RAINFALL AT THE AUSTRALIAN CAPITALS, 1860 TO 1921.

Year.	PERTH.			ADELAIDE.			BRISBANE.			SYDNEY.			MELBOURNE.			HOBART.		
	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.
	in.		in.	in.		in.	in.		in.	in.		in.	in.		in.	in.		in.
1860	..	..	..	19.67	119	..	54.63	144	..	82.76	180	..	25.38	133	..	21.05	142	..
1	..	..	..	24.04	147	..	69.45	155	..	59.36	157	..	29.16	159	..	28.19	167	..
2	..	..	..	21.85	119	..	28.27	98	..	23.99	108	..	22.08	139	..	21.72	148	..
3	..	..	..	23.68	145	..	68.83	146	..	47.08	152	..	36.42	165	..	40.67	163	..
4	..	..	..	19.75	121	..	47.00	114	..	69.12	135	..	27.40	144	..	28.11	142	..
5	..	..	..	15.51	108	..	24.11	52	..	36.15	140	..	15.94	119	..	23.07	146	..
6	..	..	..	20.11	116	..	51.18	142	..	36.91	156	..	22.41	107	..	23.55	127	..
7	..	..	..	19.05	112	..	61.04	112	..	59.56	140	..	25.79	133	..	22.27	139	..
8	..	..	..	19.90	113	19.85	35.98	110	47.55	42.98	161	49.99	18.27	120	24.47	18.08	112	25.00
9	..	..	..	14.74	117	..	54.39	114	..	48.00	150	..	24.58	129	..	23.87	131	..
1870	..	..	..	23.84	119	..	79.06	154	..	64.47	179	..	33.77	129	..	27.53	123	..
1	..	..	..	23.25	137	..	45.45	119	..	52.27	141	..	30.17	125	..	18.25	131	..
2	..	..	..	22.66	146	..	49.22	131	..	37.12	161	..	32.52	136	..	31.76	160	..
3	..	..	..	21.00	139	..	62.02	138	..	73.40	176	..	25.61	134	..	23.43	157	..
4	..	..	..	17.23	127	..	38 71	135	..	63.60	173	..	28.10	134	..	24.09	138	..
5	..	..	..	29.21	157	..	67.03	162	..	46.25	153	..	32.87	158	..	29.25	182	..
6	28.73	100	..	13.43	110	..	53.42	130	..	45.69	156	..	24.04	134	..	23.63	173	..
7	20.48	103	..	24.95	135	..	30.28	119	..	59.66	147	..	24.10	124	..	20.82	165	..
8	39.72	143	29.64	22.08	112	21.24	56.33	134	53.59	49.77	129	54.03	25.36	116	28.11	29.76	183	25.24
9	41.34	106	(3 yr.)	20.69	130	..	67.30	157	..	63.19	167	..	19.28	127	..	21.07	210	..
1880	31.79	116	..	22.48	142	..	49.12	134	..	29.51	142	..	28.48	147	..	..	..	..
1	24.78	101	..	18.02	135	..	29.39	117	..	40.99	163	..	24.08	134	..	..	..	..
2	35.68	109	..	15.70	134	..	42.62	121	..	42.28	112	..	22.40	131	..	30.69	..	..
3	39.65	122	..	26.76	161	..	32.22	114	..	46.92	157	..	23.71	130	..	24.05	161	..
4	31.96	92	..	18.74	138	..	43.49	136	..	44.04	159	..	25.85	128	..	21.55	171	..
5	33.44	110	..	15.89	133	..	26.85	112	..	39.91	145	..	26.94	123	..	28.29	176	..
6	28.90	89	..	14.42	141	..	53.66	152	..	39.43	152	..	24.00	128	..	21.39	189	..
7	37.52	105	..	25.70	164	..	81.54	242	..	60.16	190	..	32.39	153	..	24.21	174	..
8	27.83	117	33.29	14.55	131	19.30	33.08	143	45.93	23.01	132	42.94	19.42	123	24.66	18.45	151	23.71
9	39.96	123	..	30.87	143	..	49.36	155	..	57.16	186	..	27.14	125	..	30.80	180	(8 yr.)
1890	16.73	126	..	25.78	139	..	73.02	162	..	81.42	184	..	24.24	140	..	27.51	173	..
1	30.33	93	..	14.01	113	..	41.68	143	..	55.30	200	..	26.73	126	..	23.25	160	..
2	31.23	122	..	21.53	137	..	61.98	146	..	69.26	189	..	24.96	124	..	18.62	120	..
3	40.12	145	..	21.49	129	..	88.26	147	..	49.90	209	..	26.80	140	..	27.46	146	..
4	23.72	103	..	20.78	134	..	44.02	143	..	38.22	188	..	22.60	138	..	27.39	141	..
5	33.01	123	..	21.28	130	..	59.11	105	..	31.86	170	..	17.04	131	..	25.40	121	..
6	31.50	103	..	15.17	121	..	44.97	121	..	42.40	157	..	25.16	124	..	21.61	135	..
7	27.17	106	..	15.42	119	..	42.53	115	..	42.52	136	..	25.85	117	..	20.45	153	..
8	31.76	118	33.55	20.75	116	20.71	60.06	131	56.80	43.17	143	51.12	15.61	102	23.61	20.40	164	24.29
9	32.40	107	..	18.84	119	..	38.85	141	..	55.90	174	..	28.87	116	..	20.68	170	..
1900	36.61	124	..	21.68	133	..	34.41	110	..	66.54	170	..	28.09	139	..	19.14	135	..
1	36.75	122	..	18.01	124	..	38.48	110	..	40.10	149	..	27.45	113	..	25.11	149	..
2	27.06	93	..	16.02	123	..	16.17	87	..	43.07	180	..	23.08	102	..	21.85	150	..
3	35.69	140	..	25.47	134	..	49.27	136	..	38.62	173	..	28.43	130	..	25.86	139	..
4	34.35	125	..	20.31	117	..	33.23	124	..	45.93	158	..	29.72	128	..	22.41	139	..
5	34.61	116	..	22.28	131	..	36.76	108	..	35.03	145	..	25.64	129	..	32.09	168	..
6	32.37	121	..	26.51	127	..	42.85	125	..	31.89	160	..	22.29	114	..	23.31	155	..
7	40.12	132	..	17.78	125	..	31.46	119	..	31.32	132	..	22.26	102	..	25.92	166	..
8	30.52	106	34.05	24.56	125	21.15	44.01	125	36.55	45.65	167	43.41	17.72	130	25.36	16.50	148	23.29
9	39.11	107	..	27.69	138	..	34.06	111	..	32.45	177	..	25.86	171	..	27.29	170	..
1910	37.02	135	..	24.62	116	..	49.00	133	..	46.91	160	..	24.61	167	..	25.22	205	..
11	23.38	108	..	15 99	127	..	35.21	128	..	50.24	155	..	36.61	168	..	26.78	193	..
12	27.85	123	..	19.57	116	..	41.30	114	..	47.51	172	..	20.37	157	..	23.14	181	..
13	38.28	141	..	18.16	102	..	40.81	115	..	57.70	141	..	21.17	157	..	19.36	165	..
14	20.21	128	..	11.39	91	..	33.99	141	..	56.42	149	..	18.57	129	..	15.42	154	..
15	43.61	164	..	19.38	117	..	25.66	93	..	34.83	117	..	20.95	167	..	20.91	196	..
16	35.16	128	..	28.16	142	..	52.80	136	..	14.91	161	..	38.04	170	..	43.39	203	..
17	45.64	146	..	28.90	153	..	40.92	127	..	52.40	151	..	30.57	171	..	30.62	214	..
18	39.58	138	34.98	17.41	107	21.13	24.95	121	37.87	42.99	149	46.64	27.13	160	26.39	26.04	179	25.82
19	30.66	120	..	17.21	108	..	19.36	96	..	58.71	152	..	24.89	141	..	22.48	153	..
20	40.35	124	..	26.70	119	..	39.72	122	..	13.42	159	..	28.27	162	..	18.00	182	..
21	41.09	135	..	22.64	100	..	54.31	167	..	43.34	140	..	29.76	154	..	18.04	159	..
Aver.	..	..	33.91	..	..	21.05	..	..	45.46	..	..	48.27	..		26.24	..	..	23.59
No.of Yrs.			(46)			(83)			(72)			(82)	..		(78)			(79)

NOTE.—The above average Rainfall figures for Brisbane, Sydney, and Melbourne differ slightly from the mean annual falls given in the Climatological Tables on pp. 62–64, which are for a less number of years.

9. Remarkable Falls of Rain.—The following are the more remarkable falls of rain in the various States and in the Northern Territory, which have occurred within a period of twenty-four hours. In New South Wales and Queensland falls of less than 15 inches in the 24 hours are not included. Reference, however, to them may be found in preceding Official Year Books:—

HEAVY RAINFALLS, NEW SOUTH WALES, UP TO 1921, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Anthony ..	28 Mar., 1887	17.14	Madden's Creek ..	13 Jan., 1911	18.68
Bega	27 Feb., 1919	17.88	Morpeth ..	9 Mar., 1893	21.52
Broger's Creek ..	14 ,, 1898	20.05	Mount Kembla ..	13 Jan., 1911	18.25
,, ,, ..	13 Jan., 1911	20.83	Numbugga ..	27 Feb., 1919	17.87
Bulli Mountain ..	13 Dec., 1898	17.14	Tongarra Farm ..	14 ,, 1898	15.12
Burragate ..	27 ,, 1919	16.38	Towamba ..	5 Mar., 1893	20.00
Candelo	27 Feb., ,,	18.58	South Head (near Sydney) ..	29 Apr., 1841	20.12
Condong ..	27 Mar., 1887	18.66	,, ,, ..	16 Oct., 1844	20.41
Cordeaux River ..	14 Feb., 1898	22.58			
Kembla Heights ..	13 Jan., 1911	17.46			

HEAVY RAINFALLS, QUEENSLAND, UP TO 1921, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Anglesey ..	26 Dec., 1909	18.20	Flying Fish Point	31 Jan., 1913	16.10
Atherton (Cairns) ..	31 Jan., 1913	16.69	Gladstone ..	4 Feb., 1911	18.83
Babinda (Cairns) ..	1 Feb., ,,	20.51	Glen Boughton ..	5 Apr., 1894	18.50
,, ,, ..	24 Jan., 1916	22.30	Goldsborough (Cairns) ..	31 Jan., 1913	19.92
,, ,, ..	21 Apr., 1920	16.05	Goondi Mill (Innisfail)	6 Apr., 1894	15.69
Babinda	25 Mar., 1921	15.76	,, ,, ..	29 Dec., 1903	17.83
Bloomsbury ..	14 Feb., 1893	17.40	,, ,, ..	10 Feb,. 1911	17.68
,, ..	10 Jan., 1901	16.62	,, ,, ..	6 Apr., 1912	15.55
Brisbane ..	21 ,, 1887	18.31	Goondi	30 Jan., 1913	24.10
Buderim Mountain	11 ,, 1898	26.20	Goorganga ..	23 ,, 1918	18.17
Bundaberg ..	16 ,, 1913	16.94	Halifax	5 Feb., 1899	15.37
Burnett Head (Bundaberg) ..	16 ,, 1913	15.22	,, ...	6 Jan., 1901	15.68
Cairns	11 Feb., 1911	15.17	Hambledon Mill ..	2 ,, 1911	18.61
,, ...	2 Apr., ,,	20.16	,, ,, ..	1 Apr., ,,	19.62
Carbrook ..	23 Jan., 1918	22.66	,, ,, ..	30 Jan., 1913	17.32
,, ..	24 ,, ,,	15.77	Hampden ..	23 Apr., 1918	17.30
Cardwell ..	18 Mar., 1904	18.24	,, ..	24 ,, ,,	17.19
Carmilla	23 Jan., 1918	15.92	Harvey Creek ..	8 Mar., 1899	17.72
Clare	26 ,, 1896	15.30	,, ,, ..	11 Jan., 1905	16.96
Collaroy ..	23 ,, 1918	18.06	,, ,, ..	3 ,, 1911	27.75
Crohamhurst (Blackall Range)	2 Feb., 1893	35.71	,, ,, ..	2 Apr., ,,	16.46
,, ,,	9 Jan., 1898	19.55	,, ,, ..	31 Jan., 1913	24.72
,, ..	6 Mar., ,,	16.01	Harvey Creek ..	25 Mar., 1921	15.80
Croydon	29 Jan., 1908	15.00	Haughton Valley ..	26 Jan., 1896	18.10
Dungeness ..	16 Mar., 1893	22.17	Holmwood (Woodford) ..	2 Feb., 1893	16.19
Dunira	9 Jan., 1898	18.45	Howard	15 Jan., 1905	19.55
,, ...	6 Mar., ,,	15.95	Huntley ..	27 Dec., 1916	18.94
Fairymead Plantation (Bundaberg)	16 Jan., 1913	15.32	Innisfail (formerly Geraldton) ..	11 Feb., 1889	17.13
Flying Fish Point	7 Apr., 1912	16.06			

HEAVY RAINFALLS, QUEENSLAND—*continued.*

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Innisfail (formerly Geraldton) ..	6 Apr. 1894	16.02	Mourilyan ..	7 Apr., 1912	18.97
,, ,, ..	24 Jan., 1900	15.22	,, ..	31 Jan., 1913	15.05
,, ,, ..	29 Dec., 1903	21.22	Mundoolun ..	21 ,, 1887	17.95
,, ,, ..	2 Apr., 1911	15.00	Nambour ..	9 ,, 1898	21.00
,, ,, ..	7 ,, 1912	20.50	,, ..	27 Dec., 1909	16.80
,, ,, ..	31 Jan., 1913	20.91	Netherdale ..	22 Jan., 1918	19.50
Kamerunga (Cairns)	2 Apr., 1911	21.00	Oxenford ..	14 Mar., 1908	15.65
,, ,, ..	31 Jan., 1913	16.00	Palmwoods ..	10 Jan., 1898	15.85
Koumala ..	23 ,, 1918	22.31	,, ..	25 Dec., 1909	17.75
,, ..	24 ,, ,,	20.65	Pialba (Marybor'gh)	16 Jan., 1913	17.22
Kuranda (Cairns) ..	11 Feb., 1911	16.30	Plane Creek (Mackay) ..	26 Feb., ,,	27.73
,, ,, ..	17 Mar., ,,	15.10	Port Douglas ..	10 Mar., 1904	16.34
,, ,, ..	31 ,, ,,	18.60	,, ,, ..	17 ,, 1911	16.10
,, ,, ..	1 Apr., ,,	24.30	,, ,, ..	1 Apr., ,,	31.53
,, ,, ..	2 ,, ,,	28.80	Proserpine ..	23 Jan., 1918	18.17
,, ,, ..	31 Jan., 1913	16.34	Ravenswood ..	24 Mar., 1890	17.00
Landsborough ..	2 Feb., 1893	15.15	Redcliffe ..	16 Feb., 1893	17.35
Low Island ..	10 Mar., 1904	15.07	Rosedale ..	16 Jan., 1913	18.90
,, ..	1 Apr., 1911	15.30	Sarina	23 ,, 1918	22.60
Lyndon (*via* Brixton)	3 ,, 1917	17.00*	St. Lawrence ..	30 ,, 1896	15.00
Mackay	21 Jan., 1918	24.70†	The Hollow (Mackay) ..	23 Feb., 1888	15.12
,, ...	22 ,, ,,	17.25‡	Thornborough ..	20 Apr., 1903	18.07
Sugar Experimental Farm, Mackay ..	21 ,, ,,	16.80	Townsville ..	24 Jan., 1892	19.20
,, ..	22 ,, ,,	17.20	,, ..	28 Dec., 1903	15.00
Macnade Mill ..	5 Feb., 1899	15.20	Victoria Mill ..	6 Jan., 1901	16.67
,, ..	6 Jan., 1901	23.33	Woodlands (Yepp'n)	31 ,, 1893	23.07
,, ..	4 Mar., 1915	22.00	Wootha ..	10 Feb., 1915	15.93
Mapleton ..	26 Dec., 1909	15.72	Yandina ..	1 ,, 1893	20.08
Mirani	12 Jan., 1901	16.59	,, ...	9 Jan., 1898	19.25
Miriam Vale (B'berg)	17 ,, 1913	15.80	,, ..	28 Dec., 1909	15.80
Mooloolah ..	13 Mar., 1892	21.53	Yarrabah ..	2 Apr., 1911	30.65
,, ..	2 Feb., 1893	19.11	,, ..	24 Jan., 1916	27.20
Mount Cuthbert ..	8 Jan., 1911	18.00	,, ..	25 ,, ,,	18.60
Mount Molloy ..	31 Mar., ,,	20.00	Yeppoon ..	31 ,, 1893	20.05
,, ..	1 Apr., ,,	20.00	,, ..	8 ,, 1898	18.05
,, ..	2 ,, ,,	20.00	,, ..	8 Oct., 1914	21.70
Mourilyan ..	11 Feb., ,,	17.40			

HEAVY RAINFALLS, WESTERN AUSTRALIA, UP TO 1921, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Balla Balla ..	21 Mar., 1899	14.40	Exmouth Gulf ..	2 Feb., 1918	12.50
Bamboo Creek ..	22 ,, ,,	10.10	Fortescue ..	3 May, 1890	23.36
Boodarie ..	21 ,, ,,	14.53	Frazier Downs ..	3 Mar., 1916	12.25
Broome	6 Jan., 1917	14.00	Kerdiadary ..	7 Feb., 1901	12.00
Carlton	11 ,, 1906	10.64	Meda	2 Mar., 1916	10.55
Cossack	3 Apr., 1898	12.82	Millstream ..	5 ,, 1900	10.00
,, ...	16 ,, 1900	13.23	Obagama ..	28 Feb., 1910	12.00
Croydon	3 Mar., 1903	12.00	,, ..	24 Dec., 1920	13.02
Derby	29 Dec., 1898	13.09	Pilbara	2 Apr., 1898	14.04
,, ...	7 Jan., 1917	16.47	Point Cloates ..	20 Jan., 1909	10.87

* Mr. Jas. Laidlaw, of Lyndon, states that this fell in 4 hours. † 37½ hours. ‡ 22½ hours.

HEAVY RAINFALLS, WESTERN AUSTRALIA—*continued.*

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Point Torment ..	17 Dec., 1906	11.86	Whim Creek ..	6 Mar., 1900	10.03
Port George IV. ..	17 Jan., 1915	11.24	„ „ ..	3 „ 1903	10.44
Roebourne ..	3 Apr., 1898	11.44	Woodstock ..	21 „ 1912	13.00
Roebuck Plains ..	5 Jan., 1917	14.01	Wyndham ..	27 Jan., 1890	11.60
„ „ ..	6 „ „	22.36	„ ..	4 Mar., 1919	12.50
Tambray ..	6 Mar., 1900	10.00	Yardil Creek ..	3 Feb., 1918	10.00
„ ..	3 „ 1903	10.47	Yeeda	2 Mar., 1916	10.70
Thangoo ..	17-19 Feb. '96	24.18	„	6 Jan., 1917	10.20
„ ..	28 Dec., 1898	11.55	„	7 „ „	11.75
Whim Creek ..	3 Apr., „	29.41			

HEAVY RAINFALLS, NORTHERN TERRITORY, UP TO 1921, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Bonrook	24 Dec., 1915	10.60	Cosmopolitan Gold Mine ..	24 Dec., 1915	10.60
Borroloola ..	14 Mar., 1899	14.00	Darwin	7 „ „	11.67
Brock's Creek ..	4 Jan., 1914	10.68	Lake Nash ..	21 Mar., 1901	10.25
„ „ ..	24 Dec., 1915	14.33	Pine Creek ..	8 Jan., 1897	10.35
Burrundie ..	4 Jan., 1914	11.61			

HEAVY RAINFALLS, SOUTH AUSTRALIA, UP TO 1921, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Wilmington ..	28 Feb., 1921	3.97	Wilmington ..	1 Mar., 1921	7.12

HEAVY RAINFALLS, VICTORIA, UP TO 1921, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Balook	26 Sept., 1917	5.32	Mt. Buffalo ..	6 June, 1917	8.53
„	27 „ „	7.23	„ ..	7 „ „	6.56
„	28 „ „	2.08			

HEAVY RAINFALLS, TASMANIA, UP TO 1921, INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Gould's Country ..	8-10 Mar., '11	15.33	Mathinna ..	8-10 Mar., '11	15.79
Lottah	8-10 „ „	18.10	The Springs ..	30-31 Jan., '16	10.75

10. **Snowfall.**—Light snow has been known to fall even as far north, occasionally, as latitude 31° S., and from the western to the eastern shores of the continent. During exceptional seasons it has fallen simultaneously over two-thirds of the State of New South Wales, and has extended at times along the whole of the Great Dividing Range, from its southern extremity in Victoria as far north as Toowoomba in Queensland. During the winter, snow covers the ground to a great extent on the Australian Alps for several months, where also the temperature falls below zero Fahrenheit during the night, and in the ravines around Kosciusko and similar localities the snow never entirely disappears.

The antarctic "V"-shaped disturbances are always associated with our most pronounced and extensive snowfalls. The depressions on such occasions are very steep in the vertical area, and the apexes are unusually sharp-pointed and protrude into very low latitudes, sometimes even to the tropics.

11. **Hail.**—Hail falls throughout Australia most frequently along the southern shores of the continent in the winter, and over south-eastern Australia during the summer months. The size of the hailstones generally increases with distance from the coast, a fact which lends strong support to the theory that hail is brought about by ascending currents. Rarely does a summer pass without some station experiencing a fall of stones exceeding in size an ordinary hen-egg, and many riddled sheets of light-gauge galvanised iron bear evidence of the weight and penetrating power of he stones.

Hail storms occur most frequently in Australia when the barometric readings indicate a flat and unstable condition of pressure. They are almost invariably associated with tornadoes or tornadic tendencies, and on the east coast the clouds from which the stones fall are generally of a remarkable sepia-coloured tint.

12. **Barometric Pressures.**—The mean annual barometric pressure (corrected to sea-level and standard gravity) in Australia varies from 29.80 inches on the north coast to 29.92 inches over the central and 30.03 inches in the southern parts of the continent. In January the mean pressure ranges from 29.70 inches in the northern and central areas to 29.95 inches in the southern. The July mean pressure ranges from 29.90 inches at Darwin to 30.12 inches at Alice Springs. Barometer readings, corrected to mean sea level and standard gravity, have, under anticyclonic conditions in the interior of the continent, ranged as high as 30.77 inches (at Kalgoorlie on the 28th July, 1901) and have fallen as low as 27.55 inches. This lowest record was registered at Mackay during a tropical hurricane on the 21st January, 1918. An almost equally abnormal reading of 27.88 inches was recorded at Innisfail during a similar storm on the 10th March, 1918. The mean annual fluctuations of barometric pressure for the capitals of Australia are shewn on page 67.

13. **Wind.**—Notes on the distinctive wind currents in Australia were given a preceding Year Books (see No. 6, page 83) and are here omitted to save space.

14. **Cyclones and Storms.**—The "elements" in Australia are ordinarily peaceful, and although severe cyclones have visited various parts, more especially coastal areas, such visitations are rare, and may be properly described as erratic.

During the winter months the southern shores of the continent are subject to cyclonic storms, evolved from the V-shaped depressions of the southern low-pressure belt. They are felt most severely over the south-western parts of Western Australia, to the south-east of South Australia, in Bass Straits, including the coast line of Victoria, and on the west coast of Tasmania. Apparently the more violent wind pressures from these cyclones are experienced in their northern half, that is, in that part of them which has a north-westerly to a south-westerly circulation.

Occasionally the north-east coast of Queensland is visited by hurricanes from the north-east tropics. During the first four months of the year these hurricanes appear to have their origin in th neighbourhood of the South Pacific Islands, their path being a parabolic curve of south-westerly direction. Only a small percentage, however, reach Australia, the majority recurving in their path to the east of New Caledonia.

Very severe cyclones, locally known as "Willy Willies," are peculiar to the north-west coast of Western Australia from the months of November to April inclusive. They apparently originate in the ocean, in the vicinity of Cambridge Gulf, and travel in a south-westerly direction with continually increasing force, displaying their greatest energy near Cossack and Onslow, between latitudes 20° and 22° South. The winds in these storms, like those from the north-east tropics, are very violent and destructive,

causing great havoc amongst the pearl-fishers. The greatest velocities are usually to be found in the south-eastern quadrant of the cyclones, with north-east to east winds. After leaving the north-west coast, these storms either travel southwards, following the coast-line, or cross the continent to the Great Australian Bight. When they take the latter course their track is marked by torrential rains, as much as 29.41 inches, for example, being recorded in 24 hours at Whim Creek from one such occurrence. Falls of 10 inches and over have frequently been recorded in the northern interior of Western Australia from similar storms.

Some further notes on severe cyclones and on "Southerly Busters," a characteristic feature of the eastern part of Australia, will be found in previous issues of the Year Book (see No. 6, pp. 84, 85, 86).

15. Influences affecting Australian Climate.—Australian history does not cover a sufficient period, nor is the country sufficiently occupied, to ascertain whether or not the advance of settlement has materially affected the climate as a whole. Local changes therein, however, have taken place, a fact which suggests that settlement and the treatment of the land have a distinct effect on local conditions. For example, the mean temperature of Sydney shews a rise of two-tenths of a degree during the last twenty years, a change probably brought about by the great growth of residential and manufacturing buildings within the city and in the surrounding suburbs during that period. Again, low-lying lands on the north coast of New South Wales, that originally were seldom subject to frosts, have, with the denudation of the surrounding hills from forests, experienced annual visitations, the probable explanation being that, through the absence of trees, the cold air of the high lands now flows, unchecked and untempered, down the sides of the hills to the valleys and lower lands.

(i) *Influences of Forests on Climate.* As already indicated, forests doubtless exercise a great influence on local climate, and hence, to the extent that forestal undertakings will allow, the weather can be controlled by human agency The direct action of forests is an equalising one; thus, especially in equatorial regions, and during the warmest portion of the year, they considerably reduce the mean temperature of the air. They also reduce the diurnal extremes of shade temperatures by altering the extent of radiating surface by evaporation, and by checking the movement of air. While decreasing evaporation from the ground, they increase the relative humidity. Vegetation greatly diminishes the rate of flow-off of rain and the washing away of surface soil. Thus, when a region is protected by trees, a steadier water supply is ensured, and the rainfall is better conserved. In regions of snowfall the supply of water to rivers is similarly regulated, and without this and the sheltering influence of ravines and "gullies," watercourses supplied mainly by melting snow would be subject to alternate periods of flooding and dryness. This is borne out in the inland rivers. Thus, the River Murray, which has never been known to run dry, derives its steadiness of flow mainly through the causes above indicated.

(ii) *Direct Influences of Forests on Rainfall.* Whether forests have a direct influence on rainfall is a debatable question, some authorities alleging that precipitation is undoubtedly induced by forests, while others contend the opposite.

Sufficient evidence exists, however, to establish that, even if the rainfall has not increased, the beneficial effect of forest lands in tempering the effects of the climate is more than sufficient to disclose the importance of their protection and extension.

It is the rapid rate of evaporation, induced by both hot and cold winds, which injures crops and makes life uncomfortable on the plains. Whether the forest aids in increasing precipitation there may be doubt, but it must be admitted that it does check the winds and the rapid evaporation due to them.

Trees as wind-breaks have been successfully planted in central parts of the United States, and there is no reason why similar experiments should not be successful in many parts of our treeless interior. The belts should be planted at right angles to the direction of the prevailing parching winds, and if not more than half a mile apart will afford shelter to the enclosed areas.

In previous issues some notes on observations made in other countries were added (see Year Book No. 6, pp. 86 and 95).

16. Comparison of Rainfalls and Temperatures.—For the purpose of comparison, the following lists of rainfalls and temperatures are given for various important cities throughout the world, for the site of the Federal capital, and for the capitals of the Australian States.

COMPARISONS OF RAINFALLS AND TEMPERATURES

OF CITIES OF THE WORLD WITH THOSE OF AUSTRALIA.

Place.	Height above M.S.L.	Annual Rainfall.			Temperature.					
		Average.	Highest.	Lowest.	(a)Mean Summer.	(b)Mean Winter.	Highest on Record.	Lowest on Record.	Average Hottest Month.	Average Coldest Month.
	Ft.	Ins.	Ins.	Ins.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.
Amsterdam ..	6	27.29	40.59	17.60	63.2	36.8	90.0	4.1	64.4	35.4
Auckland ..	125	43.31	63.72	26.32	66.1	52.5	91.0	31.9	67.2	51.8
Athens	351	15.48	33.33	4.56	79.2	49.1	109.4	19.6	81.0	47.4
Bergen	72	77.09	111.58	44.49	56.8	34.2	88.5	4.8	57.9	33.6
Berlin	161	22.72	30.04	14.25	64.8	33.0	98.6	−13.0	66.0	31.8
Berne	1,877	36.30	58.23	24.69	62.2	30.1	91.4	− 3.6	64.4	28.0
Bombay	37	71.15	114.89	33.41	83.5	75.1	100.0	55.9	84.8	74.2
Breslau	482	22.52	32.56	16.50	64.1	33.5	100.0	−23.4	65.5	29.3
Brussels	328	28.35	41.18	17.73	62.6	36.0	95.5	− 4.4	63.7	34.5
Budapest ..	500	25.20	35.28	16.79	68.6	30.2	98.6	− 5.1	70.4	28.2
Buenos Ayres ..	82	38.78	79.72	20.04	72.7	50.9	103.1	22.3	73.8	50.0
Calcutta	21	61.82	98.48	38.43	85.6	68.0	108.2	44.2	86.0	66.4
Capetown ..	40	25.50	36.72	17.71	68.1	54.7	102.0	34.0	68.8	53.9
Caracas	3,420	30.03	47.36	23.70	68.3	65.3	87.8	48.2	69.2	63.7
Chicago	823	33.28	45.86	24.52	70.0	26.1	103.0	−23.0	72.4	23.7
Christchurch ..	25	25.45	35.30	13.54	61.1	43.4	95.7	21.3	61.6	42.4
Christiania ..	75	23.23	32.21	16.26	61.0	24.5	95.0	−21.1	62.6	23.9
Colombo	40	83.83	139.70	51.60	81.5	79.9	95.8	65.0	82.6	79.1
Constantinople ..	245	28.75	42.74	14.78	74.0	43.5	103.6	13.0	75.7	42.0
Copenhagen ..	10	20.79	25.83	16.47	60.4	33.3	85.5	− 3.3	61.9	32.4
Dresden	115	26.80	34.49	17.72	62.9	32.4	93.4	−15.3	64.4	31.6
Dublin	47	27.66	35.56	16.60	59.4	42.0	87.2	13.3	60.5	41.7
Dunedin	300	37.06	53.90	22.15	57.3	43.1	94.0	23.0	57.9	42.0
Durban	260	40.79	71.27	27.24	75.6	64.4	110.6	41.1	76.7	63.8
Edinburgh ..	441	25.21	32.05	16.44	55.8	38.8	87.7	5.0	57.2	38.3
Geneva	1,328	33.48	46.89	21.14	64.4	33.7	..	..	66.2	32.2
Genoa	157	51.29	108.22	28.21	73.8	46.8	94.5	16.7	75.4	45.5
Glasgow	184	38.49	56.18	29.05	52.7	41.0	84.9	6.6	58.0	38.4
Greenwich ..	149	23.50	35.54	16.38	62.0	39.5	100.0	6.9	63.5	38.5
Hong Kong ..	109	84.28	119.72	45.84	86.2	64.8	97.0	32.0	86.7	62.9
Johannesburg ..	5,750	31.63	50.00	21.66	65.4	54.4	94.0	23.3	68.2	48.9
Leipzig	384	24.69	31.37	17.10	63.1	31.5	97.3	−14.8	64.8	30.6
Lisbon	312	29.18	52.79	17.32	69.6	51.3	94.1	32.5	70.2	49.3
London (Kew) ..	18	23.80	38.20	16.64	61.2	39.8	94.0	9.4	62.7	38.9
Madras	22	49.85	88.41	18.45	89.0	76.8	113.0	57.5	89.9	76.1
Madrid	2,149	16.23	27.48	9.13	73.0	41.2	107.1	10.5	75.7	39.7
Marseilles ..	246	22.24	43.03	12.28	70.5	45.3	100.4	11.7	72.3	44.6
Moscow	526	18.94	29.28	12.07	63.4	14.7	99.5	−44.5	66.1	11.9
Naples	489	34.00	56.58	21.75	73.6	48.0	99.1	23.9	75.4	46.8
New York ..	314	44.63	58.68	33.17	71.4	31.8	102.0	−13.0	73.5	30.2
Ottawa	236	33.40	53.79	25.63	67.2	14.1	98.0	−33.0	69.7	12.0
Paris	164	22.64	29.57	16.46	63.5	37.2	101.1	−14.1	64.9	36.1
Pekin	143	24.40	36.00	18.00	77.7	26.6	114.0	− 5.0	79.2	23.6
Petrograd ..	16	21.30	29.52	13.75	61.1	17.4	97.0	−38.2	63.7	15.2
Quebec	296	40.50	53.79	32.12	63.5	12.4	96.0	−34.0	66.3	10.1
Rome	166	32.57	57.89	12.72	74.3	46.0	104.2	17.2	76.1	44.6
San Francisco ..	155	22.27	38.82	9.00	58.8	50.5	101.0	29.0	59.3	49.5
Shanghai.. ..	21	45.00	62.52	27.92	78.0	41.1	102.9	10.2	80.4	37.8
Singapore ..	8	91.99	158.68	32.71	81.2	78.6	94.2	63.4	81.5	78.3
Stockholm ..	144	19.09	28.27	11.81	59.5	27.3	96.8	−25.6	61.9	26.4
Tokio	65	61.45	86.37	45.72	74.8	39.2	97.9	17.2	77.7	37.5
Trieste	85	42.94	63.14	26.57	73.9	41.3	99.5	14.0	76.3	39.9
Vienna	663	24.50	33.90	16.50	65.7	30.4	97.7	−8.0	67.1	28.0
Vladivostock ..	55	19.54	33.60	9.39	63.9	11.0	95.7	−21.8	69.4	6.1
Washington ..	112	43.50	61.33	30.85	74.7	34.5	106.0	−15.0	76.8	32.9
Wellington (N.Z.) ..	110	49.70	67.68	30.02	61.7	48.4	88.0	30.0	62.4	47.5
Zürich	1,542	45.15	78.27	29.02	63.3	31.3	94.1	−0.8	65.1	29.5
FEDERAL CAPITAL SITE.										
Canberra (Dist.) Queanbeyan	2,000 to 2,900	22.49	41.29	10.45	(a) 68.4	(b) 44.2	102.6	18.0	68.8	43.4
THE STATE CAPITALS.										
					(a)	(b)				
Perth	197	33.91	46.73	20.21	73.1	56.0	108.4	34.2	74.2	55.2
Adelaide ..	140	21.05	30.87	11.39	73.1	53.1	116.3	32.0	74.1	51.7
Brisbane ..	137	45.65	88.26	16.17	76.6	59.7	108.9	36.1	77.0	58.4
Sydney	133	48.04	82.76	21.49	71.0	54.0	108.5	35.9	71.7	52.6
Melbourne ..	115	25.66	44.25	15.61	66.6	50.0	111.2	27.0	67.5	48.6
Hobart	177	23.59	43.39	13.43	61.7	46.8	105.2	27.0	62.4	45.5

(a) Mean of the three hottest months. (b) Mean of the three coldest months.

17. Climatological Tables.—The means, averages, extremes, totals, etc., for a number of climatological elements have been determined from long series of observations at the Australian capitals up to and including the year 1921. These are given in the following tables :—

CLIMATOLOGICAL DATA FOR PERTH, W.A.

LAT. 31° 57′ S., LONG. 115° 50′ E. HEIGHT ABOVE M.S.L. 197 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mn. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind. Greatest Number of Miles in one day.	Wind. Mean Hourly Pressure. (lbs.)	Wind. Total Miles.	Wind. Prevailing Direction.	Mean Amount of Evaporation. (inches.)	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. 3 p.m. & 9 p.m.	No. of Clear Days.
No. of yrs. over which observation extends	37	24	24	24	24	23	24	25	25
January	29.906	797 27/98	0.69	11,266	S S E	10.44	1.8	2.7	14.1
February	29.924	650 6/08	0.63	9,853	S S E	8.60	1.5	2.8	11.5
March	29.988	651 6/13	0.54	10,004	S S E	7.64	1.4	3.2	11.9
April	30.076	955 25/00	0.41	8,443	S E	4.74	1.3	4.1	8.0
May	30.076	768 5/12	0.35	8,035	E N E	2.72	2.3	5.3	5.1
June	30.058	861 27/10	0.37	7,972	N	1.73	2.3	5.9	3.1
July	30.091	949 11/99	0.39	8,444	N	1.71	2.3	5.4	4.9
August	30.084	966 15/03	0.42	8,854	W	2.36	1.7	5.3	4.8
September	30.060	864 11/05	0.47	9,033	S W	3.30	1.4	4.9	5.6
October	30.031	809 6/16	0.53	9,891	S S W	5.22	1.1	4.9	5.8
November	29.988	777 18/97	0.61	10,253	S	7.65	1.3	3.8	7.9
December	29.928	672 31/98	0.65	10,936	S	9.84	1.6	3.0	12.2
Year Totals	—	—	—	112,984	—	65.95	20.0	—	94.9
Year Averages	30.018	..	0.50	—	S	—	—	4.3	—
Year Extremes	—	966 15/8/03	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature (Fahr.). Mean Max.	Mean Min.	Mean.	Extreme Shade Temperature (Fahr.). Highest.	Lowest.	Greatest Range.	Extreme Temperature (Fahr.). Highest in Sun.	Lowest on Grass.	Mean Hours of Sunshine.
No. of yrs. over which observation extends	25	25	25	25	25	25	24	23	24
January	84.6	63.4	74.0	108.4 23/21	50.6 25/01	57.8	177.3 22/11	40.4 1/21	321.0
February	84.9	63.5	74.2	107.3 12/15	47.7 1/02	59.6	169.0 4/99	39.8 1/13	273.0
March	81.3	60.9	71.1	106.1 6/14	45.8 8/03	60.3	167.0 19/18	36.7 8/03	269.4
April	75.9	57.1	66.5	99.7 9/10	39.3 20/14	60.4	157.0 8/16	31.0 20/14	219.2
May	68.6	52.5	60.6	90.4 2/07	34.3 11/14	56.1	141.0 2/21	25.3 11/14	177.2
June	63.9	49.6	56.8	81.7 2/14	36.3 29/14	45.4	135.5 9/14	29.0 20/16	143.4
July	62.7	47.7	55.2	76.4 21/21	34.2 7/16	42.2	133.2 13/15	25.1 30/20	168.0
August	63.8	48.1	56.0	81.0 12/14	35.3 31/08	45.7	145.1 29/21	27.9 10/11	186.5
September	66.1	50.2	58.2	90.9 30/18	38.9 17/13	52.0	153.6 29/16	29.2 21/16	203.4
October	69.3	52.7	61.0	93.4 17/06	40.9 4/17	52.5	154.0 29/14	30.5 4/17	236.7
November	75.4	56.6	66.0	104.6 24/13	42.0 1/04	62.6	166.6 23/15	35.5 6/10 14/12	289.4
December	80.8	60.6	70.7	107.9 20/04	48.0 2/10	59.9	168.7 25/15	39.1 2/10	325.2
Year Averages	73.1	55.2	64.2	—	—	—	—	—	2812.4a
Year Extremes	—	—	—	108.4 28/1/21	34.2 7/7/16	74.2	177.3 22/1/14	25.1 30/7/20	—

(a) Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%) Mean 9 a.m.	Highest Mean.	Lowest Mean.	Rainfall (inches). Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Dew (inches). Mean Amount of Dew.	Mean No. Days Dew.
No. of yrs. over which observation extends	25	25	25	46	46	46	46	46	—	46
January	52	61	42	0.33	3	2.17 1879	nil (a)	1.74 28/79	—	2.5
February	54	65	46	0.48	2	2.30 1883	nil (a)	1.63 26/15	—	2.9
March	57	66	46	0.75	4	4.50 1896	nil (a)	1.53 17/76	—	5.7
April	64	72	51	1.58	7	4.97 1882	nil 1920	2.62 30/04	—	9.0
May	72	81	61	4.88	14	12.13 1879	0.98 1903	2.80 20/79	—	12.2
June	78	83	72	6.86	17	12.11 1890	2.16 1877	3.90 10/20	—	11.7
July	78	84	72	6.52	17	10.90 1902	2.42 1876	3.00 4/91	—	13.1
August	74	79	67	5.69	18	10.33 1882	0.46 1902	2.79 7/03	—	11.2
September	68	75	58	3.35	14	7.72 1903	0.62 1914	1.73 23/07	—	9.2
October	62	75	54	2.12	12	7.87 1890	0.49 1892	1.38 15/10	—	5.4
November	55	63	56	0.77	6	2.12 1880	nil 1891	1.11 30/03	—	3.9
December	52	62	44	0.58	4	3.05 1888	nil 1886	1.72 1/88	—	3.0
Year Totals	—	—	—	33.91	118	—	—	—	—	89.8
Year Averages	64	—	—	—	—	—	—	—	—	—
Year Extremes	—	84	42	—	—	12.13 5/79	nil (b)	3.90 10/8/20	—	—

(a) Various years. (b) January, February, March, November, and December, various years.

CLIMATOLOGICAL DATA FOR ADELAIDE, S.A.

LAT. 34° 56′ S., LONG. 138° 35′ E. HEIGHT ABOVE M.S.L. 140 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mn. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind. Greatest Number of Miles in One Day.	Wind. Mean Hourly Pressure. (lbs.)	Wind. Total Miles.	Wind. Prevailing Direction.	Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. 3 p.m. & 9 p.m.	No. of Clear Days.
No. of yrs. over which observation extends	65	44	44	44	44	52	50	54	50
January	29.918	758 19/99	0.34	7,893	S	9.00	2.3	3.4	8.3
February	29.953	691 22/96	0.30	6,783	S	7.34	2.0	3.4	7.1
March	30.038	628 9/12	0.25	6,735	S	5.81	2.2	3.9	6.9
April	30.121	773 10/96	0.22	6,137	S x W	3.41	1.6	5.0	4.0
May	30.124	760 9/80	0.21	6,210	N x E	2.03	1.7	5.7	1.9
June	30.095	750 12/78	0.25	6,623	N	1.24	2.1	6.1	1.6
July	30.129	674 25/82	0.25	6,777	N	1.30	1.6	5.8	1.7
August	30.098	773 31/97	0.28	7,182	N N W	1.88	2.2	5.6	2.5
September	30.040	720 2/87	0.31	7,348	W	2.85	2.4	5.2	3.2
October	30.000	768 28/98	0.34	7,896	S W x W	4.76	3.4	4.9	4.0
November	29.974	677 2/04	0.33	7,556	S S W	6.51	3.6	4.6	5.1
December	29.920	675 12/91	0.34	7,928	S S W	8.43	2.7	3.8	7.4
Year Totals	—	—	—	—	—	54.56	27.8	—	53.7
Year Averages	30.034	—	0.28	7,089	S W x S	—	—	4.8	—
Year Extremes	—	773(*a*)	—	—	—	—	—	—	—

(*a*) 10/4/96 and 31/8/97.

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.). Mean Max.	Mean Min.	Mean	Extreme Shade Temperature (Fahr.). Highest.	Lowest.	Extreme Range.	Extreme Temperature (Fahr.). Highest in Sun.	Lowest on Grass.	Mean Hours of Sunshine.
No. of yrs. over which observation extends	65	65	65	65	65	65	44	61	40
January	86.5	61.7	74.1	116.3 26/58	45.1 21/84	71.2	180.0 18/82	36.5 14/79	311.2
February	86.2	62.1	74.1	113.6 12/99	45.5 23/18	68.1	170.5 10/00	36.7 (*c*)	263.9
March	80.8	58.9	69.8	108.0 12/61	44.8 –/57	63.2	174.0 17/83	33.8 27/80	238.9
April	73.2	54.5	63.9	98.0 10/66	39.6 15/59	58.4	155.0 1/83	30.2 16/17	178.2
May	65.6	50.2	57.9	89.5 4/21	36.9 (*a*)	52.6	148.2 12/79	25.9 10/91	148.5
June	60.3	46.7	53.5	76.0 23/65	32.5 27/76	43.5	138.8 18/79	22.9 12/13	121.4
July	58.8	44.5	51.7	74.0 11/06	32.0 24/08	42.0	134.5 26/90	23.3 25/11	138.4
August	62.0	45.9	54.0	85.0 31/11	32.3 17/59	52.7	140.0 31/92	23.5 7/88	163.3
September	66.3	47.9	57.1	90.7 23/82	32.7 4/58	58.0	160.5 23/82	26.2 15/08	184.3
October	72.5	51.4	62.0	102.8 30/19	36.0 –/57	66.8	162.0 30/21	27.8 2/18	228.0
November	78.6	55.4	67.0	113.5 21/65	40.8 2/09	72.7	166.9 20/78	31.5 2/09	261.2
December	83.4	59.0	71.2	114.2 14/76	43.0 (*b*)	71.2	175.7 7/99	32.5 4/84	304.6
Year Averages	72.8	53.2	63.0	—	—	—	—	—	2,541.9*d*
Year Extremes	—	—	—	116.3 26/1/58	32.0 24/7/08	84.3	180.0 18/1/82	22.9 12/6/13	—

(*a*) 26/1895 and 24/1904. (*b*) 16/1861 and 4/1903. (*c*) 24/78 and 23/18. (*d*) Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%) Mean 9 a.m.	Highest Mean.	Lowest Mean.	Rainfall (inches). Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day	Dew (inches). Mean Amount of Dew.	Mean No. Days Dew.
No. of yrs. over which observation extends	54	54	54	83	83	83	83	83	—	50
January	38	59	30	0.72	4	4.00 1850	nil (*a*)	2.30 2/89	—	4.2
February	41	56	31	0.65	4	2.89 1919	nil (*b*)	2.24 14/13	—	5.7
March	47	58	36	1.06	6	4.60 1878	nil (*c*)	3.50 5/78	—	11.1
April	56	72	44	1.78	9	6.78 1853	0.06 1910	3.15 5/60	—	14.1
May	68	76	49	2.74	13	7.75 1875	0.20 1891	2.75 1/53	—	15.9
June	77	84	69	3.11	16	8.58 1916	0.42 1886	2.11 1/20	—	15.7
July	76	87	68	2.63	16	5.38 1865	0.37 1899	1.75 10/65	—	17.2
August	69	77	54	2.51	16	6.24 1852	0.35 1914	2.23 19/51	—	16.4
September	61	72	44	1.99	14	4.64 1840	0.45 1896	1.42 (*d*)	—	15.6
October	51	67	29	1.73	11	3.83 1870	0.17 1914	2.24 16/08	—	12.6
November	43	57	34	1.17	8	3.55 1851	0.04 1885	1.88 28/58	—	7.2
December	39	50	33	0.96	6	3.98 1861	nil 1904	2.42 23/13	—	4.8
Year Totals	—	—	—	21.05	123	—	—	—	—	140.5
Year Averages	55	—	—	—	—	—	—	—	—	—
Year Extremes	—	87	29	—	—	8.58 6/16	nil (*e*)	3.50 5/3/78	—	—

(*a*) 1848, 1849, 1878, and 1906. (*b*) 1848, 1860, &c. (*c*) 1859, &c. (*d*) 25/93 and 12/17.
(*e*) January, February, March, and December, various years.

CLIMATOLOGICAL DATA FOR BRISBANE, QUEENSLAND.

LAT. 27° 28′ S., LONG. 153° 2′ E. HEIGHT ABOVE M.S.L. 137 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mn. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.			Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. 3 p.m. & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.			
No. of yrs. over which observation extends	35	11	11	11	35	13	35	30	13
January	29.876	315 24/14	0.10	4,222	E	6.516	5.3	5.8	2.8
February	29.904	340 10/15	0.13	4,419	S E	5.291	5.1	5.7	2.1
March	29.958	305 29/16	0.09	4,086	S E & S	4.726	4.4	5.3	4.5
April	30.050	335 6/21	0.08	3,606	S	3.644	3.2	4.5	8.1
May	30.090	245 29/19	0.07	3,474	S	2.748	3.2	4.4	8.2
June	30.066	307 23/16	0.07	3,364	S		2.1	4.2	8.2
July	30.072	291 31/21	0.07	3,470	S W & S	—	2.5	3.7	11.8
August	30.097	284 6/20	0.08	3,823	S	—	3.5	3.6	11.5
September	30.040	269 19/21	0.07	3,532	S	3.689	5.7	3.6	11.8
October	30.006	325 25/18	0.09	4,048	N E	5.166	6.9	4.1	7.8
November	29.958	272 22/21	0.10	4,185	N E & N	5.922	8.1	4.8	6.1
December	29.890	295 21/13	0.11	4,561	N E	6,579	8.4	5.2	3.4
Year Totals	—	—	—	—	S to E and N E	44.281	58.4	—	86.3
Year Averages	30.001	—	0.09	3.899		—	—	4.6	—
Year Extremes	—	340 10/2/15	—	—		—	—	—	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	35	35	35	35	35	35	35	35	13
January	85.3	68.8	77.0	108.9 14/02	58.8 4/93	50.1	166.4 10/17	49.9 4/93	215.6
February	84.5	68.2	76.4	101.9 11/04	58.7 (a)	43.2	165.2 6/10	49.3 9/89	203.1
March	82.3	66.3	74.3	99.4 5/19	52.4 29/13	47.0	160.0 1/87	45.4 29/13	198.9
April	79.0	61.6	70.3	95.2 (b)	48.6 17/00	46.6	153.8 11/16	37.0 17/00	202.8
May	73.5	55.3	64.4	88.8 18/97	41.3 24/99	47.5	147.0 1/10	29.8 8/97	188.5
June	69.4	50.9	60.2	88.9 19/18	36.3 29/08	52.6	136.0 3/18	25.4 23/88	160.1
July	68.4	48.4	58.4	83.4 28/98	36.1 (c)	47.3	146.1 20/15	23.9 11/90	191.0
August	71.1	49.2	60.4	87.5 28/07	37.4 6/87	50.1	141.9 20/17	27.1 9/99	218.1
September	75.8	54.8	65.3	95.2 16/12	40.7 1/96	54.5	155.5 26/03	30.4 1/89	227.9
October	79.8	59.8	69.8	101.4 18/93	43.3 3/99	58.1	157.4 31/18	34.9 8/89	246.9
November	83.0	64.1	73.6	106.1 18/13	48.5 2/05	57.6	162.3 7/89	38.8 1/05	237.4
December	85.3	67.5	76.4	105.9 26/93	56.4 13/12	49.5	160.4 7/14	49.1 3/94	242.5
Year Averages	78.1	59.6	68.9	—	—	—	—	—	2,532.8(d)
Year Extremes	—	—	—	108.9 14/1/02	36.1 (c)	72.8	166.4 10/1/17	23.9 11/7/90	—

(a) 10 and 11/04. (b) 9/96 and 5/03. (c) 12/94 and 2/96. (d) Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%).			Rainfall (inches).					Dew (inches)	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. Days Dew.
No. of yrs. over which observation extends	35	35	35	70	62	70	70	—	—	35
January	67	79	53	6.46	14	27.72 1895	0.32 1919	18.31 21/87		4.9
February	70	82	55	6.33	14	40.39 1893	0.58 1849	8.36 16/93		5.4
March	73	85	56	5.89	15	34.04 1870	nil 1849	11.18 14/08		8.4
April	73	80	60	3.64	12	15.28 1867	0.04 1897	4.47 13/16		11.3
May	74	85	64	2.89	10	13.85 1876	nil 1846	5.62 9/79		12.3
June	74	84	67	2.65	8	14.03 1873	nil 1847	6.01 9/93		10.2
July	75	81	61	2.28	8	8.46 1889	nil 1841	3.54 (b)		11.7
August	70	80	61	2.17	8	14.67 1879	nil (a)	4.89 12/87		9.5
September	65	76	47	2.08	8	5.43 1886	0.10 1907	2.46 2/94		9.2
October	61	72	49	2.62	9	9.99 1882	0.14 1900	1.95 20/89		7.5
November	60	72	46	3.67	10	12.40 1917	nil 1842	4.46 16/86		4.4
December	63	68	52	4.97	12	13.99 1910	0.35 1865	6.60 28/71		3.7
Year Totals	—	—	—	45.65	128	—	—	—	—	98.5
Year Averages	69	—	—	—	—	—	—	—	—	—
Year Extremes	—	85	46	—	—	40.39 2/1893	nil (c)	18.31 21/1/87	—	—

(a) 1862, 1869, 1880. (b) 15/76, 16/89. (c) March, May, June, July, August, and November, various years.

CLIMATOLOGICAL DATA FOR SYDNEY, N.S.W.

LAT. 33° 52′ S., LONG. 151° 12′ E. HEIGHT ABOVE M.S.L. 133 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mn. Sea Level and Standard Gravity from 24 hourly readings.	Wind. Greatest Number of Miles in one day.	Wind. Mean Hourly Pressure. (lbs.)	Wind. Total Miles.	Wind. Prevailing Direction.	Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. 3 p.m. & 9 p.m.	No. of Clear Days.
No. of yrs. over which observation extends	63	55	55	55	55	42	62	63	58
January	29.903	721 1/71	0.36	8,130	N E	5.238	4.7	5.8	2.1
February	29.946	871 12/69	0.30	6,965	N E	4.099	4.3	6.0	1.4
March	30.012	943 20/70	0.24	6,750	N E	3.519	4.1	5.6	2.1
April	30.074	803 6/82	0.19	6,099	N E	2.505	3.9	5.1	3.0
May	30.082	758 6/98	0.24	6,324	W	1.729	3.3	4.8	3.7
June	30.058	712 7/00	0.24	7,909	W	1.406	2.2	4.8	3.9
July	30.075	930 17/79	0.30	7,090	W	1.502	2.4	4.4	4.7
August	30.070	756 22/72	0.24	6,839	W	1.858	3.2	4 0	5.2
September	30.009	964 6/74	0.30	7,096	W	2.640	4.0	4.3	4.4
October	29.972	926 4/72	0.30	7,731	N E	3.780	4.9	5.0	2.7
November	29.940	720 13/68	0.36	7,582	N E	4.516	5.5	5.6	1.8
December	29.882	938 3/84	0.36	8,016	N E	5.294	5.7	5.7	2.1
Year Totals	—	—	—	—	—	38.086	48.2	—	37.1
Year Averages	30.002	—	0.29	7,236	N E	—	—	5.1	—
Year Extremes	—	964 6/9/74	—	—	—	—	—	—	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.). Mean Max.	Mean Min.	Mean	Extreme Shade Temperature (Fahr.). Highest.	Lowest.	Extreme Range.	Extreme Temperature (Fahr.). Highest in Sun.	Lowest on Grass.	Mean Hours of Sunshine.
No. of yrs. over which observation extends	63	63	63	63	63	63	63	63	11
January	78.4	64.9	71.7	108.5 13/96	51.2 14/65	57.3	164.3 26/15	44.2 18/97	199.1
February	77.5	64.9	71.2	101.0 19/66	49.3 28/63	51.7	162.1 16/98	43.4 25/91	177.9
March	75.6	62.9	69.2	102.6 3/69	48.8 14/86	53.8	153.9 1/16	39.9 17/13	176.6
April	71.1	58.1	64.6	89.0 4/09	44.6 27/64	44.4	144.1 10/77	33.3 24/09	145.6
May	65.2	52.1	58.7	86.0 1/19	40.2 22/59	45.8	129.7 1/96	29.3 25/17	131.0
June	60.8	48.2	54.5	75.5 23/19	38.0 5/20	37.5	123.0 14/78	28.1 24/11	118.1
July	59.3	45.9	52.6	74.9 17/71	35.9 12/90	39.0	124.7 19/77	24.0 4/93	128.5
August	62.5	47.6	55.0	82.0 31/84	36.8 3/72	45.2	149.0 30/78	26.1 4/09	179.4
September	66.8	51.5	59.2	92.3 27/19	40.8 18/64	51.5	142.2 12/78	30.1 17/05	184.2
October	71.1	55.8	63.4	99.7 19/98	42.3 3/18	57.4	151.9 (a)	32.7 9/05	198.4
November	74.5	59.7	67.1	102.7 21/78	45.8 1/05	56.9	158.5 28/99	36.0 6/06	194.8
December	77.3	62.9	70.1	107.5 21/04	49.3 2/59	58.2	164.5 27/89	41.5 6/09	193.6
Year Averages	70.0	56.2	63.1	—	—	—	—	—	2,027.2b
Year Extremes	—	—	—	108.5 13/1/96	35.9 12/7/90	72.6	164.5 27/12/89	24.0 4/7/93	

(a) 30 and 31/14. (b) Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%). Mean 9 a.m.	Highest Mean.	Lowest Mean.	Rainfall (inches). Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Dew (inches). Mean Amount of Dew.	Mean No. Days Dew.
No. of yrs. over which observation extends	63	63	63	63	63	63	63	63	62	62
January	69	78	58	3.61	13.9	15.26 1911	0.42 1888	7.08 13/11	0.002	1.2
February	72	81	59	4.45	14.0	18.56 1873	0.34 1902	8.90 25/73	0.004	2.0
March	74	85	62	5.03	15.0	18.70 1870	0.42 1876	6.52 9/13	0.008	3.3
April	77	87	63	5.39	13.4	24.49 1861	0.06 1868	7.52 29/60	0.016	5.5
May	76	90	66	5.16	15.1	23.03 1919	0.18 1860	8.36 23/89	0.022	6.2
June	78	89	68	4.90	12.6	16.30 1885	0.19 1904	5.17 16/84	0.018	5.3
July	77	88	65	4.88	12.5	13.21 1900	0.12 1862	5.72 28/08	0.016	5.3
August	73	84	56	3.03	11.3	14.89 1899	0.04 1885	5.33 2/60	0.014	4.9
September	69	79	49	2.89	12.0	14.05 1879	0.08 1882	5.69 10/79	0.008	3.4
October	67	77	46	2.95	12.6	11.14 1916	0.21 1867	6.37 13/02	0.007	3.0
November	66	79	42	2.88	12.5	9.88 1865	0.07 1915	4.23 19/00	0.004	2.1
December	67	77	52	2.87	13.0	15.82 1920	0.23 1913	4.75 13/10	0.003	1.4
Year Totals	—	—	—	48.04	157.9	—	—	—	0.122	43.6
Year Averages	72	—	—	—	—	—	—	—	—	—
Year Extremes	—	90	42	—	—	24.49 April/61	0.04 Aug./85	8.90 25/2/73	—	—

CLIMATOLOGICAL DATA FOR MELBOURNE, VICTORIA.

LAT. 37° 49′ S., LONG. 144° 58′ E. HEIGHT ABOVE M.S.L. 115 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mn. Sea Level and Standard Gravity from 9 a.m., 3 & 9 p.m. readings.	Wind. Greatest Number of Miles in One Day.	Wind. Mean Hourly Pressure. (lbs.)	Wind. Total Miles.	Wind. Prevailing Direction.	Mean Amount of Evaporation (inches.)	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. 3 p.m. & 9 p.m.	No. of Clear Days.
No. of yrs. over which observation extends	64	49	49	49	49	49	14	64	14
January	29.915	583 10/97	0.29	7,345	S W, S E	6.42	1.8	5.0	7.8
February	29.963	566 8/68	0.28	6,441	S W, S E	5.06	2.4	5.0	7.2
March	30.033	677 9/81	0.22	6,398	S W, S E	3.95	1.6	5.5	5.6
April	30.104	597 7/88	0.19	5,719	S W, N W	2.36	0.9	5.9	4.4
May	30.105	693 12/65	0.19	5,958	N W, N E	1.46	0.6	6.5	3.4
June	30.074	761 13/76	0.24	6,461	N W, N E	1.10	0.9	6.7	2.2
July	30.094	755 8/74	0.23	6,482	N W, N E	1.06	0.6	6.3	3.4
August	30.065	637 14/75	0.26	6,882	N W, N E	1.48	1.0	6.3	2.9
September	29 999	617 11/72	0.29	7,108	N W, S W	2.31	1.8	6.1	3.6
October	29.969	899 5/66	0.29	7,377	S W, N W	3.34	1.9	5.9	4.4
November	29.950	734 13/66	0.29	7,083	S W, S E	4.54	2.3	5.9	3.5
December	29.898	655 1/75	0.30	7,503	S W, S E	5.75	2.1	5.5	4.4
Year Totals	—	—	—	—	—	38.83	17.9	—	52.8
Year Averages	30.014	—	0.26	6,730	S W, N W	—	—	5.9	—
Year Extremes	—	899 5/10/66	—	—	—	—	—	—	—

TEMPERATURE AND SUNSHINE.

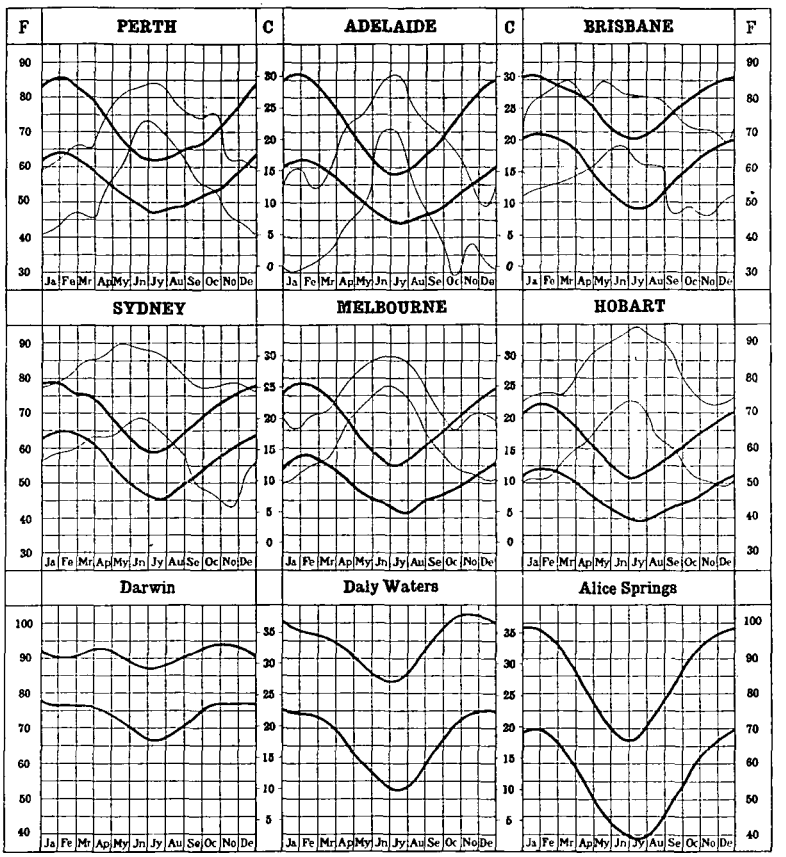
Month.	Mean Temperature (Fahr.) Mean Max.	Mean Min.	Mean.	Extreme Shade Temperature (Fahr.). Highest.	Lowest.	Extreme Range.	Extreme Temperature (Fahr.). Highest in Sun.	Lowest on Grass.	Mean Hours of Sunshine.
No. of yrs. over which observation extends	66	66	66	66	66	66	62	62	40
January	78.2	56.8	67.5	111.2 14/62	42.0 28/85	69.2	178.5 14/62	30.2 28/85	269.5
February	78.0	57.1	67.5	109.5 7/01	40.3 9/65	69.2	167.5 15/70	30.9 6/91	246.9
March	74.4	54.6	64.5	105.5 2/93	37.1 17/84	68.4	164.5 1/68	28.9 (a)	207.9
April	68.3	50.7	59.5	94.0 6/65	34.8 24/88	59.2	152.0 8/61	25.0 23/97	164.3
May	61.4	46.7	54.1	83.7 7/05	29.9 29/16	53.8	142.6 2/59	21.1 26/16	142.7
June	56.8	44.1	50.4	72.2 1/07	28.0 11/66	44.2	129.0 11/61	20.4 17/95	112.8
July	55.5	41.7	48.6	68.4 24/78	27.0 21/69	41.4	125.8 27/80	20.5 12/03	106.4
August	58.7	43.4	51.1	77.0 20/85	28.3 11/63	48.7	137.4 29/69	21.3 14/02	156.2
September	62.6	45.6	54.1	85.0 19/19	31.1 16/08	53.9	142.1 20/67	22.8 8/18	174.6
October	67.0	48.2	57.6	98.4 24/14	32.1 3/71	66.3	154.3 28/68	24.8 22/18	209.5
November	71.4	51.2	61.3	105.7 27/94	36.5 2/96	69.2	159.6 29/65	24.6 2/96	246.5
December	78.4	54.2	64.8	110.7 15/76	40.0 4/70	70.7	170.3 20/69	33.2 1/04	259.6
Year Averages	67.6	49.5	58.4	—	—	—	—	—	2296.9(b)
Year Extremes	—	—	—	111.2 14/1/62	27.0 21/7/69	84.2	178.5 14/1/62	20.4 17/6/95	—

(a) 17/1884 and 20/1897. (b) Total for year.

HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%) Mean 9 a.m.	Highest Mean.	Lowest Mean.	Rainfall (inches.) Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Dew (inches). Mean Amount of Dew.	Mean No. Days Dew.
No. of yrs. over which observation extends	14	14	14	66	66	66	66	66	—	14
January	55	65	50	1.68	7	5.68 1904	0.04 1878	2.97 9/97	—	2.5
February	61	69	53	1.70	7	6.24 1904	0.03 1870	3.37 18/19	—	3.2
March	64	71	57	2.23	9	7.50 1911	0.18 1859	3.55 5/19	—	7.5
April	71	78	66	2.23	11	6.71 1901	0.33 1908	2.28 22/01	—	8.3
May	79	84	73	2.19	13	4.31 1862	0.45 1901	1.85 7/91	—	8.1
June	82	87	77	2.10	14	4.51 1859	0.73 1877	1.74 21/04	—	7.8
July	82	86	76	1.83	14	7.02 1891	0.57 1902	2.71 12/91	—	10.1
August	76	82	70	1.85	14	3.59 1909	0.48 1903	1.87 17/81	—	7.6
September	68	76	60	2.47	14	7.93 1916	0.52 1907	2.62 12/80	—	6.4
October	62	67	56	2.62	13	7.61 1869	0.29 1914	3.00 17/69	—	6.6
November	59	69	52	2.24	11	6.71 1916	0.25 1895	2.57 16/76	—	1.8
December	57	69	51	2.32	9	7.18 1863	0.11 1904	2.62 28/07	—	1.6
Year Totals	—	—	—	25.66	136	—	—	—	—	71.5
Year Averages	68	—	—	—	—	—	—	—	—	—
Year Extremes	—	87	50	—	—	7.93 9/16	0.03 2/70	3.55 5/3/19		

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF NORMAL MAXIMUM AND MINIMUM TEMPERATURE AND HUMIDITY IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



EXPLANATION OF THE GRAPHS OF TEMPERATURE AND HUMIDITY.—In the above graphs in which the heavy lines denote "temperature" and the thin lines "humidity," the fluctuations of mean temperature and mean humidity are shewn throughout the year. These curves are plotted from the data given in the Climatological Tables hereinafter. The temperatures are shewn in degrees Fahrenheit, the inner columns giving the corresponding values in Centigrade degrees. Humidities have not been obtained for Darwin, Daly Waters, and Alice Springs.

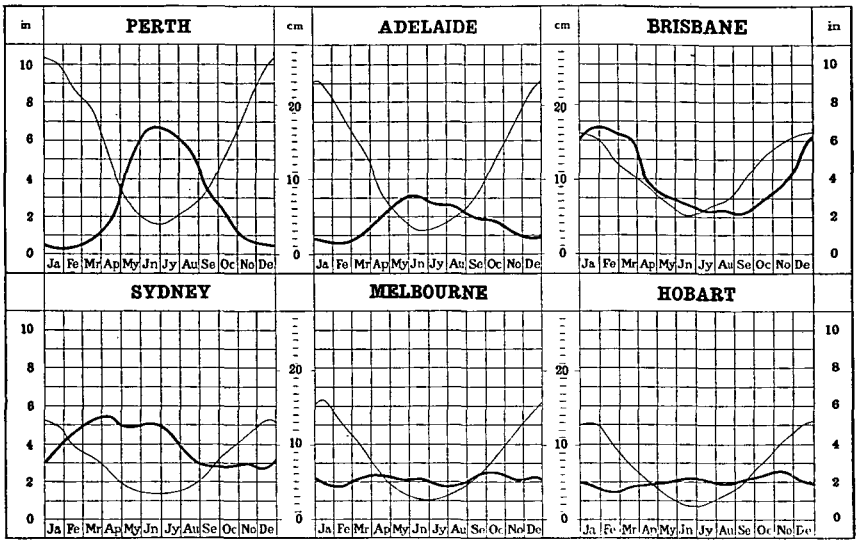
For the thin lines the degree numbers represent relative humidities, or the percentages of actual saturation (absolute saturation = 100).

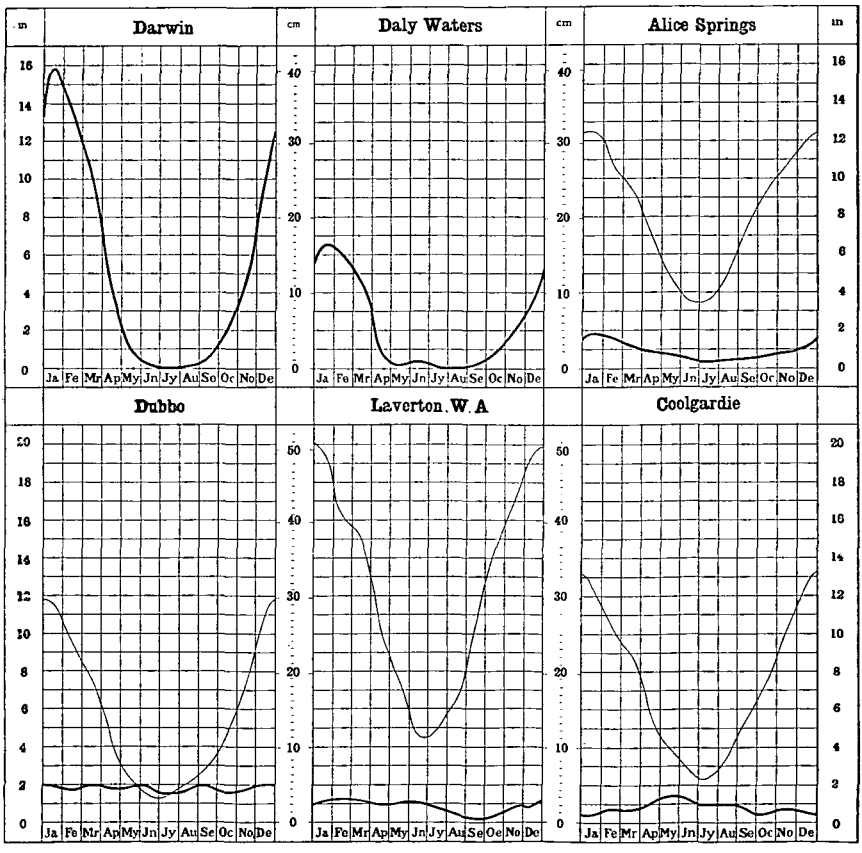
The upper temperature line represents the mean of the maximum, and the lower line the mean of the minimum results; thus the curves also shew the progression of the range between maximum and minimum temperatures throughout the year. The humidity curves shew the highest and lowest values of the mean monthly humidity at 9 a.m. recorded during a series of years.

INTERPRETATION OF THE GRAPHS.—The curves denote mean monthly values. Thus, taking for example, the temperature graphs for Perth, the mean readings of the maximum and minimum temperatures for a number of years on 1st January would give respectively about 83° Fahr. and 62° Fahr. Thus the mean range of temperature on that date is the difference, viz., 21°. Similarly, observations about 1st June would give respectively about 66° Fahr. and 51° Fahr., or a range of 15°.

In a similar manner it will be seen that the greatest mean humidity, say for March, is about 66° and the least mean humidity for the month 46°; in other words, at Perth the degree of saturation of the atmosphere by aqueous vapour for the month of March ranges between 66% and 46%.

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN RAINFALL AND MEAN EVAPORATION IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.





EXPLANATION OF THE GRAPHS OF RAINFALL AND EVAPORATION.—On the preceding graphs thick lines denote rainfall and thin lines evaporation, and shew the fluctuation of the mean rate of fall *per month* throughout the year. The results, plotted from the Climatological Tables hereinafter, are shewn in inches (see the outer columns), and the corresponding metric scale (centimetres) is shewn in the two inner columns. The evaporation is not given for Darwin and Daly Waters.

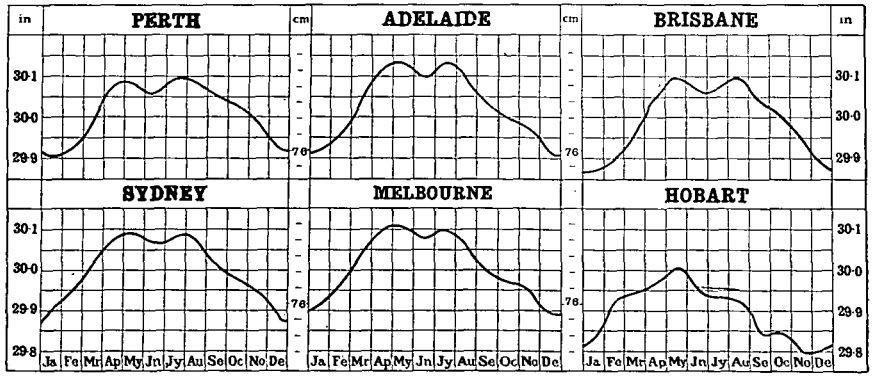
At Perth, Adelaide, Brisbane, Melbourne, Hobart, Alice Springs, and Coolgardie the results have been obtained from jacketed tanks sunk in the ground. At Sydney and Dubbo sunken tanks without water jackets are used, whilst at Laverton (W.A.) the records are taken from a small portable jacketed evaporation dish of 8 inches in diameter.

INTERPRETATION OF THE GRAPHS.—The distance for any date from the zero line to the curve represents the average number of inches, reckoned as per month, of rainfall at that date. Thus, taking the curves for Adelaide, on the 1st January the rain falls on the average at the rate of about four-fifths of an inch per month, or, say, at the rate of about 9½ inches per year. In the middle of June it falls at the rate of nearly 3 inches per month, or, say, at the rate of about 36 inches per year. At Dubbo the evaporation is at the rate of nearly 11½ inches per month about the middle of January, and only about 1½ inches at the middle of June.

TABLE SHEWING MEAN ANNUAL RAINFALL AND EVAPORATION IN INCHES AT THE PLACES SHEWN ON PRECEDING PAGE, AND REPRESENTED BY THE GRAPHS.

—	Rainfall.	Evaporation.	—	Rainfall.	Evaporation.
Perth ..	33.91	65.95	Darwin ..	61.73	—
Adelaide ..	21.05	54.56	Daly Waters ..	26.39	—
Brisbane ..	45.65	44.28	Alice Springs ..	11.21	94.24
Sydney ..	48.04	38.09	Dubbo ..	22.13	66.37
Melbourne ..	25.66	38.83	Laverton, W.A.	9.98	141.33
Hobart ..	23.59	32.67	Coolgardie ..	10.13	87.72

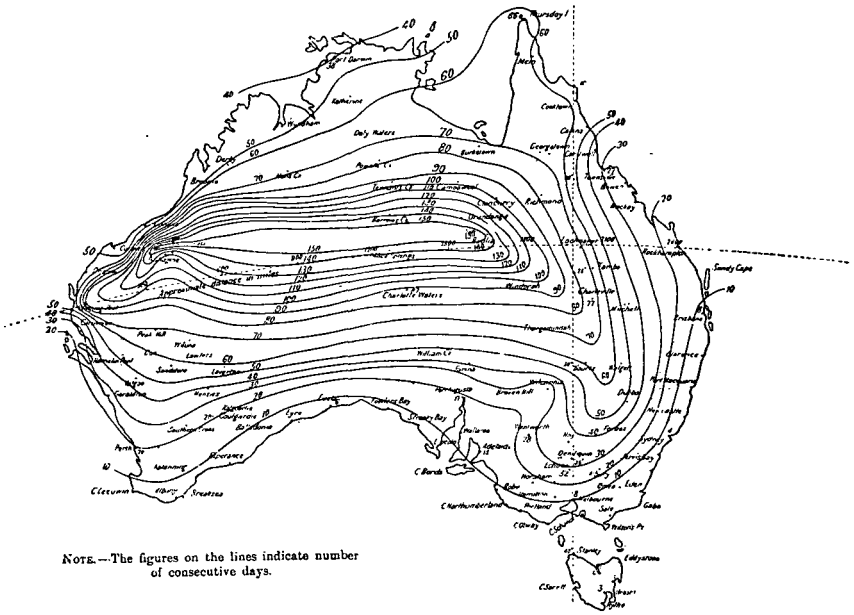
GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN BAROMETRIC PRESSURE FOR THE CAPITALS OF THE SEVERAL STATES OF THE COMMONWEALTH OF AUSTRALIA.



EXPLANATION OF THE GRAPHS OF BAROMETRIC PRESSURE.—On the above graphs the lines representing the yearly fluctuation of barometric pressure at the State capital cities are means for long periods, and are plotted from the Climatological Tables given hereinafter. The pressures are shewn in inches on about 2½ times the natural scale, and the corresponding pressures in centimetres are also shewn in the two inner columns, in which each division represents one millimetre.

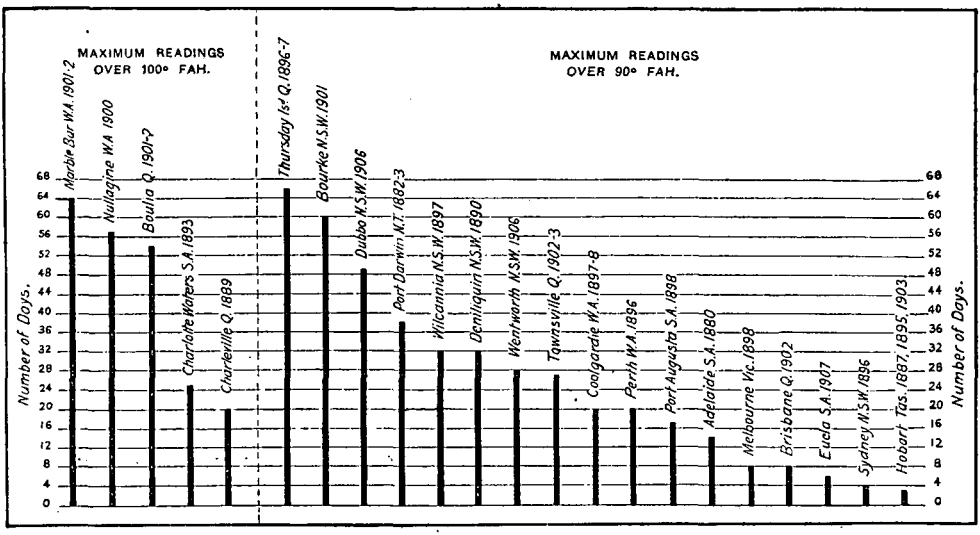
INTERPRETATION OF THE BAROMETRIC GRAPHS.—Taking the Brisbane graph for purposes of illustration, it will be seen that the mean pressure on 1st January is about 29·87 inches, and there are maxima in the middle of May and August of about 30·09 inches.

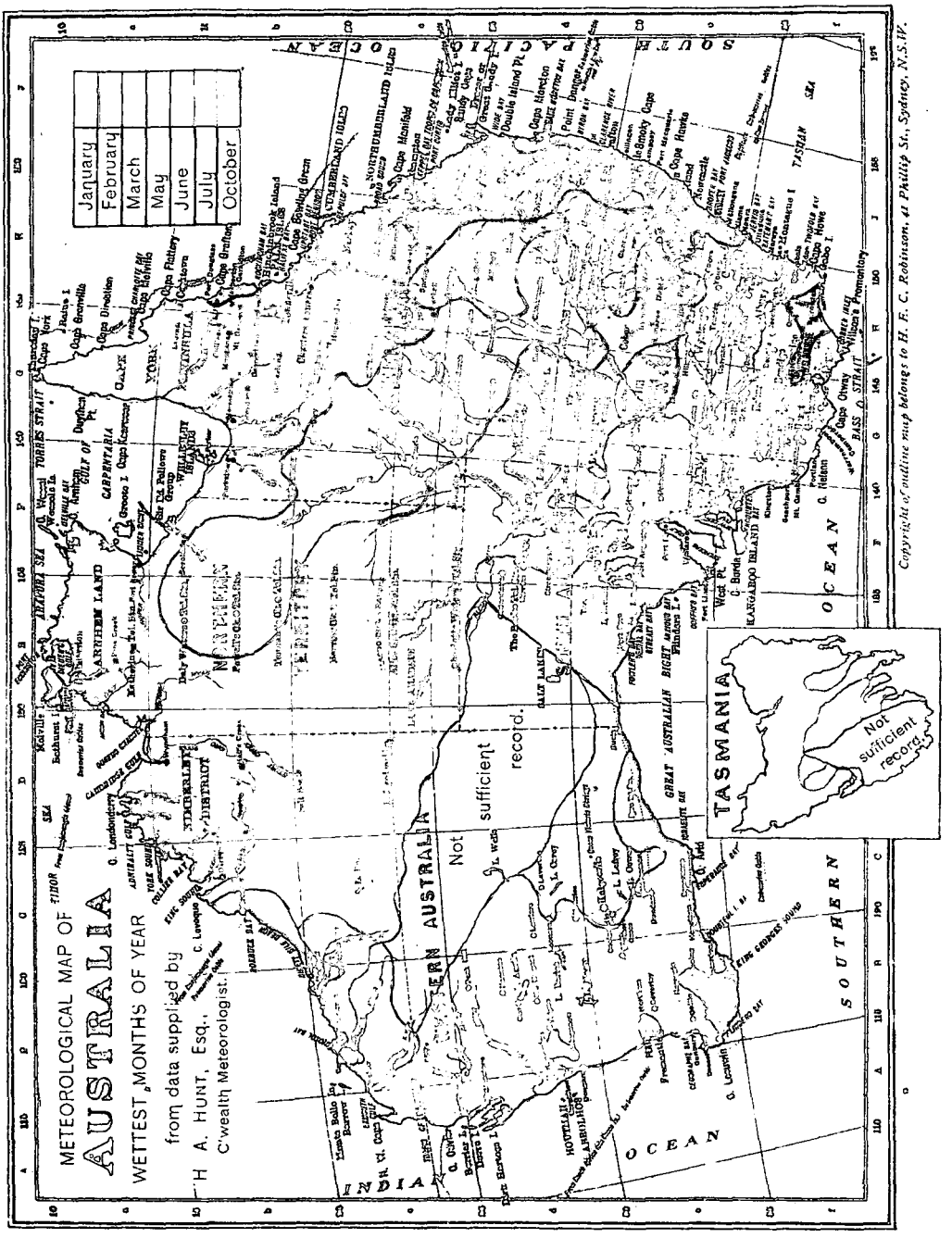
Chart indicating the area affected and period of duration of the Longest Heat Waves when the Maximum Temperature for consecutive 24 hours reached or exceeded 90° Fah.



NOTE.—The figures on the lines indicate number of consecutive days.

Diagram showing the greatest number of consecutive days on which the Temperature in the shade was over 100° and also over 90° at the places indicated.





METEOROLOGICAL SUB-DIVISIONS.

WEST AUSTRALIA.

No.
1. East Kimberley.
2. West Kimberley.
3. North-West.
4. Gascoyne.
5. South-West.
6. Eucla.
7. Eastern.

SOUTH AUSTRALIA.

8. Northern Territory.
9. Far North and N.W.
10. West.

No.
11. Upper North.
12. North-East.
13. Lower North.
14. Central.
15. Murray Valley.
16. South-East.

QUEENSLAND.

17. Peninsular.
18. Gulf.
19. Far West.
20. Central.
21. Nth-East Coast.

No.
22. Central Coast.
23. South-East Coast.
24. Darling Downs.
25. Maranoa.
26. South-West.

NEW SOUTH WALES.

27. Western.
28. North-West Plain.
29. North-West Slope.
30. Northern Tableland
31. North Coast.
32. Hunter & Manning.

No.
33. Central Tableland.
33a. Metropolitan.
34. Cent. Westn. Slope.
35. Cent. Westn. Plain.
36. Riverina.
37. South-West Slope.
38. Southern Tableland
39. South Coast.

VICTORIA.

40. Gippsland.
41. North-East.
42. Central.

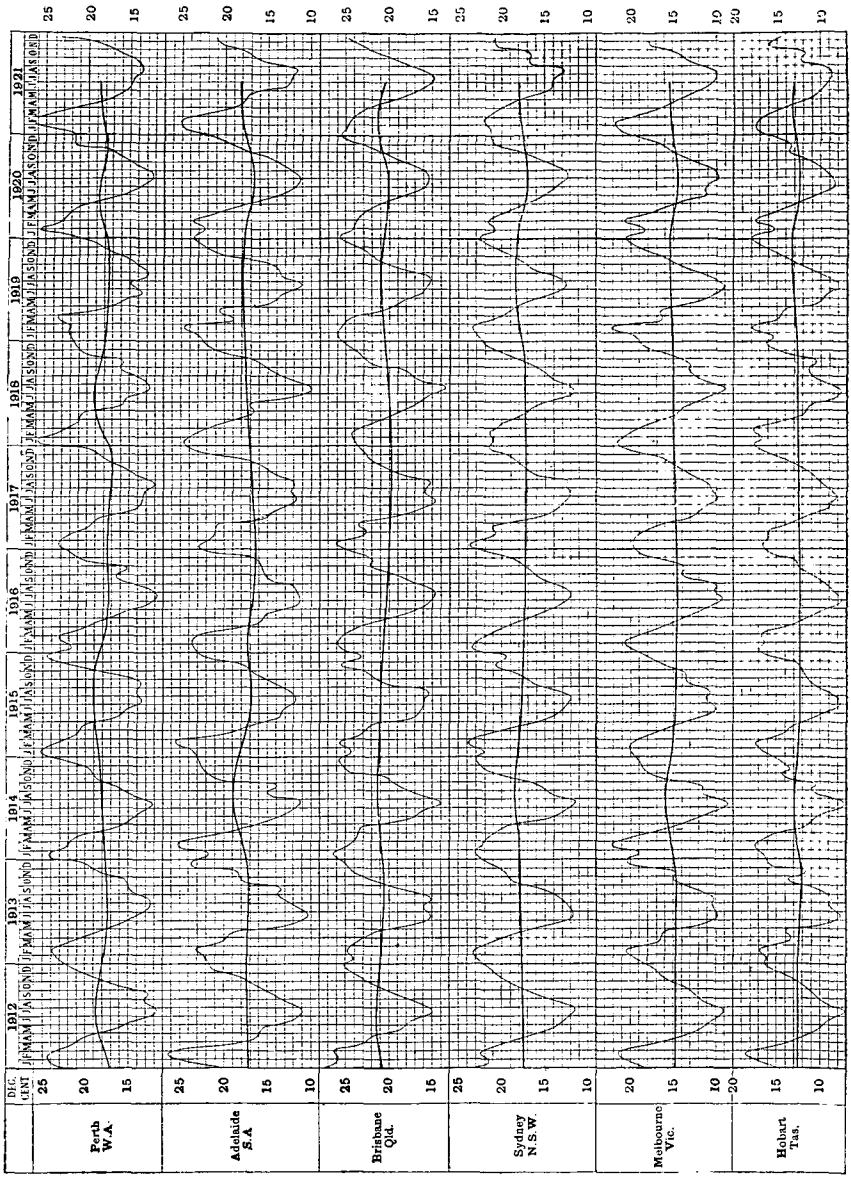
No.
43. North Central.
44. Northern Country.
45. Mallee.
46. Winnmera.
47. Western.

TASMANIA.

48. Northern.
49. W. Coast Mt. Region
50. Central Plateau.
51. Midland.
52. East Coast.
53. Derwent.
54. South-Eastern.

The above are the meteorological sub-divisions adopted by H. A. HUNT, Esq., C'wealth. Meteorologist.

GRAPHS SHEWING THE NORMAL MONTHLY, AND NORMAL ANNUAL TEMPERATURES OF THE PRINCIPAL AUSTRALIAN CITIES FROM 1912 TO 1921.

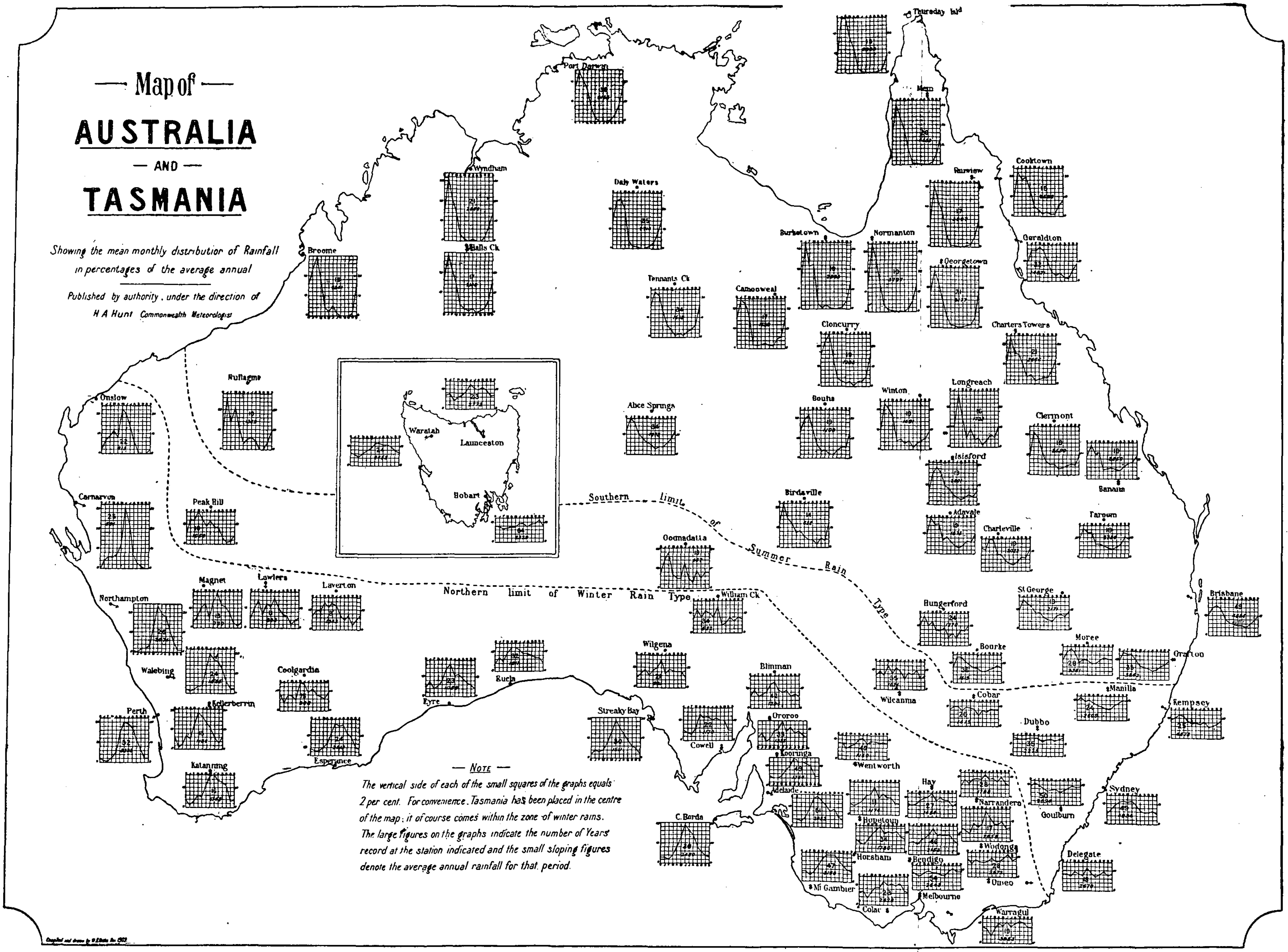


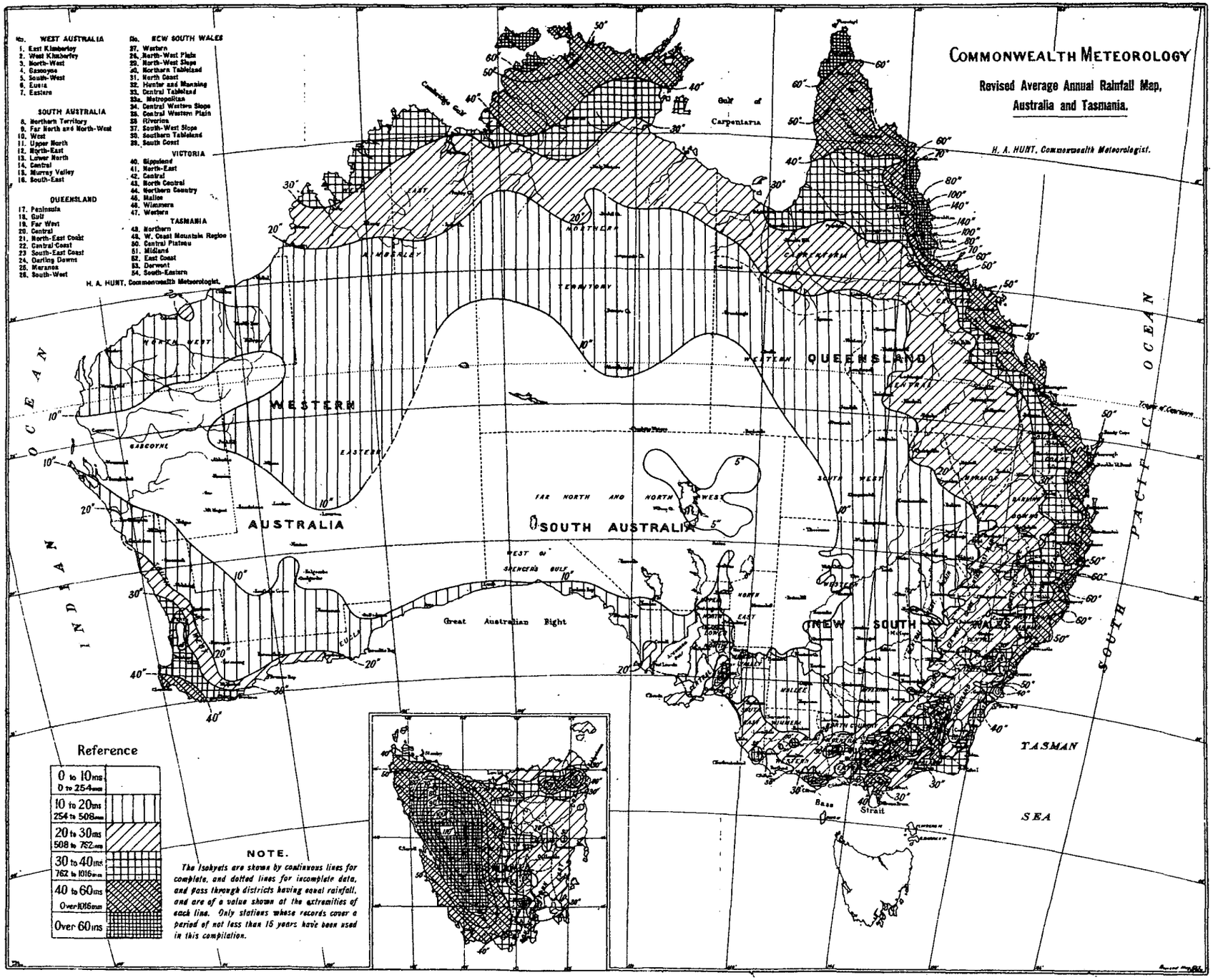
EXPLANATION OF GRAPHS.

The six light continuous curves shew the fluctuations of mean monthly temperatures of the Australian capitals from 1912 to 1921.

The six heavy curves similarly shew the fluctuations of the mean annual temperatures of the Australian capitals from 1912 to 1921.

The base of each small square denotes one month, and the vertical side 1° Centigrade or 1·8° Fahrenheit.


Map of
AUSTRALIA
AND
TASMANIA
Showing the mean monthly distribution of Rainfall in percentages of the average annual
Published by authority, under the direction of H A Hunt Commonwealth Meteorologist
NOTE
The vertical side of each of the small squares of the graphs equals 2 per cent. For convenience, Tasmania has been placed in the centre of the map; it of course comes within the zone of winter rains.
The large figures on the graphs indicate the number of Years' record at the station indicated and the small sloping figures denote the average annual rainfall for that period.
Southern limit of Summer Rain Type
Northern limit of Winter Rain Type
Thursday Isl^d
Port Darwin
Wyndham
Daly Waters
Broome
Halls Ck
Tennants Ck
Camooweal
Burketown
Normanton
Georgetown
Cooktown
Geraldton
Charters Towers
Cloncurry
Onslow
Nullagine
Abce Springs
Boulia
Winton
Longreach
Clermont
Banana
Isisford
Adavale
Charleville
Waratah
Launceston
Hobart
Carnarvon
Peak Hill
Oodnadatta
Birdsville
Taroom
Northampton
Magnet
Lawlers
Laverton
William Ck
Hungerford
St George
Brisbane
Walebing
Coolgardie
Kellerberrin
Perth
Katanning
Esperance
Eyre
Eucla
Wilgena
Streaky Bay
Cowell
Blinman
Ororoo
Kooringa
Adelaide
Wilcannia
Bourke
Cobar
Moree
Grafton
Manilla
Kempsey
Dubbo
Wentworth
Hay
Narrandera
Goulburn
Sydney
Hopetoun
Horsham
Bendigo
Wodonga
Omeo
Mt Gambier
Melbourne
Colac
Warragul
Delegate
C. Borda


COMMONWEALTH METEOROLOGY
Revised Average Annual Rainfall Map, Australia and Tasmania.
H. A. HUNT, Commonwealth Meteorologist.
No. WEST AUSTRALIA
1. East Kimberley
2. West Kimberley
3. North-West
4. Gascoyne
5. South-West
6. Eucla
7. Eastern
SOUTH AUSTRALIA
8. Northern Territory
9. Far North and North-West
10. West
11. Upper North
12. North-East
13. Lower North
14. Central
15. Murray Valley
16. South-East
QUEENSLAND
17. Peninsula
18. Gulf
19. Far West
20. Central
21. North-East Coast
22. Central Coast
23. South-East Coast
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31. North Coast
32. Hunter and Manning
33. Central Tableland
33a. Metropolitan
34. Central Western Slope
35. Central Western Plain
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49. Northern
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50. Central Plateau
51. Midland
52. East Coast
53. Derwent
54. South-Eastern
H. A. HUNT, Commonwealth Meteorologist.
INDIAN OCEAN
SOUTH PACIFIC OCEAN
TASMAN SEA
WESTERN AUSTRALIA
SOUTH AUSTRALIA
WESTERN QUEENSLAND
NEW SOUTH WALES
Great Australian Bight
Gulf of Carpentaria
Bass Strait
Reference
0 to 10ins 0 to 254mm
10 to 20ins 254 to 508mm
20 to 30ins 508 to 762mm
30 to 40ins 762 to 1016mm
40 to 60ins Over 1016mm
Over 60ins
NOTE.
The Isohyets are shown by continuous lines for complete, and dotted lines for incomplete data, and pass through districts having equal rainfall, and are of a value shown at the extremities of each line. Only stations whose records cover a period of not less than 15 years have been used in this compilation.

CLIMATOLOGICAL DATA FOR HOBART, TASMANIA.

LAT. 42° 53′ S., LONG. 147° 20′ E. HEIGHT ABOVE M.S.L. 177 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mn. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation (inches).	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. 3 p.m. & 9 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	37	11	11	11	17	11	14	59	15
January	29.837	500 30/16	0.19	5,924	N W & S E	5.317	0.6	5.9	2.9
February	29.927	393 19/13	0.13	4,474	S E & N	3.885	1.3	5.9	2.7
March	29.940	407 16/21	0.13	4,861	N & S E	3.023	1.3	5.9	2.0
April	29.959	432 7/17	0.13	4,841	N W & S E	2.036	0.9	6.0	1.6
May	29.991	411 3/16	0.12	4,677	N & N W	1.375	0.6	6.0	2.1
June	29.939	569 27/20	0.13	4,790	N & N W	0.885	0.6	6.1	1.5
July	29.929	425 16/21	0.12	4,790	N & N W	0.918	0.6	5.7	2.7
August	29.927	459 30/11	0.13	4,951	N & N W	1.209	0.6	5.9	2.1
September	29.847	516 26/15	0.19	5,662	N & N W	2.042	1.0	6.1	1.9
October	29.843	461 8/12	0.18	5,728	N W & S E	3.207	0.8	6.3	1.7
November	29.801	508 18/15	0.19	5,788	N W & S E	4.074	0.9	6.3	1.7
December	29.811	486 30/20	0.18	5,732	N W & S E	4.695	1.3	6.2	1.2
Year Totals	—	—	—	62,218	—	32.666	10.5	—	24.1
Year Averages	29.896	—	0.15	—	N	—	—	6.0	—
Year Extremes	—	569 27/6/20	—	—	—	—	—	—	—

TEMPERATURE AND SUNSHINE.

Month.	Mean Temperature (Fahr.).			Extreme Shade Temperature (Fahr.).		Extreme Range.	Extreme Temperature (Fahr.).		Mean Hours of Sunshine.
	Mean Max.	Mean Min.	Mean.	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	51	51	51	75	75	75	34	54	27
January	71.4	53.0	62.2	105.0 1/00	40.3 (a)	64.7	160.0 (b)	30.6 19/97	210.0
February	71.5	53.3	62.4	104.4 12/99	39.0 20/87	65.4	165.0 24/98	28.3 –/87	176.6
March	68.0	50.8	59.4	98.8 5/46	36.0 31/05	62.8	150.0 3/05	27.5 35/02	169.7
April	62.7	47.6	55.2	90.0 2/56	30.0 25/56	60.0	142.0 18/93	25.0 –/86	137.4
May	57.3	43.6	50.4	77.5 1/41	29.2 20/02	48.3	128.0 (d)	20.0 19/02	130.4
June	52.8	41.0	46.9	75.0 7/74	28.0 22/79	47.0	122.0 12/94	21.0 6/87	101.0
July	51.9	39.2	45.5	72.0 22/77	27.0 18/66	45.0	118.7 19/96	18.7 16/86	123.1
August	55.0	41.0	48.0	77.0 3/76	30.0 10/73	47.0	129.0 –/87	20.1 7/09	139.5
September	58.8	43.1	51.0	80.0 9/72	30.0 12/41	50.0	138.0 23/03	22.7 –/86	143.0
October	62.7	45.4	54.1	92.0 24/14	32.0 12/89	60.0	156.0 9/03	23.8 (e)	167.7
November	66.2	48.3	57.3	98.0 20/88	35.2 5/13	62.8	158.0 18/21	26.0 1/08	194.9
December	69.5	51.2	60.4	105.2 30/97	38.0 13/06	67.2	161.0 24/20	27.2 –/86	191.7
Year Averages	62.3	46.5	54.4	—	—	—	—	—	1,885.0(c)
Year Extremes	—	—	—	105.2 30/12/97	27.0 18/7/66	78.2	165.0 24/2/98	18.7 16/7/86	—

(a) 3/72 and 2/06. (b) 5/86 and 13/05. (c) Total for year. (d) –/88 and –/92. (e) 1/86 and –/99.

HUMIDITY, RAINFALL, AND DEW.

Month.	Rel. Hum. (%)			Rainfall (inches).					Dew (inches)	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. days Dew
No. of yrs. over which observation extends	38	38	38	79	78	79	79	55	—	12
January	63	77	51	1.78	9	5.91 1893	0.03 1841	2.96 30/16	—	0.9
February	65	80	51	1.43	8	9.15 1854	0.07 1847	4.50 25/54a	—	2.2
March	69	78	58	1.69	10	7.60 1854	0.02 1843	2.79 5/19	—	4.1
April	74	84	61	1.88	11	6.50 1909	0.07 1904	5.02 20/09	—	10.0
May	78	88	68	1.86	13	6.37 1905	0.10 1843	3.22 14/58	—	12.9
June	82	92	68	2.19	14	8.15 1889	0.22 1852	4.11 14/89	—	7.1
July	80	88	72	2.15	14	5.93 1849	0.30 1850	2.00 27/78	—	7.5
August	77	85	64	1.84	14	10.16 1858	0.23 1854	4.35 12/58	—	7.6
September	72	82	60	2.12	14	7.14 1844	0.39 1847	3.50 29/44	—	4.2
October	67	80	51	2.21	15	6.67 1906	0.26 1850	2.58 4/06	—	3.1
November	64	78	50	2.48	14	8.92 1849	0.16 1868	3.97 6/49	—	1.5
December	61	79	49	1.96	11	9.00 1875	0.11 1842	2.48 13/16	—	0.9
Year Totals	—	—	—	23.59	147	—	—	—	—	62.0
Year Averages	71	—	—	—	—	—	—	—	—	—
Year Extremes	—	92	49	—	—	10.16 8/1858	0.02 3/1843	5.02 20/4/09	—	—

(a) 4.18 on 26/54 also.