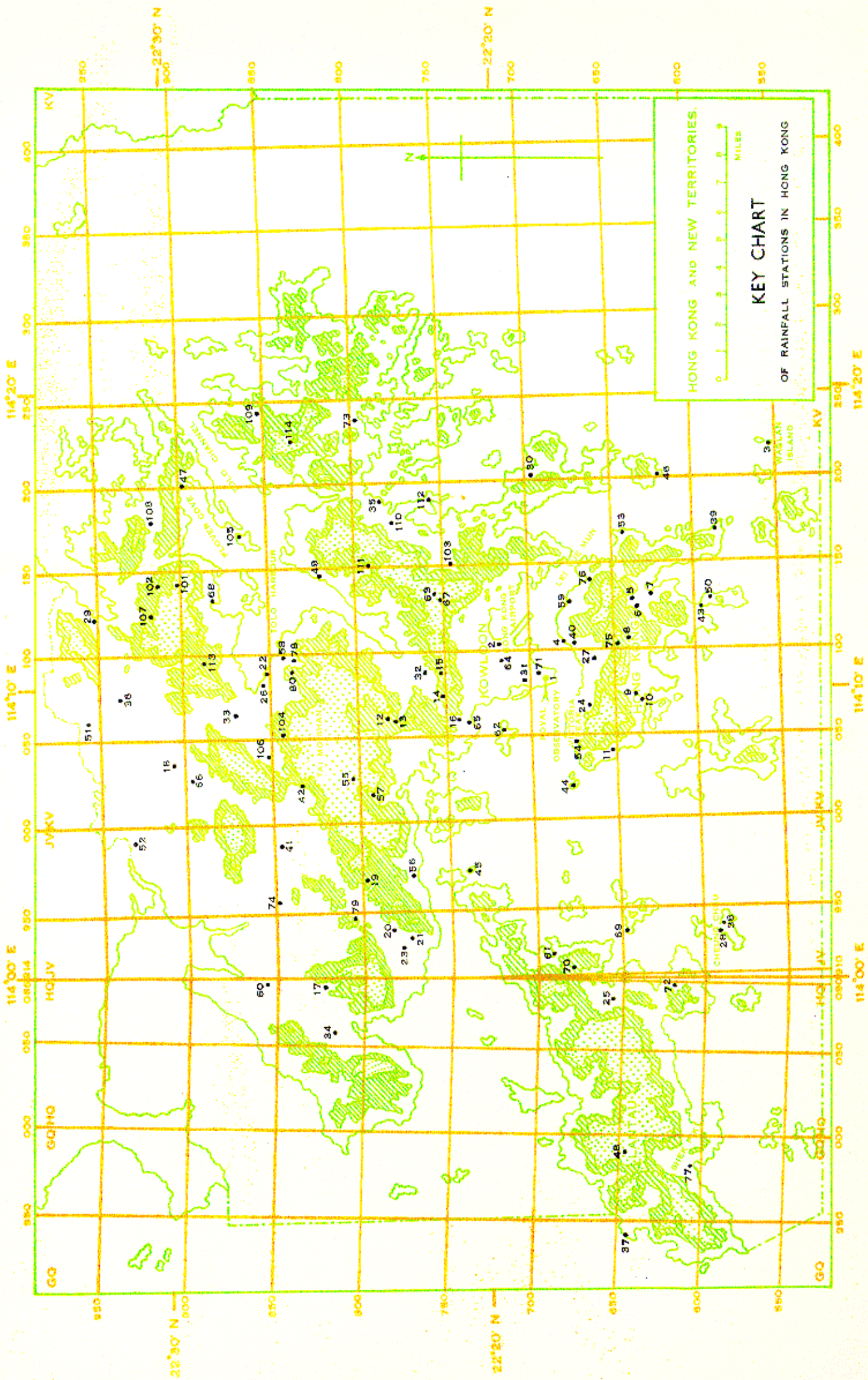
Number on Key Chart	Location	Map Ref.	Height ft.	No. of months data used	Jan mm.	Feb mm.	Mar mm.	Apr mm.	May mm.	Jun mm.	Jul mm.	Aug mm.	Sep mm.	Oct mm.	Nov mm.	Dec mm.	Year mm.
31	King's Park Radiosonde Station	KV084703	210	132	25	68	64	125	289	429	293	385	425	51	50	15	2219
32	Shatin Agricultural Station	KV084760	10	127	19	59	45	116	700	445	313	372	389	42	42	11	2152
33	Tai Po Agricultural Station	KV065865	30	108	24	72	63	147	384	463	329	342	433	40	46	18	2368
34	Castle Peak Agricultural Stn.	HQ058815	50	124	26	62	57	123	271	323	276	258	286	24	40	21	1766
35	Sai Kung Police Station	KV188781	35	108	25	63	89	128	275	413	346	390	417	44	56	15	2259
36	Ta Kwu Ling Agricultural Stn.	KV078939	20	29	8	77	84	271	282	323	294	370	499	23	36	16	2282
37	Tai O	GQ938642	300	48	34	53	40	130	214	303	249	194	237	27	38	19	1540
38	Cheung Chau Meteorological Stn.	JV938588	124	119	16	57	64	120	268	348	275	326	301	28	37	12	1851
39	Cape D'Aguiar	KV169588	170	127	15	42	58	128	265	309	299	354	363	29	34	8	1905
40	Queen's College	KV103668	5	103	23	63	60	123	293	402	283	390	438	47	44	15	2181
41	Shek Kong Airfield	JV987844	31	82	19	72	60	117	341	409	316	323	374	37	34	15	2117
42	Shek Kong Village	KV022834	384	114	24	74	64	137	374	470	394	381	451	56	48	17	2488
43	St. Stephen's College, Stanley	KV127596	100	113	19	48	62	120	253	320	281	374	426	17	37	11	1967
44	Green Island Lighthouse	KV023674	250	127	20	61	56	96	244	358	254	324	306	33	30	13	1795
45	Tang Lung Chau Lighthouse	JV973736	110	127	22	62	55	125	292	386	298	315	320	28	35	12	1950
46	Tethong Point Lighthouse	KV202619	50	120	20	63	85	129	283	292	280	357	423	39	52	16	2038
47	Sham Kwong School, Tai Kau	KV201899	25	29	43	79	72	201	436	522	302	446	364	25	53	23	2565
48	Ngong Ping	GQ994644	1450	88	30	71	78	126	292	394	340	315	370	42	75	32	2165
49	Ma On Shan Iron Mine	KV148820	70	106	29	68	70	150	363	502	322	383	452	48	63	24	2476
50	H.M. Prison, Stanley	KV131590	120	103	20	48	69	109	253	306	273	361	438	14	43	11	1944
51	Ta Kwu Ling Police Station	KV064956	20	99	17	59	58	138	259	396	294	283	368	29	33	12	1946
52	Lok Ma Chau Police Station	JV992925	170	100	23	60	53	115	278	304	266	296	348	26	35	16	1820
53	Cape Collinson Lighthouse	KV171646	160	107	24	54	95	135	335	332	274	318	381	28	30	15	2021
54	University of Hong Kong	KV048673	240	93	24	62	65	137	277	413	301	366	441	45	52	16	2195
55	Tai Mo Shan Agricultural Stn.	KV031808	2100	48	26	101	104	173	580	573	458	510	553	68	54	29	3228
56	Sham Tseng Brewery	JV971766	15	37	25	67	55	119	415	448	305	280	413	17	38	13	2195
57	Tai Mo Shan Forestry Outpost	KV023792	1350	101	23	72	63	131	400	462	328	367	426	48	39	13	2372
58	Wild Ridge, Tai Po Kau	KV099837	344	48	40	80	79	152	470	450	292	361	487	25	48	25	2507
59	Taikoo Docks	KV128674	100	35	25	90	72	140	363	483	371	407	507	44	70	20	2591
60	Ping Shan	HQ086856	15	22	21	59	56	117	258	317	247	241	281	22	34	20	1672
61	Tai Pak Hill Cattle Holding, Lantau Island	JV923688	30	42	21	56	51	104	273	370	277	248	348	23	46	24	1839
62	Stonecutters Island Wireless Stn	KV056713	50	47	13	77	64	135	254	482	259	333	380	41	43	14	2119
63	Tate's Cairn Radar Station	KV133753	1880	36	57	87	125	157	500	533	354	412	502	52	78	34	2890
64	Maryknoll Convent School	KV092720	30	47	22	63	53	115	279	531	235	372	449	48	51	14	2232
65	Lai Chi Kok Forestry Office	K7058734	20	43	19	70	64	126	242	466	269	351	383	34	38	27	2088



Number on Key Chart	Location	Map Ref.	Height ft.	No. of months data used	Jan mm.	Feb mm.	Mar mm.	Apr mm.	May mm.	Jun mm.	Jul mm.	Aug mm.	Sep mm.	Oct mm.	Nov mm.	Dec mm.	Year mm.
66	Tai Lung Forestry Station	KV033895	75	45	35	49	73	173	430	420	208	363	396	35	48	20	2249
67	Tate's Cairn S.E.	KV131753	1750	17	58	80	115	148	500	514	342	399	499	52	78	42	2826
68	Ting Kok, Ming Tak School	KV135879	100	47	39	62	76	189	382	434	342	353	356	36	63	19	2351
69	Hei Ling Chau Police Station	JV935646	70	45	20	52	45	116	248	280	268	245	359	21	40	10	1704
70	Diana Farm, Hung Shui	JV916676	740	36	30	87	74	90	292	398	331	286	406	25	52	23	2092
71	St. Mary's Canossian College, Tsim Sha Tsui	KV087692	60	45	11	55	54	108	205	367	286	323	412	46	37	12	1916
72	Shap Long Forestry Outpost	HQ090619	98	46	19	56	49	92	406	381	304	236	429	88	45	6	2110
73	Pak Tam Forestry Outpost	KV238798	30	38	30	61	40	140	398	496	362	435	401	31	53	22	2469
74	Yuen Long Middle School	JV954849	111	27	23	61	55	116	282	371	290	305	349	37	41	16	1944
75	Maryknoll Sisters' School	KV102649	308	47	20	70	61	130	317	415	319	423	514	62	54	17	2400
76	St. Mark's School	KV143663	90	14	25	77	80	146	367	533	374	402	356	29	54	19	2461
77	Shek Pik (Recording)	GQ981607	10	48	9	51	51	110	255	368	330	292	436	34	45	9	1989
78	Tai Po Kau Forestry Outpost "D"	KV096833	435	47	41	81	88	152	448	497	280	393	469	28	55	22	2555
79	Tai Lam Chung Forestry Comp. 6	JV949803	430	47	34	67	67	138	399	379	276	337	279	22	43	12	2054
80	Tai Po Kau Forestry Outpost "C"	KV092832	594	47	40	82	87	151	445	465	263	380	451	24	59	21	2468
<u>Monthly Raingauges</u>																	
101	Wang Shan Keuk No.2	KV140901	1410	32	33	44	68	317	419	550	391	486	441	40	55	29	2874
102	Wang Shan Keuk No.1	KV141913	860	34	29	44	35	302	442	498	320	471	413	33	47	31	2664
103	Tai Lam Wu	KV151744	260	32	38	84	109	141	581	613	375	491	479	52	71	33	3066
104	Siu Om Shan	KV055842	835	33	36	80	75	210	253	511	297	576	444	30	46	32	2590
105	Sam Mun Tsai	KV173864	115	35	61	70	50	143	327	422	235	398	306	19	48	22	2101
106	Shui Wo	KV039851	300	34	36	75	81	228	302	497	309	591	462	40	46	31	2697
107	Sheung Tsat Muk Kiu	KV128915	1050	34	43	78	81	301	395	420	294	474	491	33	51	39	2699
108	Sheung Miu Tin	KV180911	305	36	41	87	83	271	488	489	361	517	415	22	54	24	2851
109	Pak Sha O	KV243856	195	34	30	83	88	201	520	685	329	449	391	36	59	25	2896
110	Pak Kong	KV178774	105	33	32	79	100	142	564	571	354	498	469	40	57	29	2934
111	Mai Tsz Lam	KV152788	425	34	35	81	105	169	536	587	381	589	612	31	87	43	3256
112	Ma Nam Mat	KV189754	40	33	30	77	99	139	523	507	357	519	460	35	51	28	2824
113	Cheung Uk	KV098886	560	34	39	86	82	275	482	480	300	453	522	33	41	29	2823
114	Cheung Sheung	KV228831	985	34	28	71	83	132	483	604	298	470	407	30	51	29	2684

MEAN OF 94 STATIONS

2271

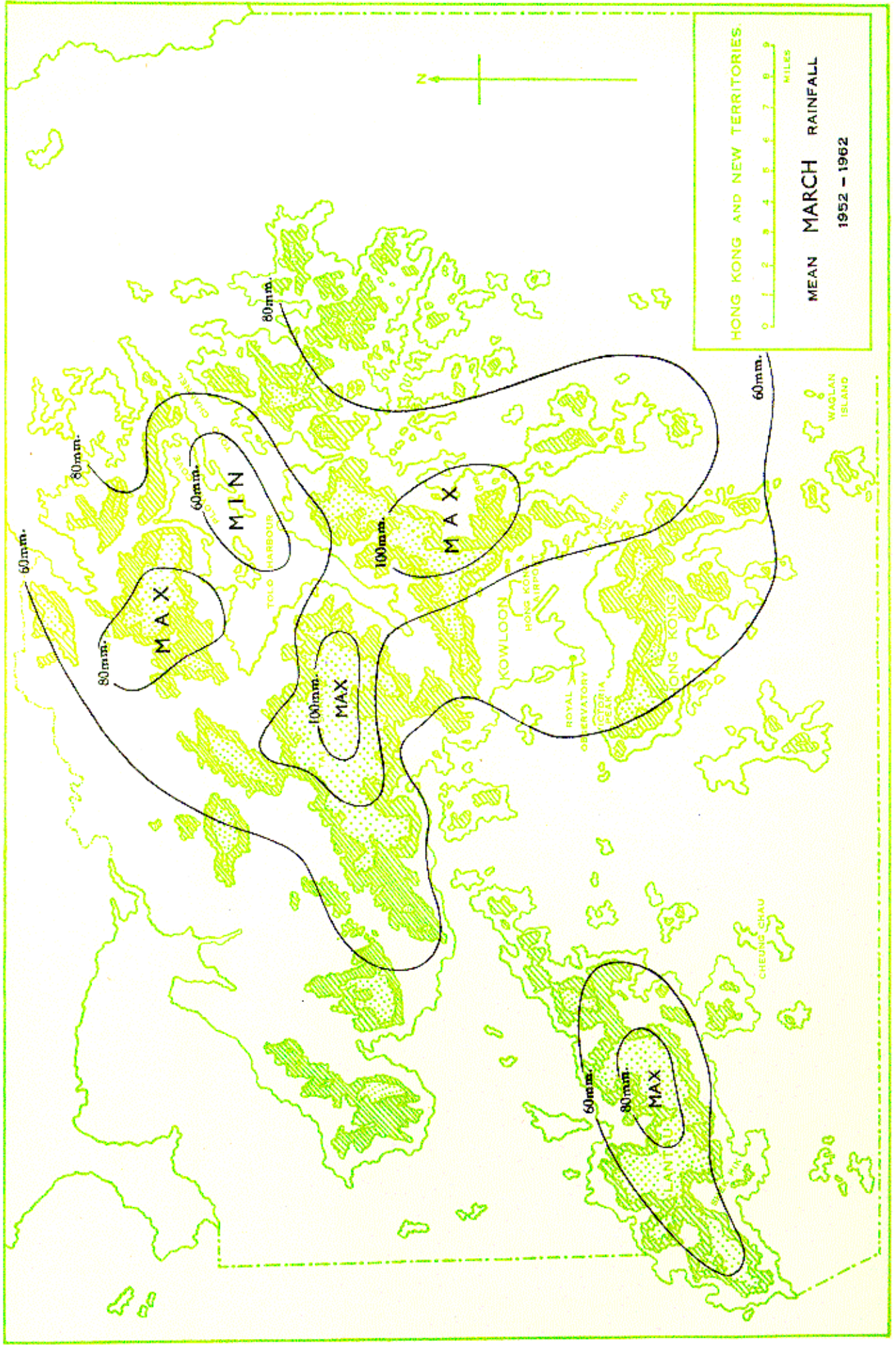




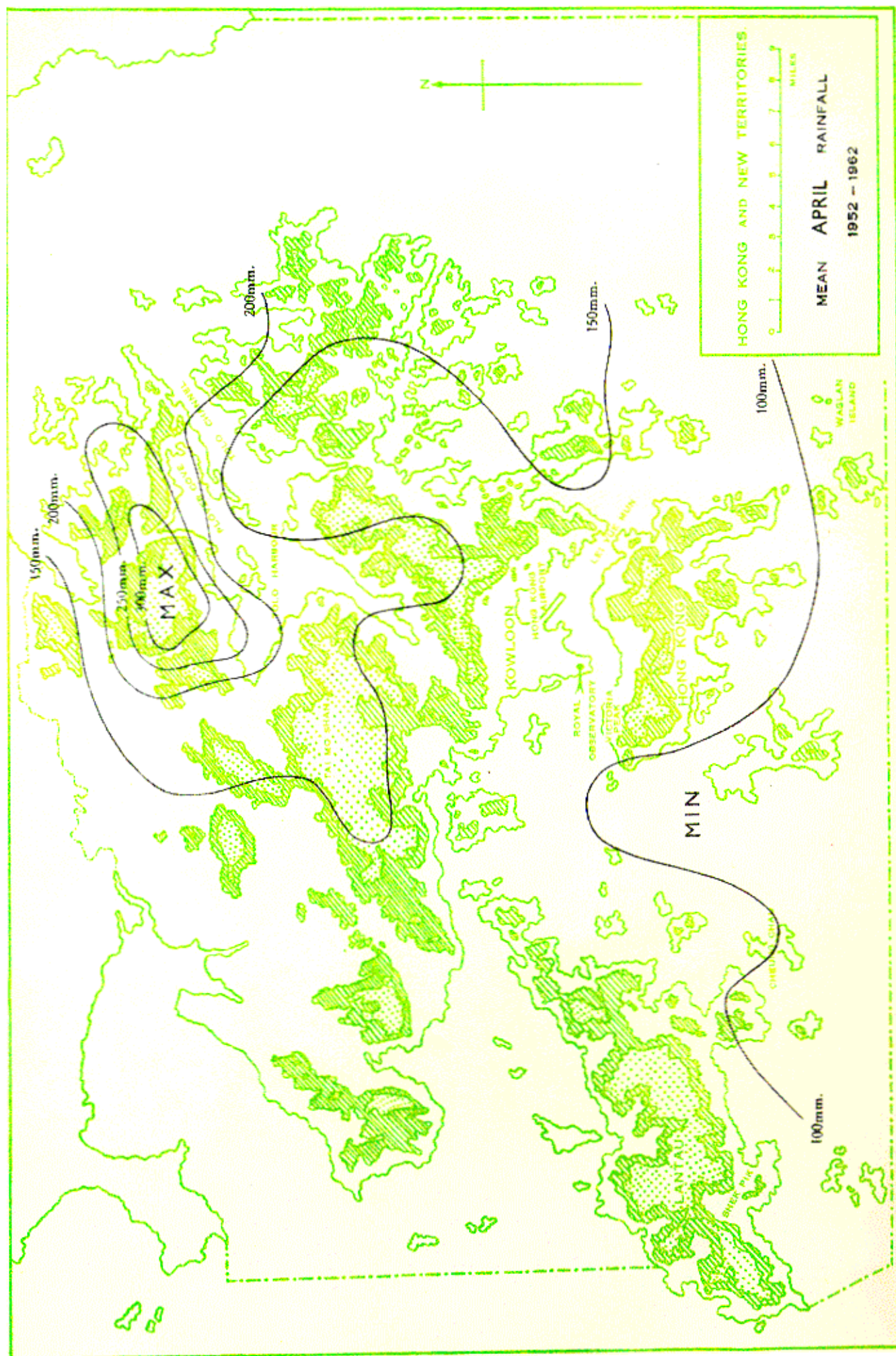




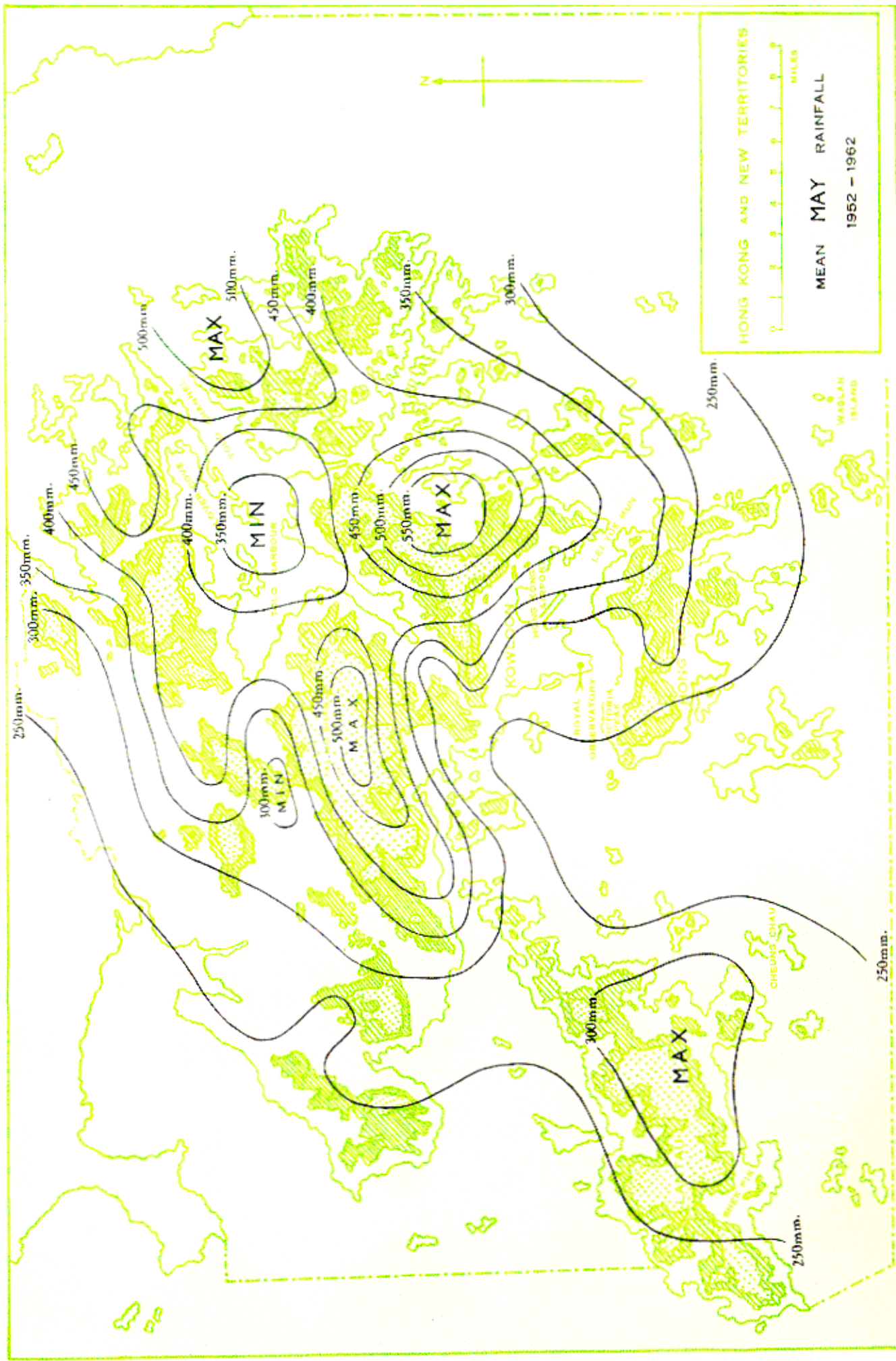








HONG KONG AND NEW TERRITORIES.  
 MEAN APRIL RAINFALL  
 1952 - 1962



HONG KONG AND NEW TERRITORIES.  
**MEAN MAY RAINFALL**  
 1952 - 1962

0 1 2 3 4 5 6 7 8  
 MILES



MAX

MIN

MAX

MAX

MAX

M.A.X.

250mm.  
300mm.  
350mm.  
400mm.  
450mm.  
500mm.

250mm.

250mm.

250mm.

300mm.

350mm.

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550mm.

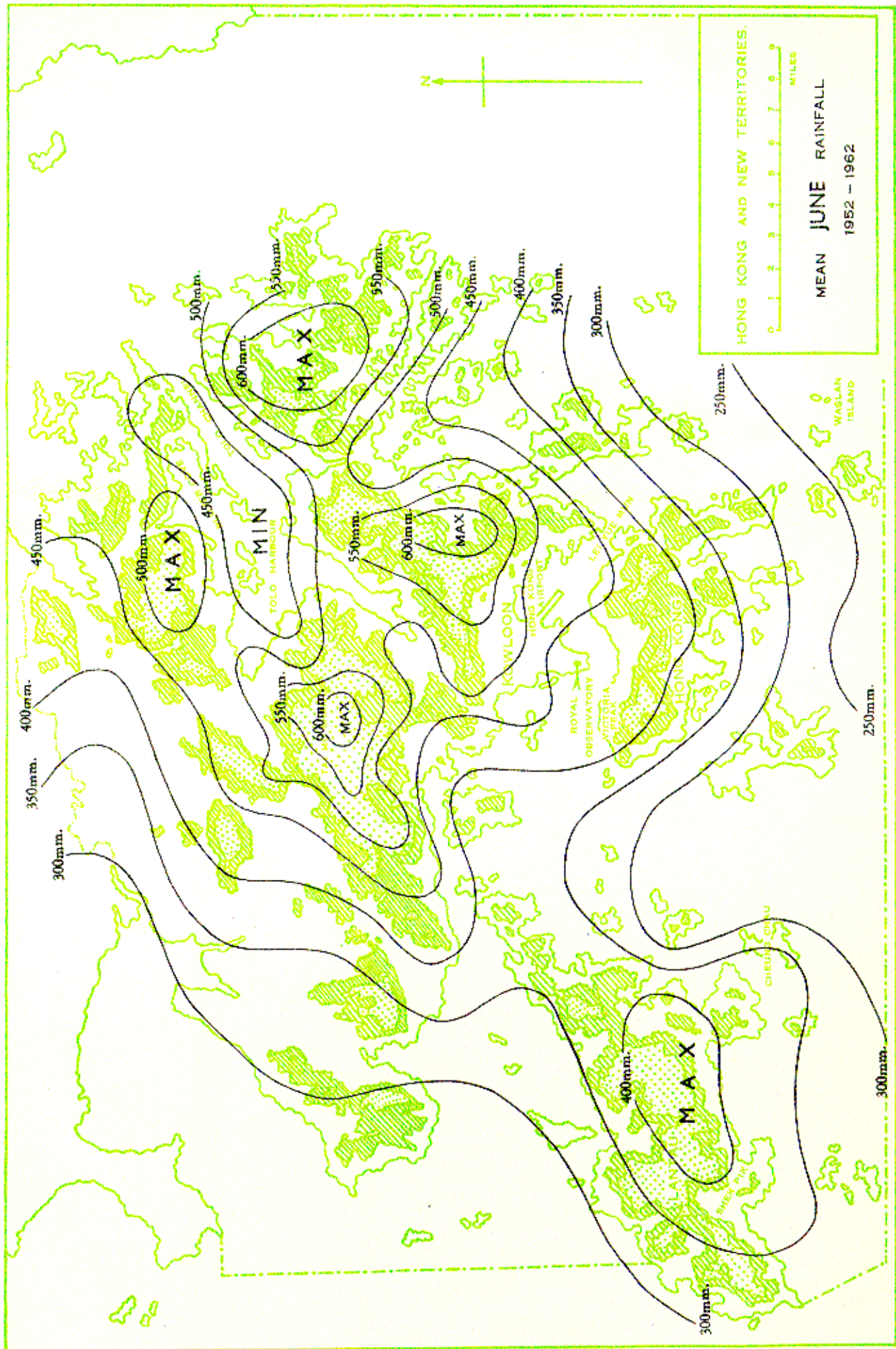
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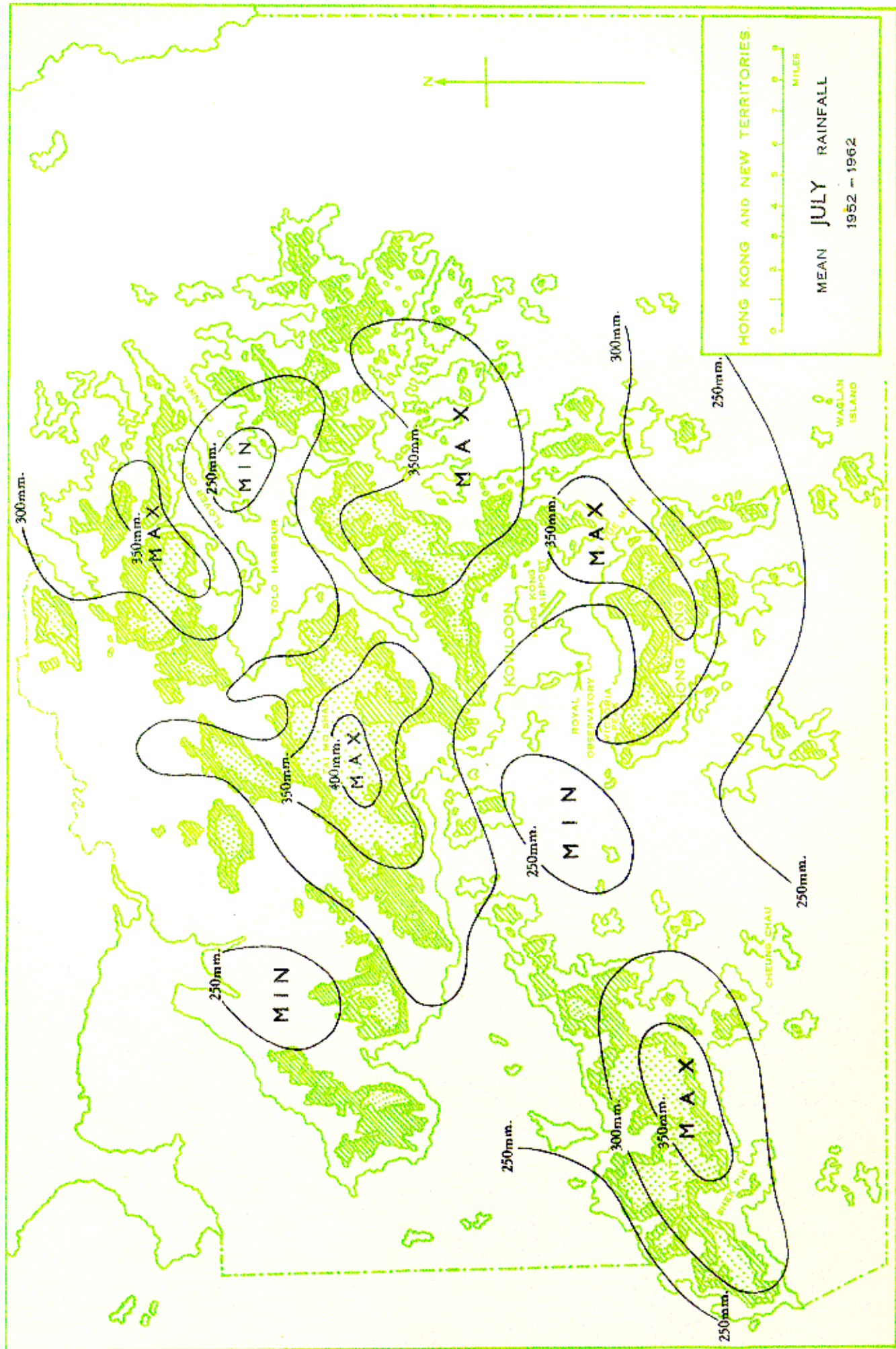
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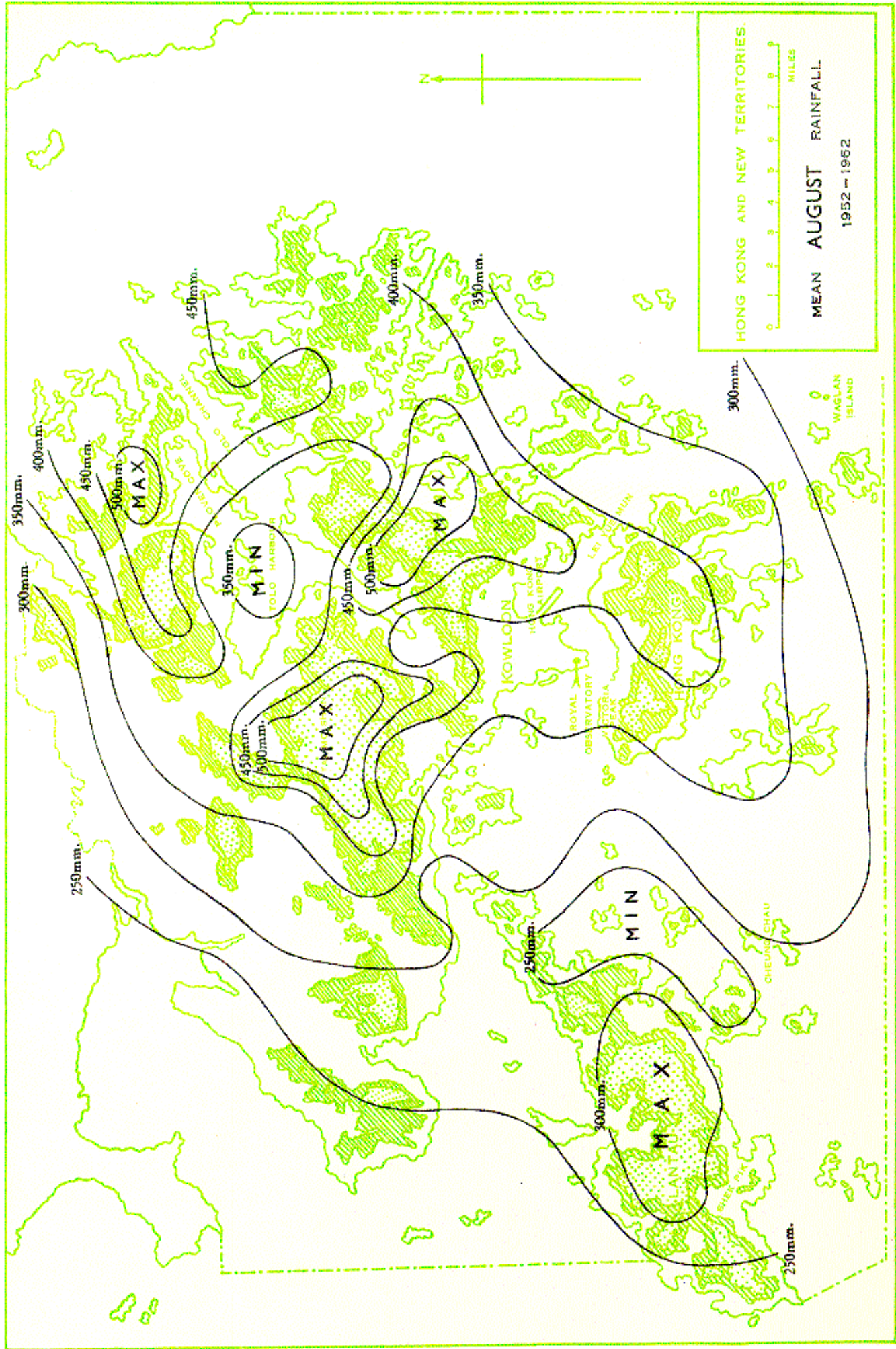
HONG KONG AND NEW TERRITORIES.

MEAN JULY RAINFALL

1952 - 1962

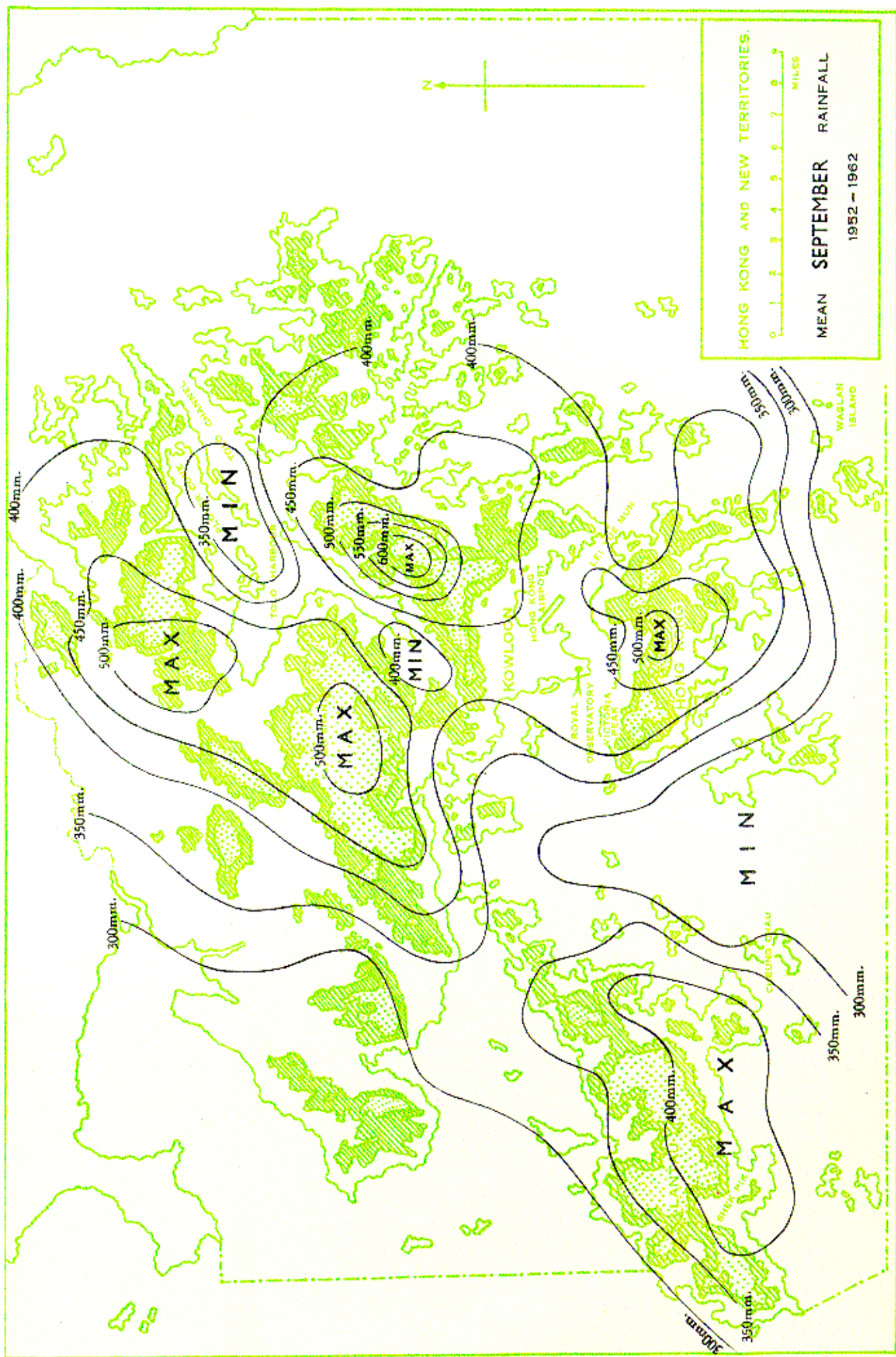




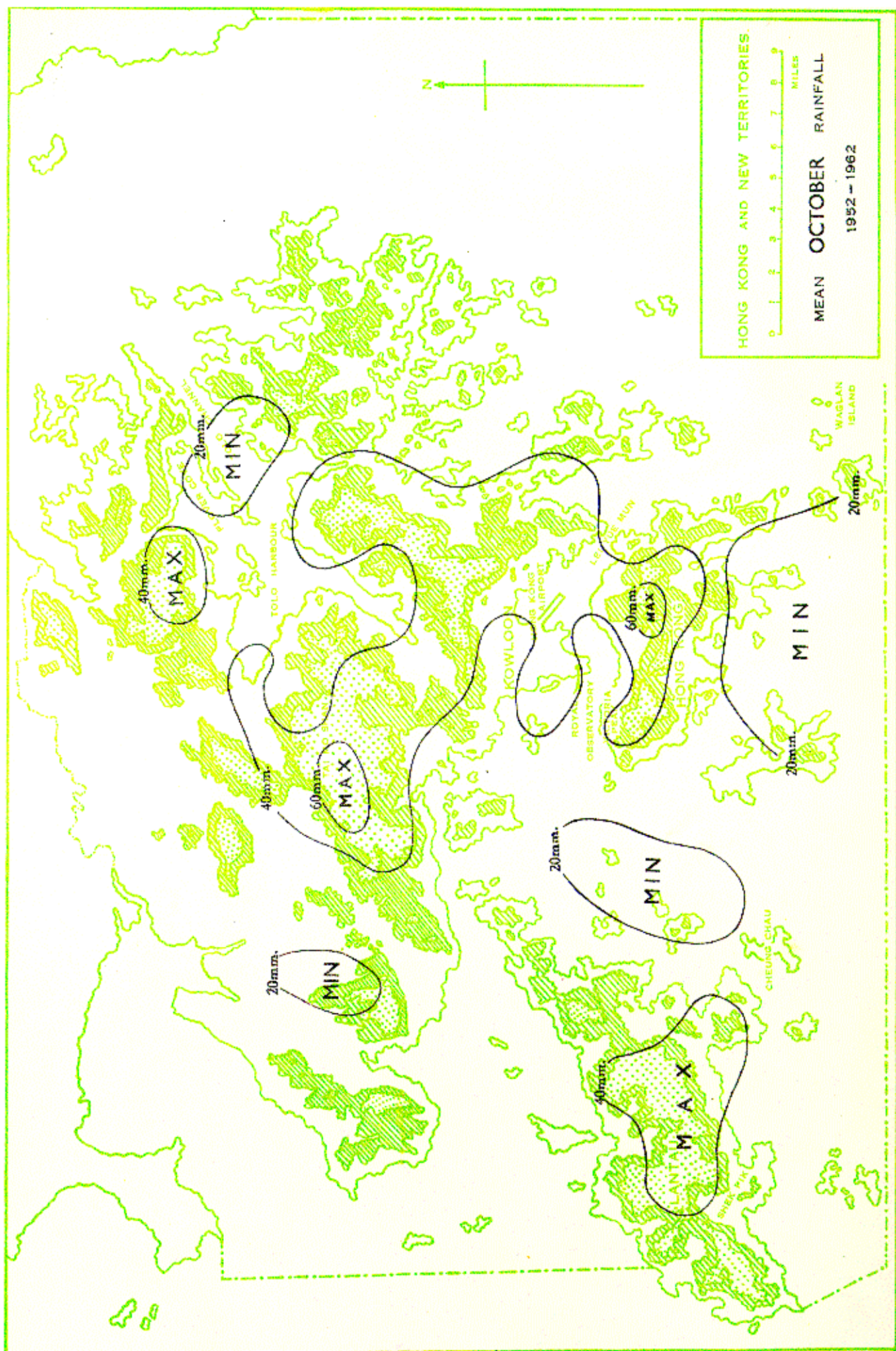


HONG KONG AND NEW TERRITORIES.  
**MEAN AUGUST RAINFALL**  
 1952 - 1962





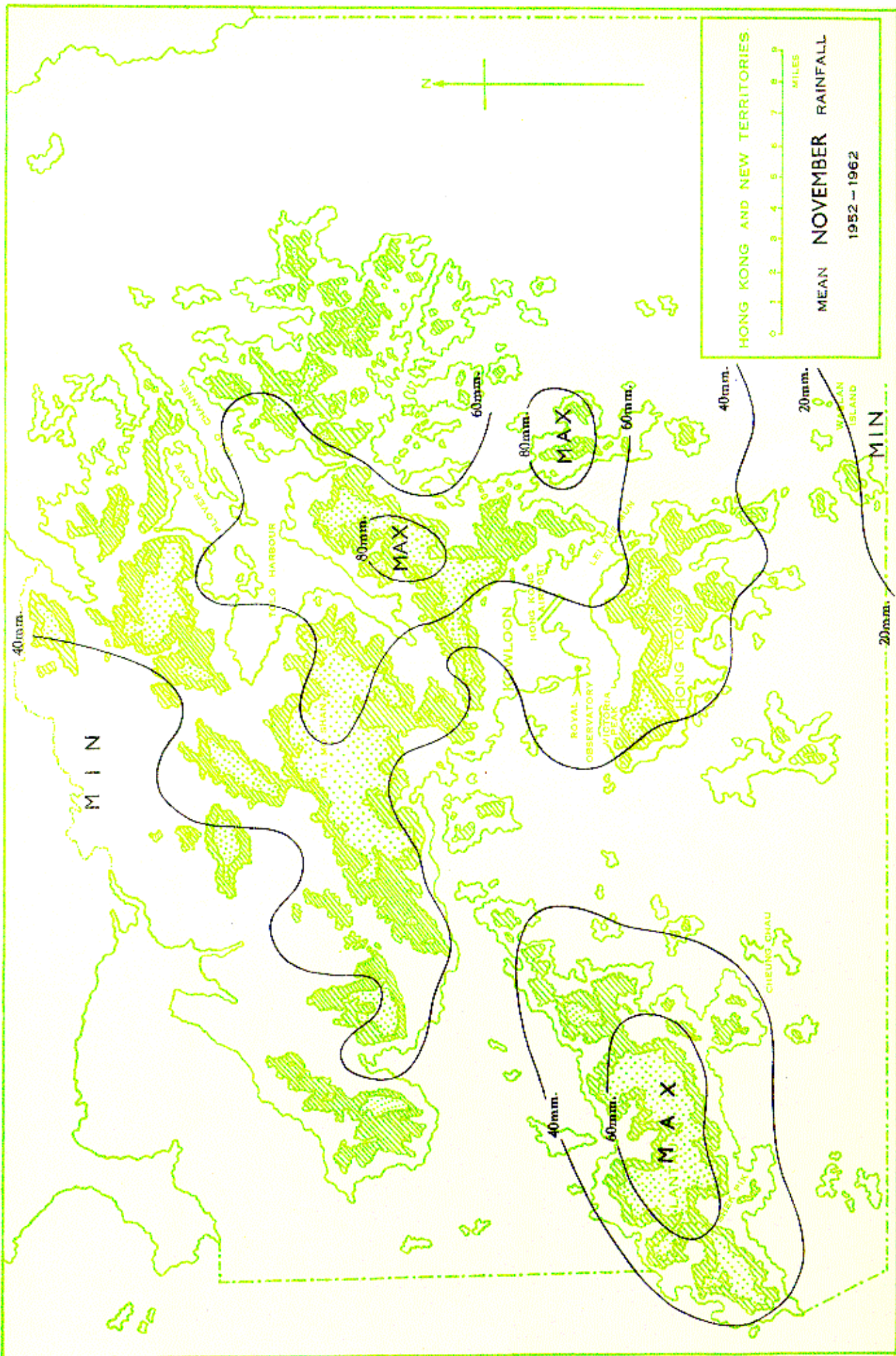
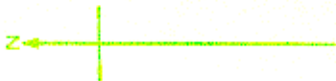




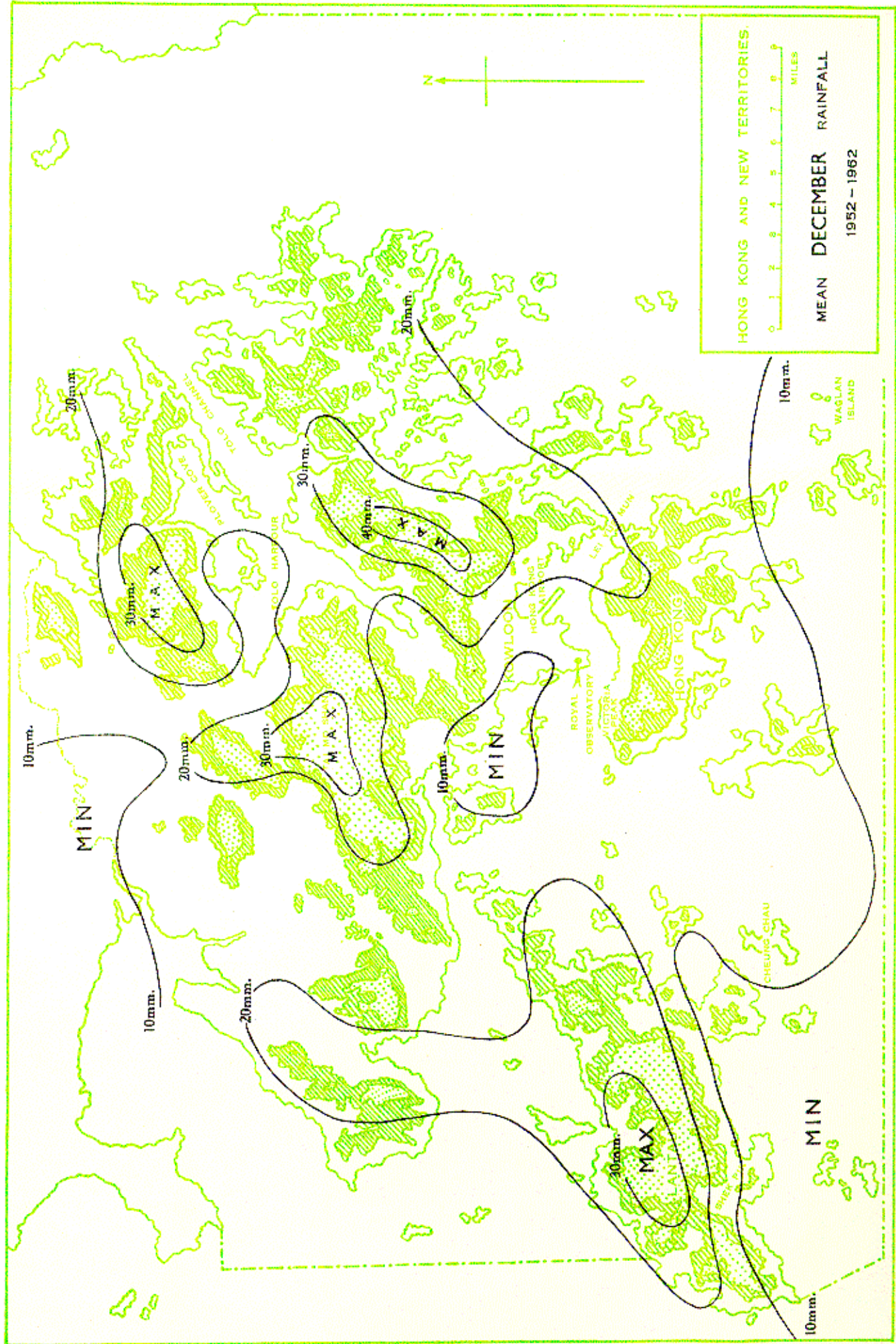


HONG KONG AND NEW TERRITORIES.

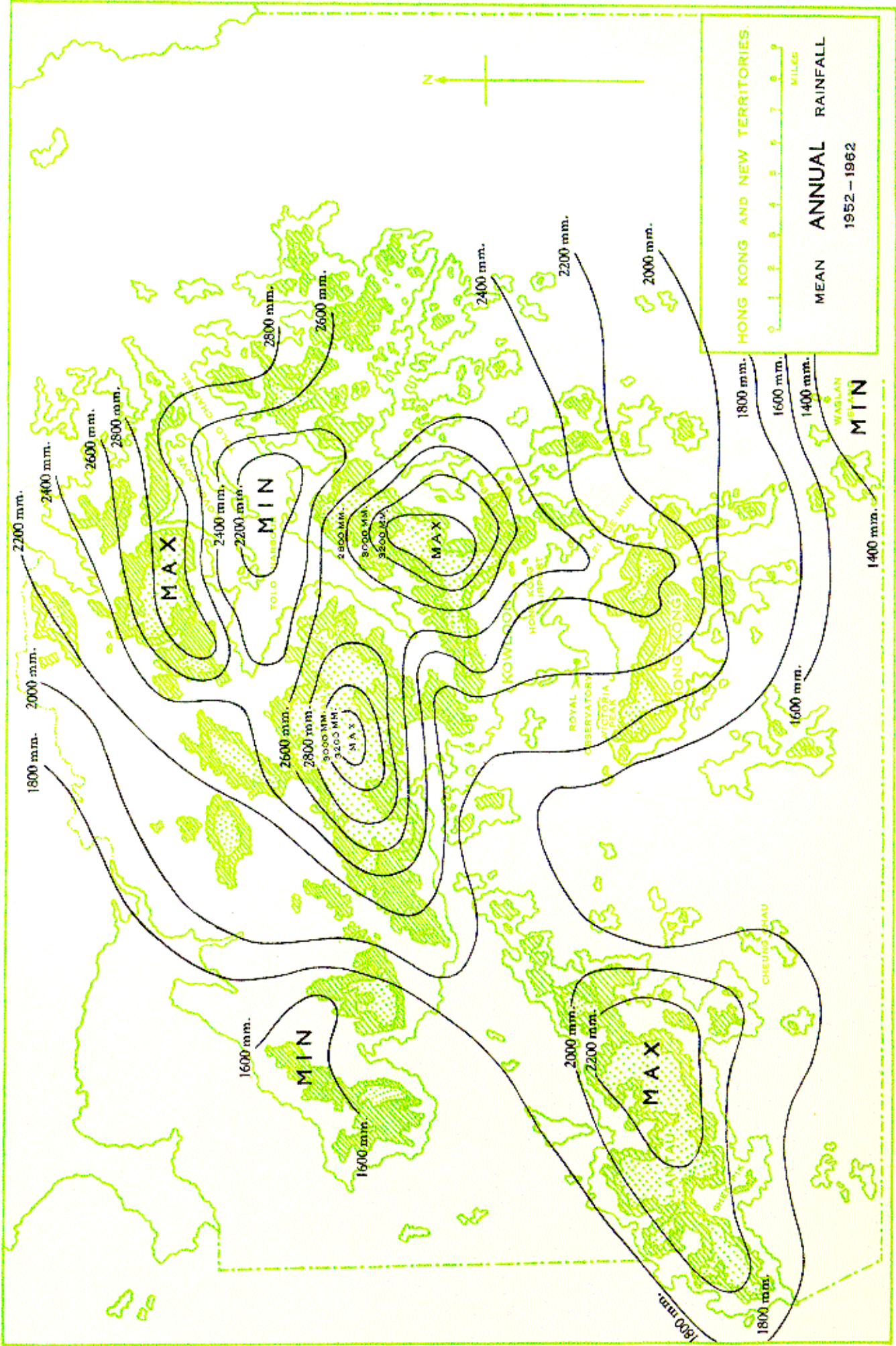
MEAN **NOVEMBER** RAINFALL  
1952-1962











HONG KONG AND NEW TERRITORIES.  
 MEAN ANNUAL RAINFALL  
 1952-1962

0 1 2 3 4 5 6 7 8 9  
 MILES

