

Days

BAROMETER

Days	1	2	3	4	5	6	7	8	9	10	11	Noon	1	2	3	4	5	6	7	8	9	10	11	MIDT.	Days
1	29.490	29.529	29.566	29.603	29.627	29.647	29.653	29.673	29.685	29.678	29.660	29.621	29.551	29.526	29.515	29.445	29.380	29.367	29.320	29.309	29.203	29.120	29.116	29.092	
2	.071	.109	.161	.205	.210	.228	.225	.205	.228	.226	.201	.191	.215	.196	.206	.200	.200	.190	.196	.191	.191	.205	.183	.198	
3	.193	.223	.243	.246	.245	.255	.236	.233	.205	.188	.163	.159	.106	.086	.067	.061	.049	.047	.047	.044	.044	.046	.046	.047	
4	.054	.061	.064	.070	.072	.081	.101	.119	.131	.153	.160	.158	.161	.171	.178	.208	.224	.249	.275	.304	.335	.369	.408	.437	
5	.473	.521	.546	.584	.615	.629	.656	.671	.688	.694	.689	.661	.607	.596	.582	.594	.617	.643	.659	.657	.666	.674	.675	.675	
6	.662	.667	.676	.672	.675	.684	.686	.697	.707	.726	.730	.730	.736	.744	.757	.752	.770	.777	.787	.802	.803	.816	.817	.807	
7	.815	.827	.823	.815	.819	.806	.797	.806	.817	.751	.750	.745	.701	.391	.396	.378	.351	.332	.321	.306	.293	.291	.279	.256	
8	.576	.566	.552	.547	.526	.522	.507	.496	.492	.482	.462	.439	.411	.391	.396	.378	.351	.332	.321	.306	.293	.291	.279	.256	
9	.285	.225	.223	.242	.265	.273	.313	.366	.406	.446	.501	.517	.586	.886	.889	.889	.886	.889	.874	.874	.874	.874	.874	.874	
10	.750	.762	.776	.787	.799	.815	.816	.833	.852	.866	.874	.881	.886	.889	.889	.886	.889	.874	.874	.874	.874	.874	.874	.874	
11	.819	.790	.750	.748	.706	.662	.629	.606	.593	.578	.560	.523	.471	.428	.393	.377	.347	.304	.281	.262	.240	.216	.194	.190	
12	.360	.351	.353	.343	.335	.343	.356	.369	.377	.392	.407	.412	.421	.428	.450	.454	.476	.504	.524	.536	.572	.577	.598	.12	
13	.593	.627	.658	.653	.676	.682	.702	.693	.690	.659	.659	.599	.468	.488	.488	.513	.533	.550	.564	.578	.570	.583	.569	.14	
14	.339	.325	.314	.330	.342	.361	.378	.391	.415	.405	.440	.458	.468	.488	.488	.513	.533	.550	.564	.578	.570	.583	.569	.15	
15	.551	.534	.495	.452	.416	.365	.323	.302	.268	.242	.234	.247	.281	.281	.281	.281	.281	.281	.281	.281	.281	.281	.281	.16	
16	.114	.089	.078	.060	.061	.058	.057	.058	.045	.029	.006	.289	.289	.289	.289	.289	.289	.289	.289	.289	.289	.289	.289	.17	
17	.002	.011	.012	.027	.043	.058	.089	.106	.134	.177	.205	.221	.281	.281	.281	.281	.281	.281	.281	.281	.281	.281	.281	.18	
18	29.392	29.348	29.305	29.271	29.264	29.245	29.196	1.46	.092	.040	.28.982	.28.912	.28.881	.28.851	.28.824	.28.791	.28.761	.28.734	.28.705	.28.645	.28.584	.28.462	.28.400		
19	28.848	28.889	28.895	28.909	28.932	28.941	28.942	0.16	.045	.095	29.141	29.187	.28.911	.28.940	.28.941	.28.941	.28.941	.28.941	.28.941	.28.941	.28.941	.28.941	.28.941		
20	29.424	29.391	29.321	29.290	29.235	29.181	29.130	0.58	.041	.033	.025	.28.987	.29.641	.29.408	.29.441	.29.465	.29.470	.29.485	.29.484	.29.481	.29.462	.29.462	.29.462		
21	.356	.388	.413	.444	.466	.485	.506	.527	.554	.574	.608	.29.618	.29.618	.29.618	.29.618	.29.618	.29.618	.29.618	.29.618	.29.618	.29.618	.29.618	.29.618		
22	.918	.934	.930	.924	.922	.910	.914	.908	.902	.887	.871	.871	.871	.871	.871	.871	.871	.871	.871	.871	.871	.871	.871		
23	.799	.786	.765	.754	.738	.742	.749	.757	.764	.778	.781	.781	.781	.781	.781	.781	.781	.781	.781	.781	.781	.781	.781		
24	29.807	29.800	29.801	29.795	29.792	29.792	29.796	29.796	29.796	29.796	29.796	29.796	29.796	29.796	29.796	29.796	29.796	29.796	29.796	29.796	29.796	29.796			
25	30.163	30.148	30.144	30.129	30.118	30.099	30.099	30.099	30.099	30.099	30.099	30.099	30.099	30.099	30.099	30.099	30.099	30.099	30.099	30.099	30.099	30.099			
26	29.719	29.793	29.746	29.746	29.746	29.746	29.746	29.746	29.746	29.746	29.746	29.746	29.746	29.746	29.746	29.746	29.746	29.746	29.746	29.746	29.746	29.746			
27	30.063	30.087	30.100	30.129	30.166	30.191	30.191	30.191	30.191	30.191	30.191	30.191	30.191	30.191	30.191	30.191	30.191	30.191	30.191	30.191	30.191	30.191			
28	.350	.348	.369	.368	.341	.308	.308	.308	.308	.308	.308	.308	.308	.308	.308	.308	.308	.308	.308	.308	.308	.308	.308		
29	30.107	30.088	30.067	30.037	30.015	30.015	30.015	30.015	30.015	30.015	30.015	30.015	30.015	30.015	30.015	30.015	30.015	30.015	30.015	30.015	30.015	30.015			
30	29.931	29.946	29.959	29.977	29.992	30.009	30.029	30.039	30.052	30.082	30.099	30.120	.3019	.3019	.3019	.3019	.3019	.3019	.3019	.3019	.3019	.3019	.3019		
31	30.142	30.159	30.163	30.164	30.177	30.183	30.184	30.190	30.192	30.200	30.200	30.199	.3019	.3019	.3019	.3019	.3019	.3019	.3019	.3019	.3019	.3019	.3019		

DRY BULB THERMOMETER 41 FEET ABOVE GROUND

Days	1	2	3	4	5	6	7	8	9	10	11	Noon	1	2	3	4	5	6	7</th

ABERDEEN OBSERVATORY LAT. 57° 10' N LONG. 2° 6' W.

HOURLY VALUES January 1874

DAYS

DAYS	WIND DIRECTION IN NUMBERS { 8-E, 24-W. 16-S, 32-N. }											
	1	2	3	4	5	6	7	8	9	10	NOON	1
D	V	D	V	D	V	D	V	D	V	D	V	
1	19	9.5	22	13	22	12	22	10.5	22	14	21	12
2	19	29	21	30	21	23	19	19	19	18	14	19
3	19	23	20	25	20	24	20	15	20	17	12	16
4	25	5.5	24	7.5	24	8.5	24	4	24	4.5	24	5.5
5	26	18	26	19	26	17	26	14	26	15	20	11
6	21	16	21	18	20	9.5	19	6.5	18	10.5	16	10.5
7	16	6.5	20	6.5	17	9.5	19	7.5	15	10.5	18	11
8	14	24	15	23	15	20	14	21	15	21	15	20
9	14	22	15	16	18	11	16	17	16	13	16	13
10	17	5.5	18	4.5	18	7.5	19	6.5	18	7.5	16	6.5
11	18	10.5	17	10.5	18	12	17	8.5	15	20	10.5	18
12	22	7.5	21	8.5	22	10.5	22	9.5	20	18	20	18
13	26	3.2	24	17	25	23	24	24	11	23	19	22
14	22	13	22	11	24	20	22	19	23	18	21	12
15	18	10.5	16	8.5	16	9.5	16	8.5	16	10.5	18	10.5
16	17	22	16	23	15	22	16	13	15	18	11	16
17	20	10.5	20	8.5	16	9.5	18	13	19	10.5	19	14
18	16	17	18	23	18	24	17	25	18	20	16	13
19	20	24	20	20	21	22	21	21	23	23	23	23
20	20	24	20	20	21	22	21	21	23	23	23	23
21	21	24	20	20	21	22	21	21	23	23	23	23
22	21	22	16	23	15	22	16	13	15	19	14	19
23	17	18	21	19	22	20	20	17	19	20	16	13
24	22	12	17	7.5	18	8.5	15	10.5	14	12	18	13
25	19	19	17	25	16	21	16	11	20	19	16	13
26	24	19	5.5	19	5.5	19	7.5	20	19	17	10.5	18
27	25	21	12	20	12	20	9.5	16	19	17	10.5	18
28	26	20	19	20	24	19	26	17	23	23	23	23
29	25	21	26	28	26	27	26	15	23	24	24	24
30	26	4	26	3	26	2	26	5.5	20	24	24	24
31	19	9.5	22	4.5	22	3	22	4.5	21	4	21	4.5

DAYS	AND VELOCITY IN MILES PER HOUR												MIDT.	DAYS
	2	3	4	5	6	7	8	9	10	11	MIDT.	D		
D	V	D	V	D	V	D	V	D	V	D	V	D	V	
1	14	26	16	21	17	28	18	37	15	36	14	18	17	30
2	19	29	19	27	19	28	20	31	19	30	19	29	19	27
3	24	10.5	24	10.5	24	8.5	24	11	25	12	25	11	25	10
4	22	18	5.5	22	4.5	22	4.5	22	5.5	22	8.5	24	13	16
5	18	15	18	19	19	17	19	17	19	14	17	14	17	25
6	20	8.5	20	7.5	20	9.5	18	8.5	21	14	19	12	19	15
7	15	24	15	20	15	15	14	16	11	15	16	21	15	23
8	15	24	14	21	14	21	14	21	15	20	16	20	15	23
9	19	24	14	21	14	21	14	21	15	20	16	20	15	23
10	19	24	14	21	14	21	14	21	15	20	16	20	15	23
11	17	21	17	21	17	21	17	21	18	20	17	20	17	20
12	17	21	17	21	17	21	17	21	18	20	17	20	17	20
13	17	21	17	21	17	21	17	21	18	20	17	20	17	20
14	17	21	17	21	17	21	17	21	18	20	17	20	17	20
15	17	21	17	21	17	21	17	21	18	20	17	20	17	20
16	17	21	17	21	17	21	17	21	18	20	17	20	17	20
17	17	21	17	21	17	21	17	21	18	20	17	20	17	20
18	17	21	17	21	17	21	17	21	18	20	17	20	17	20
19	17	21	17	21	17	21	17	21	18	20	17	20	17	20
20	17	21	17	21	17	21	17	21	18	20	17	20	17	20
21	17	21	17	21	17	21	17	21	18	20	17	20	17	20
22	17	21	17	21	17	21	17	21	18	20	17	20	17	20
23	17	21	17	21	17	21	17	21	18	20	17	20	17	20
24	17	21	17	21	17	21	17	21	18	20	17	20	17	20
25	17	21	17	21	17	21	17	21	18	20	17	20	17	20
26	17	21	17	21	17	21	17	21	18	20	17	20	17	20
27	17	21	17	21	17	21	17	21	18	20	17	20	17	20
28	17	21	17	21	17	21	17	21	18	20	17	20	17	20
29	17	21	17	21	17	21	17	21	18	20	17	20	1	

VALENCIA OBSERVATORY LAT 51° 55' N LONG 10° 18' W.

BAROMETER

DAYS	1	2	3	4	5	6	7	8	9	10	11	NOON	1
1	30.050	30.072	30.093	30.092	30.090	30.091	30.073	30.071	30.055	30.040	30.010	29.978	29.929
2	29.750	29.755	29.753	29.759	29.758	29.770	29.789	29.800	29.809	29.826	.814	.805	
3	-475	-426	-393	-372	-392	-416	-440	-478	-483	-493	-476	-459	
4	29.509	29.522	29.517	29.599	29.649	29.698	29.701	29.717	29.799	29.815	29.825	29.847	29.853
5	30.022	30.032	30.035	30.043	30.048	30.056	30.060	30.072	30.089	30.116	30.123	30.122	
6	30.231	30.230	30.241	30.242	30.245	30.242	30.247	30.266	30.280	30.294	30.284	30.265	
7	29.957	29.915	29.885	29.839	29.792	29.751	29.709	29.687	29.651	29.624	29.557	29.520	
8	-442	-432	-431	-411	-390	-377	-369	-352	-357	-355	-366	-351	
9	-463	-469	-486	-489	-504	-510	-539	-29.557	-29.588	-29.629	-29.660	-29.681	-29.698
10	29.939	29.945	29.956	29.962	29.981	29.998	30.010	30.039	30.073	30.096	30.118	30.123	30.121
11	30.141	30.123	30.107	30.099	30.091	30.079	30.081	30.076	30.063	30.051	.028	.006	
12	29.887	29.850	29.885	29.883	29.881	29.895	29.911	29.930	29.948	29.972	29.997	.006	.008
13	30.078	30.076	30.056	30.056	30.050	30.042	30.045	30.056	30.071	30.073	30.057		
14	30.003	29.988	29.985	29.961	29.947	29.925	29.933	29.929	29.937	29.935	29.947	29.937	29.923
15	29.725	.705	.689	.667	.649	.637	.625	.605	.597	.566	.558	.524	.505
16	.654	.654	.659	.664	.664	.660	.652	.634	.633	.638	.637	.628	.622
17	.646	.602	.544	.562	.602	.638	.658	.674	.688	.710	.721	.729	.732
18	.571	.549	.531	.477	.467	.429	.413	.403	.403	.413	.442	.482	
19	.586	.571	.567	.540	.513	.506	.513	.507	.451	.495	.511	.521	.486
20	.324	.301	.281	.241	.200	.148	.136	.29.191	.29.288	.29.381	.29.439	.29.492	.29.532
21	29.893	29.912	29.925	29.941	29.955	29.972	29.987	30.011	30.041	30.082	30.101	30.128	
22	30.293	30.292	30.291	30.290	30.291	30.291	30.291	30.291	30.291	30.291	30.291	30.291	
23	.177	.165	.157	.147	.145	.145	.131	.141	.151	.153	.169	.157	.145
24	.187	.189	.202	.209	.225	.241	.272	.305	.351	.377	.426	.446	.440
25	.550	.536	.534	.526	.522	.528	.536	.534	.552	.562	.564	.556	.549
26	.534	.532	.521	--	--	--	--	--	.525	.526	.526	.526	
27	.578	.576	.586	.600	.616	.628	.646	.663	.679	.680	.690	.691	
28	.712	.712	.709	.693	.681	.679	.665	.663	.662	.644	.632	.613	
29	.469	.450	.457	.418	.390	.373	.358	.348	.352	.354	.352	.340	.326
30	.445	.460	.482	.498	.509	.523	.541	.563	.585	.611	.631	.641	.642
31	30.660	30.651	30.643	30.641	30.623	30.626	30.624	30.623	30.631	30.630	30.633	30.617	

DRY BULB THERMOMETER 1/2 FEET ABOVE GROUND

DAYS	1	2	3	4	5	6	7	8	9	10	11	NOON	1	2	3	4	5	6	7	8	9	10	11	MIDT.
1	48.6	47.3	46.5	47.5	48.4	47.1	49.0	48.0	49.2	49.7	50.5	50.6	50.6	50.8	51.2	51.7	52.3	52.0	52.5	52.6	52.6	52.6	50.7	
2	50.0	49.9	48.0	48.2	45.4	46.0	44.2	45.9	46.1	47.0	47.8	46.8	45.2	45.9	45.0	45.4	44.8	44.9	44.3	44.2	44.1	44.0	44.1	
3	42.7	41.8	40.0	40.0	38.9	38.0	38.0	40.1	40.1	41.0	41.7	42.4	38.6	37.8	39.0	38.0	39.0	40.0	40.0	40.0	40.0	40.0	40.0	
4	40.9	38.6	39.0	38.3	37.8	40.0	39.9	39.1	40.3	42.3	43.1	41.0	40.2	40.9	40.8	40.5	40.5	40.0	40.0	40.0	40.0	40.0	40.0	
5	42.7	42.5	43.0	42.0	41.9	39.3	38.4	39.9	41.8	40.6	41.9	43.5	43.5	45.5	45.5	45.0	44.8	44.8	44.8	44.8	44.8	44.8	44.8	
6	42.8	42.5	42.0	41.9	41.9	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8		
7	42.8	42.5	42.0	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6		
8	42.8	42.5	42.0	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6		
9	51.0	50.5	50.4	49.4	49.4	50.0	49.9	49.9	48.0	47.0	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9		
10	39.1	40.5	42.0	42.6	42.5	42.9	42.7	42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6		
11	37.2	36.4	37.8	36.9	36.6	36.2	36.2	35.8	37.1	39.0	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7		
12	50.0	49.0	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5		
13	49.7	49.8	49.8	49.8	49.8</td																			

ARMAGH OBSERVATORY LAT 54° 21' N LONG 6° 39' W.

# BAROMETER

AYS	DAYS	1	2	3	4	5	6	7	8	9	10	11	NOON	
1	1	29.648	29.695	29.721	29.741	29.755	29.757	29.750	29.760	29.750	29.705	29.698	29.662	29.622
2	2	.354	.358	.348	.334	.348	.356	.368	.360	.372	.378	.414	.394	.388
3	3	.314	.294	.272	.232	.200	.160	.140	.128	.126	.124	.131	.111	.090
4	4	.100	.128	.142	.171	.198	.220	.258	.286	.312	.328	.318	.303	.300
5	5	.646	.664	.678	.702	.718	.732	.754	.773	.791	.810	.817	.817	.813
6	6	.866	.877	.873	.865	.863	.873	.869	.881	.898	.923	.932	.926	.924
7	7	.858	.828	.792	.768	.732	.700	.680	.662	.616	.576	.564	.528	.503
8	8	.332	.316	.302	.290	.270	.246	.246	.244	.240	.230	.229	.203	.179
9	9	.225	.253	.267	.285	.309	.305	.357	.388	.423	.447	.455	.470	.481
10	10	.738	.742	.758	.766	.774	.779	.790	.822	.848	.862	.887	.881	.613
11	11	.850	.817	.804	.781	.767	.743	.729	.719	.713	.679	.673	.633	.685
12	12	.531	.535	.546	.565	.557	.570	.587	.605	.627	.648	.673	.681	.677
13	13	.797	.795	.800	.797	.799	.795	.787	.775	.756	.749	.739	.694	.602
14	14	.603	.609	.607	.589	.589	.594	.583	.587	.599	.607	.620	.618	.284
15	15	.428	.410	.373	.350	.343	.342	.334	.326	.322	.324	.326	.310	.026
16	16	.099	.084	.054	.058	.056	.046	.051	.050	.054	.050	.042	.037	.026
17	17	.054	.084	.096	.136	.164	.197	.228	.254	.266	.288	.328	.356	.382
18	18	.306	.266	.216	.188	.168	.136	.101	.056	.000	.28986	.28.930	.28.924	.28.896
19	19	.132	.126	.152	.174	.188	.208	.236	.250	.286	.308	.335	.346	.363
20	20	.085	.061	.061	.041	.037	.017	.28.985	.28.953	.28.913	.28.879	.28.848	.28.902	.28.988
21	21	29.514	29.539	29.570	29.582	29.602	29.622	29.638	29.686	29.714	29.740	29.769	29.785	29.818
22	22	30.029	30.026	30.031	30.027	30.031	30.035	30.033	30.039	30.046	30.037	30.037	30.025	30.003
23	23	29.893	29.867	29.851	29.837	29.822	29.805	29.801	29.803	29.815	29.849	29.860	29.869	29.873
24	24	29.909	29.907	29.913	29.916	29.923	29.927	29.949	29.978	30.005	30.029	30.054	30.064	30.076
25	25	30.222	30.208	30.202	30.206	30.204	30.200	30.210	30.206	.206	.226	.228	.220	.216
26	26	.142	.120	.101	.102	.094	.096	.108	.103	.118	.111	.120	.136	.126
27	27	.226	.246	.266	.264	.280	.299	.313	.328	.348	.359	.371	.375	.371
28	28	.423	.431	.431	.425	.422	.413	.407	.397	.391	.401	.391	.375	.354
29	29	.225	.209	.193	.171	.147	.131	.135	.147	.097	.089	.075	.060	.026
30	30	.142	.158	.174	.184	.196	.214	.230	.244	.272	.302	.326	.334	.331
31	31	30.364	30.374	30.376	30.365	30.364	30.358	30.358	30.354	30.360	30.372	30.380	30.368	30.305

**DRY BULB THERMOMETER** *4 FEET ABOVE GROUND*

Days	1	2	3	4	5	6	7	8	9	10	11	Noon	1	2	3	4	5	6	7	8	9	10	11	MIDT.	
1	42° 7	41° 3	41° 7	41° 3	41° 0	41° 0	41° 3	41° 7	42° 0	41° 4	45° 2	46° 5	47° 4	48° 0	47° 7	45° 9	47° 9	48° 7	49° 6	50° 4	50° 7	51° 5	51° 3	49° 7	
2	45° 0	45° 2	42° 3	42° 5	42° 6	41° 9	40° 1	39° 5	38° 9	39° 4	38° 0	38° 8	39° 6	38° 9	40° 3	38° 2	38° 6	37° 2	38° 0	37° 9	37° 9	37° 8	38° 4		
3	38° 0	38° 0	37° 9	37° 8	36° 4	36° 6	36° 0	35° 9	35° 2	35° 4	36° 3	34° 2	38° 2	38° 6	37° 5	36° 3	35° 3	34° 8	35° 3	34° 9	32° 4	32° 6	32° 5	33° 2	
4	33° 2	33° 6	33° 9	33° 7	33° 2	33° 6	34° 0	33° 5	33° 3	33° 0	33° 5	34° 4	33° 3	34° 8	36° 6	35° 4	34° 5	33° 7	33° 4	33° 6	33° 3	33° 0	33° 7	34° 0	
5	33° 1	32° 6	32° 2	31° 9	32° 0	31° 9	32° 4	33° 0	32° 9	33° 5	34° 6	35° 8	36° 9	34° 5	33° 0	36° 1	33° 5	35° 8	36° 3	36° 6	34° 7	37° 2	38° 8		
6	39° 0	39° 0	39° 7	40° 3	40° 0	40° 7	41° 6	41° 8	41° 8	42° 2	42° 9	43° 7	44° 1	45° 1	45° 7	46° 0	44° 1	43° 8	42° 8	41° 9	41° 0	40° 1	38° 6		
7	41° 1	40° 8	40° 7	42° 4	42° 4	42° 6	42° 9	43° 7	44° 0	45° 0	45° 5	46° 6	46° 3	46° 0	45° 8	46° 1	46° 3	46° 4	47° 2	47° 5	48° 0	47° 4	46° 9		
8	46° 4	45° 7	45° 5	45° 7	46° 8	46° 9	47° 0	46° 9	46° 6	46° 9	47° 9	47° 9	47° 9	47° 6	48° 5	48° 9	48° 7	48° 0	47° 4	47° 8	44° 8	42° 9	40° 9		
9	39° 5	40° 0	38° 9	37° 7	36° 9	35° 9	35° 9	35° 5	35° 5	34° 6	36° 2	39° 3	41° 4	40° 7	40° 0	40° 3	41° 9	41° 0	40° 9	39° 7	38° 9	36° 6	39° 0	39° 0	38° 9
10	38° 9	38° 3	38° 7	38° 4	38° 0	37° 9	37° 4	35° 7	36° 7	36° 4	37° 6	40° 0	40° 9	40° 6	40° 2	39° 1	38° 0	37° 4	36° 5	35° 6	35° 6	36° 0	36° 0	35° 2	
11	35° 4	36° 0	36° 8	37° 0	36° 9	37° 2	37° 6	38° 9	40° 3	41° 5	41° 9	41° 9	43° 6	44° 1	44° 7	45° 0	45° 7	46° 0	46° 8	46° 9	47° 2	46° 2	45° 6	45° 0	
12	44° 7	44° 1	44° 0	43° 3	41° 0	40° 0	41° 0	40° 6	40° 2	41° 1	42° 0	42° 6	42° 0	42° 9	42° 4	41° 4	40° 1	40° 0	39° 6	39° 4	39° 1	38° 7	36° 7	36° 2	
13	35° 6	35° 7	35° 5	35° 7	36° 0	36° 0	36° 7	38° 2	38° 7	39° 7	40° 8	42° 0	43° 6	44° 8	46° 7	47° 8	46° 4	46° 0	45° 0	44° 3	43° 8	43° 0	42° 9	42° 5	
14	41° 9	41° 7	42° 0	41° 9	41° 9	42° 6	42° 6	42° 5	42° 8	42° 3	45° 2	46° 6	47° 9	46° 7	46° 7	45° 5	45° 2	45° 3	45° 4	45° 9	46° 6	46° 0	46° 0	46° 2	
15	47° 0	48° 0	49° 2	49° 9	49° 8	48° 7	48° 6	48° 6	48° 6	48° 9	49° 1	49° 3	49° 0	49° 2	49° 0	49° 5	48° 7	48° 9	48° 7	48° 9	47° 5	46° 9			
16	42° 7	42° 2	41° 7	41° 9	38° 2	38° 9	38° 5	38° 2	38° 0	38° 2	38° 9	38° 9	38° 6	39° 2	40° 0	38° 6	37° 2	36° 7	34° 7	34° 2	34° 0	34° 5	33° 4	34° 0	
17	33° 1	33° 6	32° 5	32° 5	32° 5	32° 5	32° 5	32° 5	32° 5	33° 8	35° 0	35° 5	36° 5	36° 9	37° 7	36° 5	35° 2	34° 0	33° 9	33° 7	35° 1	34° 9	35° 8	36° 9	
18	37° 7	38° 7	41° 0	42° 0	42° 1	45° 4	46° 9	48° 1	49° 4	50° 0	50° 6	51° 0	53° 0	50° 6	48° 9	46° 9	44° 2	44° 0	45° 6	43° 5	43° 0	41° 7	41° 2	40° 0	
19	40° 3	41° 2	42° 0	41° 8	42° 0	41° 9	41° 2	40° 9	40° 9	40° 7	42° 2	43° 0	41° 6	40° 4	39° 5	38° 4	38° 8	38° 0	38° 2	39° 0	41° 0	42° 9	43° 7		
20	41° 8	45° 4	45° 2	45° 4	44° 9	45° 0	44° 2	44° 7	45° 0	45° 3	45° 0	46° 9	47° 2	47° 5	47° 2	45° 4	44° 3	43° 0	43° 2	42° 6	41° 7	40° 8	40° 2	40° 1	40° 0
21	39° 3	39° 3	40° 0	40° 2	40° 9	41° 2	41° 5	41° 3	42° 5	42° 1	41° 4	41° 6	40° 7	40° 4	41° 7	42° 4	41° 7	40° 7	40° 2	40° 0	44° 3	43° 0	44° 0		
22	46° 2	46° 0	45° 4	44° 4	43° 1	43° 0	42° 1	42° 6	42° 6	41° 4	42° 3	43° 4	45° 1	46° 6	46° 7	46° 0	45° 6	46° 6	46° 4	45° 2	44° 3	43° 0	44° 8		
23	45° 4	45° 6	46° 9	45° 2	45° 2	45° 5	45° 7	45° 0	46° 3	46° 4	46° 0	44° 2	44° 3	45° 2	45° 2	45° 2	44° 9	44° 5	45° 0	45° 5	45° 0	45° 0	44° 6	44° 8	
24	39° 9	39° 7	39° 4	38° 7	38° 9	37° 9	37° 6	36° 7	35° 6	35° 6	34° 8	38° 6	40° 0	41° 6	40° 3	42° 0	38° 8	36° 9	37° 1	37° 1	37° 7	37° 9	37° 8		
25	38° 2	37° 9	36° 9	37° 1	37° 7	37° 0	36° 9	36° 6	37° 0	37° 5	40° 9	41° 9	43° 1	44° 5	44° 4	44° 7	44° 3	41° 6	40° 8	40° 3	39° 7	37° 7	37° 9	37° 8	
26	45° 2	45° 8	46° 4	46° 5	46° 8	47° 0	47° 0	47° 6	48° 0	48° 2	49° 0	49° 0	48° 9	49° 3	49° 3	49° 2	49° 5	50° 0	49° 0	49° 6	49° 4	49° 0	48° 9		
27	47° 0	46° 7	45° 7	45° 2	45° 2	42° 2	41° 9	41° 2	42° 7	41° 7	42° 4	46° 0	46° 6	48° 2	48° 9	49° 4	48° 8	47° 5	47° 0	47° 0	46° 9	46° 5	46° 3	46° 0	
28	46° 0	46° 0	46° 4	45° 9	45° 7	44° 8	44° 9	45° 0	45° 0	45° 2	45° 8	46° 3	46° 8	46° 6	46° 6	46° 5	46° 0	45° 9	45° 7	45° 2	45° 0	45° 0	45° 0		
29	44° 6	44° 2	44° 0	43° 8	43° 4	43° 2	42° 7	42° 0	42° 0	42° 5	43° 8	44° 3	45° 4	45° 8	46° 2	46° 7	46° 5	46° 4	46° 4	46° 8	46° 3	46° 4	46° 4	46° 9	
30	39° 6	40° 0	39° 8	39° 2	40° 0	40° 0	40° 0	38° 4	38° 8	39° 9	41° 9	43° 2	44° 2	45° 8	46° 8	47° 0	47° 5	47° 0	47° 0	46° 9	46° 6	46° 3	46° 0	46° 0	

CISTERNS 207 FEET ABOVE MEAN SEA LEVEL												DAYS
2	3	4	5	6	7	8	9	10	11	MIDT.		
29.562	29.502	29.498	29.402	29.400	29.360	29.316	29.272	29.246	29.270	29.330		1
.382	.388	.394	.394	.388	.394	.392	.386	.372	.350	.346		2
.080	.080	.072	.070	.076	.080	.082	.086	.090	.098	.104		3
.326	.358	.398	.420	.44	.462	.494	.521	.560	.578	.611		4
.815	.825	.825	.821	.825	.825	.843	.841	.839	.853	.855		5
.936	.928	.934	.932	.938	.940	.920	.926	.914	.904	.884		6
.470	.450	.430	.412	.390	.386	.386	.376	.380	.360	.350		7
.153	.137	.125	.107	.087	.085	.085	.098	.107	.177	.201		8
.508	.521	.539	.572	.601	.626	.653	.676	.687	.724	.739		9
.885												10
.899												11
.577	555	.538	.525	.515	.513	.503	.519	.525	.528	.535		12
.681	.695	.705	.711	.735	.751	.770	.787	.785	.793	.805		13
.649	.629	.629	.639	.637	.647	.649	.659	.641	.627	.613		14
.608	.618	.618	.614	.613	.604	.588	.560	.526	.502	.460		15
.257	.250	29.234	.221	.204	.179	.154	.140	.116	.096	.099		16
.014	.002	28.996	.004	.005	.007	.010	.008	.004	.002	.004		17
29.403	29.426	29.452	.456	.484	.488	.490	.466	.442	.411	.373		18
28.936	28.984	.022	.062	.096	.093	.070	.066	.078	.112	.136		19
29.359	29.345	.357	.355	.337	.328	.297	.265	.199	.123	.115		20
.036	.092	.182	.239	.294	.328	.374	29.408	29.446	29.479	29.500		21
.827	.859	.883	.909	.943	.959	.975	30.003	30.007	30.017	30.029		22
.989	.989	.979	.975	.962	.957	.961	29.947	29.941	29.923	29.909		23
29.867	29.865	29.863	29.880	29.880	29.903	29.903	29.907	29.915	29.913	29.909		24
30.086	30.02	30.132	30.154	30.176	30.200	30.202	30.218	30.222	30.230	30.222		25
.206	.188	.180	.190	.208	.198	.196	.180	.168	.156	.144		26
116	.118	.118	.123	.129	.142	.154	.156	.160	.182	.208		27
.371	.369	.377	.391	.401	.411	.419	.421	.421	.423	.421		28
.345	30.325	30.323	30.313	30.311	.309	.295	.281	.271	.255	.237		29
.008	29.980	29.978	29.980	29.978	.010	.044	.065	.082	.110	.128		30
.328	30.332	30.340	30.340	30.355	.352	.362	.367	.368	.370	.370		31
30.340	30.340	30.328	30.328	30.328	30.334	30.338	30.332	30.330	30.330	30.334		

WET BULB THERMOMETER 4 FEET ABOVE GROUND

WEATHER BULB THERMOMETER													MIDT.		DAYS										
1	2	3	4	5	6	7	8	9	10	NOON	1	2	3	4	5	6	7	8	9	10	11	MIDT.	1		
41.0	40.5	40.9	40.9	40.0	39.2	39.3	40.0	41.9	42.0	42.5	44.2	44.6	44.9	44.9	45.2	46.4	47.2	48.4	49.1	49.9	50.8	50.7	46.2		
42.2	40.5	39.9	39.6	40.3	39.9	38.4	37.2	36.4	36.8	36.9	37.4	37.0	37.9	36.8	37.0	35.9	36.2	36.5	36.0	35.9	35.9	36.6	2	2	
36.1	36.5	36.2	36.0	35.3	35.5	35.0	35.0	34.5	34.8	35.0	36.1	37.0	36.7	35.9	34.7	34.0	33.3	32.2	34.0	32.4	32.8	32.7	32.2	3	
32.3	34.9	33.2	32.9	32.9	33.0	32.9	32.4	31.8	31.9	32.9	33.0	33.0	34.2	-	*	-	-	32.6	32.4	31.9	32.5	32.4	33.0	32.1	4
32.0	31.7	31.3	31.0	31.0	31.0	31.7	32.6	32.0	32.6	32.9	34.1	35.0	35.6	35.0	34.6	34.0	33.8	34.3	34.7	35.1	36.1	36.0	34.6	5	
38.0	38.0	38.8	39.6	39.1	39.5	40.1	40.1	40.0	40.7	41.0	41.8	42.1	42.9	42.9	42.2	42.2	41.4	40.8	40.0	39.1	38.3	37.9	36.4	6	
37.9	37.8	37.7	39.0	39.1	39.3	39.9	40.4	40.7	41.3	42.2	42.1	43.3	44.2	44.4	44.8	44.9	45.0	45.4	46.6	46.3	46.8	46.3	46.0	7	
45.3	44.7	44.6	44.9	45.9	45.9	45.9	45.7	45.6	45.7	46.1	46.2	46.0	46.8	46.9	46.9	46.0	46.6	46.1	46.0	45.0	46.0	39.1	8		
38.0	38.6	37.2	36.0	35.4	34.6	34.0	34.0	34.0	32.9	34.7	37.2	38.6	40.0	40.6	40.3	39.6	39.0	38.9	38.0	37.5	37.0	37.6	9		
37.6	37.0	37.4	37.1	37.0	36.9	36.3	35.0	35.7	35.9	36.8	38.8	39.1	39.2	39.1	38.0	37.0	36.0	35.5	34.8	34.7	35.0	35.6	34.3	10	
34.8	35.0	35.5	35.6	35.5	35.8	36.2	37.4	38.4	39.4	40.7	41.4	42.9	43.7	44.4	44.8	45.4	46.0	46.8	46.9	47.2	45.9	44.3	43.9	11	
43.6	43.1	42.9	42.7	42.7	40.2	39.2	39.9	39.0	39.0	39.2	40.0	39.9	40.3	40.0	*	38.7	38.0	38.5	37.8	37.9	37.9	37.2	35.9	35.7	12
35.0	35.0	35.0	35.0	35.4	35.0	35.6	36.9	37.2	38.6	40.0	41.1	43.1	44.5	46.3	47.0	45.2	44.3	44.0	43.2	42.4	42.0	41.9	41.6	13	
41.0	40.9	41.0	40.9	41.0	41.7	41.9	41.9	42.0	42.5	44.1	45.2	46.1	45.3	45.5	44.1	44.1	44.2	44.4	44.8	45.7	44.9	44.2	44.6	14	
42.1	42.6	41.0	40.0	41.8	41.8	41.9	41.7	41.6	41.8	41.6	41.7	41.7	41.6	41.6	41.5	41.5	41.4	41.3	41.2	41.3	41.3	41.0	41.5	15	
42.0	41.7	41.8	41.8	41.8	41.9	41.9	41.7	41.6	41.8	41.6	41.7	41.7	41.6	41.6	41.5	41.5	41.4	41.3	41.2	41.2	41.1	41.3	41.0	16	
32.7	32.7	40.9	41.2	37.6	38.0	34.9	37.7	37.0	37.6	38.0	38.0	38.7	37.8	38.1	37.8	38.1	36.9	35.9	35.6	33.2	33.0	33.0	32.5	32.9	17
36.7	33.0	32.1	32.1	32.1	32.1	32.1	32.1	32.1	32.1	34.0	34.1	35.5	35.6	36.0	35.1	34.0	33.0	32.6	32.2	33.2	33.4	34.1	35.0	18	
38.0	38.0	40.3	41.6	43.9	45.3	46.8	48.0	49.0	49.4	50.0	50.6	51.6	45.9	44.8	43.6	41.9	41.8	41.7	40.2	42.0	40.0	38.4	37.9	19	
44.0	38.4	39.8	39.8	39.9	40.0	39.9	39.6	39.7	39.4	40.0	41.2	41.9	39.9	39.0	38.2	36.8	36.9	37.2	36.6	37.8	40.2	42.0	41.7	20	
37.9	45.0	44.7	44.7	44.3	43.1	42.9	42.0	42.0	42.4	43.4	44.9	45.9	45.7	45.3	45.5	45.7	43.9	41.8	42.0	40.7	39.0	38.7	38.3	21	
42.2	38.0	38.6	38.6	38.9	39.6	69.9	40.2	39.9	41.2	41.8	43.2	44.3	45.4	45.9	46.0	45.2	45.0	45.0	44.6	42.9	42.2	41.9	41.6	22	
42.7	41.7	41.9	40.9	40.4	39.9	40.1	39.9	39.4	40.0	41.1	42.9	43.8	44.0	43.2	42.9	42.1	42.2	42.2	42.2	42.2	42.4	42.2	42.1	23	
38.1	42.7	42.2	42.9	43.2	44.2	45.0	45.7	46.0	43.6	43.4	43.7	44.0	43.9	43.2	42.9	41.7	40.1	40.4	39.2	40.0	38.4	38.4	38.5	24	
37.4	38.1	38.7	37.9	38.0	37.2	36.6	35.9	34.9	35.7	36.8	37.2	38.2	37.9	36.9	37.2	36.0	35.9	36.0	36.9	36.0	36.7	36.7	36.9	25	
43.9	37.0	36.2	36.4	36.9	36.4	36.3	36.0	36.6	38.7	39.0	40.0	41.0	42.2	42.4	42.3	42.1	42.1	42.1	41.8	41.9	42.2	42.9	43.2	26	
46.5	44.8	45.4	45.6	46.1	46.3	46.3	46.3	46.4	46.8	47.0	47.4	47.6	47.6	47.4	47.8	48.1	48.6	48.9	49.0	49.2	48.9	48.6	48.4	27	
45.0	46.0	44.8	42.4	41.9	41.8	41.3	40.9	42.2	44.0	45.4	46.0	47.6	48.2	48.3	47.6	46.9	46.7	46.0	45.6	45.4	45.5	45.2	45.2	28	
42.0	45.0	45.0	45.0	44.2	43.8	44.0	44.0	43.7	44.0	44.0	44.1	44.5	44.8	44.6	44.3	44.3	44.0	43.6	43.6	43.2	42.9	42.7	42.2	29	
37.0	41.7	41.6	41.2	41.1	41.0	40.8	40.0	40.0	40.7	42.0	42.8	44.0	44.0	44.6	45.4	45.6	46.0	46.1	45.0	44.8	44.2	38.7	39.0	30	
42.7	37.2	37.3	37.3	37.3	37.7	37.7	37.8	34.5	36.2	37.4	38.0	39.2	40.2	40.8	41.8	41.2	40.5	41.0	41.1	41.0	41.2	41.6	42.3	31	

GLASGOW OBSERVATORY LAT  $55^{\circ}53'$  N LONG  $4^{\circ}18'$  W

HOURLY VALUES January 1874

A.Y.S		BAROMETER								
1	2	3	4	5	6	7	8	9	10	
1	29.501	29.541	29.581	29.601	29.611	29.631	29.645	29.663	29.681	
2	29.180	29.206	29.228	29.240	29.226	29.224	29.216	29.194	29.172	
3	29.228	29.242	29.248	29.238	29.202	29.180	29.150	29.140	29.111	
4	29.023	29.029	29.041	29.045	29.053	29.067	29.089	29.115	29.111	
5	29.445	29.487	29.519	29.555	29.579	29.599	29.629	29.655	29.681	
6	29.713	29.717	29.719	29.719	29.717	29.727	29.737	29.730	29.730	
7	29.848	29.846	29.838	29.806	29.794	29.764	29.750	29.732	29.730	
8	29.444	29.434	29.420	29.404	29.374	29.360	29.346	29.334	29.330	
9	29.118	29.146	29.182	29.202	29.228	29.272	29.302	29.332	29.330	
10	29.693	29.703	29.713	29.709	29.701	29.735	29.747	29.761	29.761	
11	29.784	29.756	29.736	29.698	29.682	29.664	29.642	29.618	29.618	
12	29.362	29.370	29.372	29.364	29.370	29.404	29.420	29.418	29.418	
13	29.646	29.650	29.666	29.672	29.674	29.674	29.686	29.666	29.666	
14	29.414	29.394	29.394	29.396	29.410	29.428	29.430	29.434	29.434	
15	29.438	29.398	29.346	29.316	29.304	29.262	29.244	29.238	29.238	
16	29.067	28.995	29.011	29.005	29.005	28.984	28.977	28.977	28.977	
17	28.934	28.946	28.966	28.982	28.008	29.042	29.076	29.102	29.102	
18	29.344	29.296	29.262	29.214	29.156	29.094	29.054	29.020	29.020	
19	28.936	28.954	28.954	28.956	28.984	28.020	29.068	29.116	29.116	
20	29.244	29.162	29.110	29.064	29.032	29.010	28.994	28.991	28.991	
21	29.367	29.401	29.425	29.445	29.467	29.495	29.517	29.551	29.551	
22	29.937	29.949	29.963	29.963	29.963	29.965	29.981	29.977	29.977	
23	29.844	29.792	29.768	29.754	29.730	29.712	29.718	29.716	29.716	
24	29.778	29.772	29.776	29.768	29.782	29.786	29.784	29.812	29.812	
25	30.123	30.111	30.115	30.099	30.091	30.083	30.083	30.079	30.079	
26	29.955	29.931	29.917	29.895	29.889	29.869	29.847	29.835	29.835	
27	30.067	30.069	30.115	30.129	30.159	30.171	30.181	30.191	30.191	
28	30.10	30.08	30.04	29.98	3.00	29.97	28.9	28.8	28.8	
29	30.144	30.132	30.118	30.098	30.074	30.056	30.040	30.022	30.022	
30	29.967	29.977	29.997	30.011	30.017	30.035	30.057	30.077	30.077	
31	30.190	30.194	30.201	30.206	30.215	30.204	30.206	30.206	30.206	

CISTERN 184 FEET ABOVE MEAN SEA LEVEL												DAYS
1	2	3	4	5	6	7	8	9	10	11	MIDT.	
29.586	29.554	29.522	29.468	29.414	29.362	29.298	29.230	29.196	29.144	29.124	29.140	1
.232	.232	.236	.234	.234	.236	.242	.232	.230	.228	.222	.240	2
.033	.019	.011	.011	.005	.003	.005	.007	.011	.015	.015	.015	3
.159	.161	.169	.185	.201	.229	.250	.289	.321	.359	.407	.407	4
.673	.667	.657	.661	.657	.651	.673	.677	.685	.707	.702	.702	5
.776	.784	.796	.808	.816	.838	.852	.860	.856	.856	.852	.852	6
.631	.594	.550	.540	.538	.518	.504	.488	.484	.470	.458	.454	7
.241	.224	.208	.194	.180	.162	.148	.140	.136	.122	.116	.104	8
.455	.475	.499	.521	.535	.551	.577	.603	.621	.643	.659	.681	9
.810	.814	.828	.834	.840	.848	.848	.850	.848	.838	.818	.798	10
.493	.450	.430	.400	.376	.346	.342	.346	.350	.360	.356	.362	11
.471	.488	.492	.514	.530	.544	.562	.573	.580	.580	.610	.636	12
.5	.482	.464	.474	.462	.468	.470	.476	.460	.464	.444	.426	13
.482	.476	.488	.504	.512	.526	.532	.532	.516	.504	.488	.478	14
29.259	29.239	29.227	29.221	29.215	29.199	29.185	29.171	29.149	29.124	29.097	29.067	15
28.981	28.922	28.918	28.926	28.928	28.930	28.932	28.936	28.932	28.938	28.926	28.936	16
29.258	29.280	29.312	29.352	29.358	29.382	29.420	29.422	29.414	29.400	29.394	29.380	17
28.744	28.696	28.694	28.690	28.740	28.794	28.838	28.882	28.892	28.882	28.852	28.882	18
29.253	29.271	29.293	29.329	29.343	29.383	29.391	29.387	29.369	29.365	29.323	29.267	19
28.881	28.883	28.931	28.975	.025	.087	.175	.211	.249	.279	.317	.347	20
29.671	29.699	29.729	29.767	.995	.831	.851	.877	.891	.905	.919	.933	21
.961	.952	.942	.930	.928	.914	.912	.918	.896	.886	.858	.842	22
.742	.744	.764	.768	.772	.778	.780	.784	.780	.784	.778	.778	23
29.875	29.891	29.927	29.967	30.011	30.051	30.079	30.093	30.107	30.129	30.139	30.131	24
30.063	30.053	30.037	30.041	30.045	30.047	30.047	30.033	30.027	30.005	29.991	29.965	25
29.871	29.871	29.857	29.875	29.887	29.933	29.957	29.977	29.985	.011	30.031	30.051	26
30.262	30.252	30.252	30.246	30.251	30.260	30.270	30.270	30.278	.284	.288	.304	27
30.262	30.242	30.236	30.226	30.220	30.218	30.214	30.198	30.194	30.188	30.166	30.166	28
29.899	29.893	29.865	29.843	29.817	29.841	29.853	29.889	29.917	29.933	29.959	29.959	29
30.158	30.160	30.170	30.182	30.186	30.198	30.196	30.192	30.192	30.192	30.192	30.192	30
30.216	30.206	30.196	30.208	30.218	30.220	30.224	30.222	30.232	30.232	30.234	30.234	31

\* Record defective or Instrument out of action

*logical Office,  
116 Victoria Street Westminster. S.W.*

**ROBERT H. SCOTT, Director**

FALMOUTH OBSERVATORY LAT 50° 9' N LONG 5° 4' W

# HOURLY VALUES January 1874

RY BULB THERMOMETER // FEET ABOVE GROUND

Clock stopped.

BAROMETER

DAY	1	2	3	4	5	6	7	8	9	10	11	NOON	1
1	29.423	29.475	29.501	29.526	29.560	29.593	29.607	29.631	29.660	29.673	29.676	29.666	29.651
2	29.261	29.252	29.258	29.276	29.282	29.278	29.283	29.301	29.304	29.318	29.311	29.300	29.311
3	29.259	29.250	29.220	29.168	29.112	29.050	28.969	28.904	28.860	28.799	28.754	28.705	28.701
4	28.921	28.928	28.934	28.937	28.936	28.952	28.969	28.995	29.022	29.042	29.084	29.095	29.001
5	29.244	29.288	29.324	29.357	29.391	29.434	29.473	29.504	29.535	29.564	29.582	29.502	29.513
6	29.335	29.37	29.46	29.41	29.32	29.35	29.40	29.46	29.45	29.50	29.51	29.47	29.471
7	29.820	29.813	29.800	29.780	29.758	29.741	29.730	29.720	29.710	29.700	29.694	29.660	29.661
8	29.446	29.421	29.408	29.379	29.355	29.327	29.315	29.310	29.308	29.293	29.264	29.240	29.217
9	29.123	29.120	29.114	29.124	29.147	29.182	29.234	29.266	29.300	29.330	29.355	29.361	29.389
10	29.613	29.614	29.620	29.626	29.630	29.633	29.652	29.660	29.678	29.672	29.663	29.622	29.622
11	29.710	29.701	29.692	29.675	29.662	29.658	29.648	29.646	29.644	29.621	29.590	29.582	29.582
12	29.364	29.359	29.348	29.347	29.351	29.350	29.349	29.343	29.343	29.345	29.349	29.348	29.348
13	29.559	29.583	29.581	29.593	29.616	29.621	29.616	29.616	29.616	29.621	29.614	29.552	29.556
14	29.449	29.433	29.435	29.434	29.431	29.428	29.435	29.434	29.448	29.458	29.453	29.437	29.439
15	29.420	29.405	29.368	29.344	29.323	29.314	29.314	29.314	29.314	29.314	29.303	29.294	29.156
16	29.107	29.083	29.051	29.020	28.992	28.962	28.925	28.894	28.860	28.789	28.744	28.733	28.896
17	28.894	28.901	28.909	28.926	28.936	28.973	28.993	29.016	29.037	29.077	29.110	29.129	29.3
18	29.337	29.318	29.296	29.261	29.221	29.186	29.136	29.100	29.058	29.028	28.994	28.945	28.939
19	29.018	29.055	29.062	29.062	29.057	29.070	29.091	29.105	29.116	29.140	29.160	29.143	29.163
20	29.087	29.060	29.051	29.029	29.021	29.035	29.031	29.017	29.010	29.001	28.969	28.939	28.939
21	29.677	29.682	29.682	29.682	29.682	29.682	29.682	29.682	29.682	29.677	29.670	29.674	29.674
22	29.15	29.26	29.28	29.35	29.47	29.50	29.58	29.61	29.64	29.65	29.64	29.62	29.62
23	29.820	29.809	29.796	29.767	29.721	29.718	29.716	29.716	29.716	29.708	29.708	29.703	29.703
24	29.697	29.699	29.695	29.692	29.692	29.692	29.692	29.692	29.692	29.692	29.692	29.692	29.692
25	30.036	30.036	30.020	30.033	30.033	30.023	30.020	30.030	30.030	30.048	30.060	30.051	30.051
26	29.981	29.984	29.953	29.942	29.934	29.922	29.910	29.905	29.903	29.909	29.891	29.900	29.890
27	29.951	29.965	29.965	29.963	29.976	30.018	30.032	30.064	30.071	30.103	30.131	30.124	30.115
28	30.154	30.157	30.157	30.147	30.147	30.153	30.151	30.151	30.160	30.160	30.153	30.139	30.139
29	30.045	30.043	30.021	30.008	29.992	29.983	29.997	29.962	29.959	29.946	29.952	29.933	29.933
30	29.841	29.863	29.888	29.909	29.925	29.948	29.973	30.004	30.008	30.026	30.042	30.034	30.034
31	30.102	30.098	30.090	30.088	30.092	30.103	30.105	30.109	30.114	30.121	30.131	30.122	30.120

CISTERNS 361 FEET ABOVE MEAN SEA LEVEL

2	3	4	5	6	7	8	9	10	11	MIDT.	DAYS
29.623	29.603	29.574	29.554	29.523	29.500	29.460	29.404	29.368	29.324	29.295	1
29.309	29.311	29.313	29.319	29.325	29.322	29.320	29.311	29.303	29.292	29.273	2
28.774	28.831	28.865	28.891	28.902	28.911	28.914	28.930	28.926	28.927	28.927	3
29.108	29.124	29.124	29.131	29.143	29.165	29.185	29.202	29.218	29.215	29.239	4
622	634	654	658	669	683	692	701	711	721	736	5
700	714	724	734	744	754	764	774	784	794	795	6
605	610	615	620	625	630	635	640	645	650	655	7
580	585	590	595	600	605	610	615	620	625	630	8
561	567	572	577	582	587	592	597	602	607	612	9
547	553	559	565	571	577	583	589	595	601	607	10
532	538	544	550	556	562	568	574	580	586	592	11
518	524	530	536	542	548	554	560	566	572	578	MIDT.

DRY BULB THERMOMETER

DAY	1	2	3	4	5	6	7	8	9	10	11	NOON	1
1	42.8	42.3	42.9	41.7	42.8	42.1	41.6	42.7	43.2	43.7	44.1	44.6	45.1
2	46.8	47.1	46.6	47.4	45.1	43.5	43.8	44.8	44.2	42.1	40.9	39.7	38.2
3	38.2												

KEW OBSERVATORY LAT 51° 28' N LONG 0° 19' W.

HOURLY VALUES January 1874

DAY

BAROMETER

DAYS	1	2	3	4	5	6	7	8	9	10	11	NOON	1
1	29.919	29.945	29.983	30.003	30.030	30.061	30.091	30.118	30.149	30.177	30.178	30.176	30.1
2	.998	.974	.944	29.926	29.910	29.895	29.885	29.866	29.876	29.878	29.874	29.876	29.8
3	.820	.788	.747	.694	.647	.594	.553	.495	.443	.379	.327	.254	.1
4	.447	.441	.422	.416	.424	.442	.464	.496	.526	.544	29.553	29.559	29.551
5	29.760	29.790	29.803	29.813	29.827	29.839	29.866	29.910	29.943	29.984	30.001	30.028	30.0
6	30.250	30.272	30.269	30.275	30.280	30.303	30.304	30.314	30.330	30.347	.351	.342	.3
7	30.325	30.322	30.311	30.285	30.272	30.259	30.252	30.245	30.240	30.233	30.217	30.179	30.1
8	29.976	29.962	29.940	29.924	29.897	29.890	29.880	29.878	29.861	29.863	29.853	29.842	29.8
9	29.748	29.747	29.736	29.722	29.734	29.736	29.747	29.754	29.771	29.793	29.808	29.809	29.8
10	30.009	30.012	30.008	30.016	30.004	30.022	30.030	30.036	30.048	30.060	30.055	30.036	30.0
11	30.083	30.079	30.090	30.089	30.098	30.096	30.098	30.105	30.113	30.126	30.113	30.089	30.0
12	29.957	29.930	29.916	29.897	29.888	29.884	29.875	29.879	29.871	29.883	29.879	29.887	29.8
13	30.024	30.035	30.049	30.055	30.068	30.089	30.095	30.123	30.137	30.142	30.129	30.108	30.0
14	30.002	29.987	29.979	29.968	29.960	29.956	29.954	29.971	29.980	29.981	29.979	29.982	29.985
15	29.979	.968	.951	.941	.936	.928	.925	.931	.930	.920	.906	.882	.8
16	.708	.693	.660	.633	.614	.586	.566	.542	.519	.490	.460	.413	.3
17	.436	.448	.456	.458	.451	.461	.476	.492	.505	.560	.580	.61	.6
18	.863	.872	.863	.848	.837	.820	.799	.752	.726	.693	.649	.606	.6
19	.624	.634	.658	.664	.645	.658	.662	.636	.609	.593	.574	.543	.5
20	.648	.640	.652	.645	.641	.650	.645	.658	.662	.636	.609	.604	.6
21	.254	.247	.239	.238	.231	.233	.231	.238	.245	.248	.238	.213	.2
22	.171	.153	.139	.118	.110	.096	.096	.091	.107	.119	.153	.177	.1
23	.424	.441	.458	.465	.467	.482	.479	.500	.517	.524	.534	.522	.5
24	.523	.514	.495	.475	.466	.466	.457	.440	.433	.435	.419	.419	.3
25	.365	.373	.363	.364	.366	.388	.400	.430	.442	.472	.486	.490	.4
26	.532	.531	.537	.527	.517	.514	.523	.532	.540	.540	.538	.520	.5
27	.466	.458	.445	.430	.415	.407	.404	.405	.395	.385	.372	.339	.3
28	.292	.286	.286	.294	.310	.338	.368	.390	.422	.434	.434	.446	.4
29	30.500	30.495	30.496	30.495	30.501	30.504	30.509	30.511	30.515	30.512	30.500	30.494	30.4
30													
31													

DAY

DRY BULB THERMOMETER 10 FEET ABOVE GROUND

DAYS	1	2	3	4	5	6	7	8	9	10	11	NOON	1	2	3	4	5	6	7	8	9	10	11	MIDT.	DAY
1	36.1	36.3	36.035	36.3	37.1	37.4	36.0	37.1	38.5	40.5	42.4	44.0	45.1	44.8	42.8	41.7	41.2	40.4	36.8	35.7	34.6	33.6	32.5	31.4	
2	46.7	47.6	48.7	47.7	48.0	48.7	49.6	49.9	50.0	50.5	50.5	50.0	49.0	47.7	46.8	45.3	45.2	44.5	43.7	42.9	42.0	41.2	40.4	39.5	
3	43.1	43.0	43.0	42.8	43.4	44.4	44.0	44.0	44.5	45.9	45.2	48.0	43.9	43.8	43.8	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	
4	37.7	37.6	36.037	37.7	37.6	36.3	35.6	35.6	36.6	38.6	39.8	40.2	40.6	40.6	38.6	37.1	36.0	35.5	35.2	34.6	34.3	34.0	33.7	33.4	
5	37.0	36.0	34.2	34.0	34.5	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	
6	31.3	30.9	30.8	30.5	30.8	31.0	31.4	31.9	32.5	33.0	33.9	34.3	35.8	36.1	37.0	37.0	36.0	34.5	33.4	32.8	32.3	31.8	31.3	31.2	
7	38.0	36.7	36.6	36.5	35.3	33.3	34.6	34.8	36.4	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	
8	38.0	36.7	36.6	36.5	35.3	33.3	34.6	34.8	36.4	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	
9	38.9	38.9	39.7	40.1	41.4	42.2	43.0	43.9	45.9	46.4	47.1	47.6	47.6	47.6	47.6	47.6	47.6	47.6	47.6	47.6	47.6	47.6	47.6	47.6	
10	44.0	44.2	44.2	44.5	45.0	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	
11	46.4	45.9	44.4	44.0	43.5	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	
12	41.0	40.8	40.7	39.8	37.9	37.9	36.0	31.9	31.9</																

Official, No. 51

# HOURLY READINGS

FROM THE



## SELF-RECORDING INSTRUMENTS

AT THE

SEVEN OBSERVATORIES UNDER THE METEOROLOGICAL COUNCIL.

1881.

Published by the Authority of the Meteorological Council.



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1883.

2445  
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*(The figures under the months indicate the pages.)*

	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.
<b>VALENCIA :</b>												
Barometer	-	-	-	-	-	-	-	-	-	-	-	-
Wind	-	-	4	46	88	130	172	214	256	298	340	382
Dry-bulb Thermometer	-	-	6	48	90	132	174	216	258	300	342	384
Wet-bulb Thermometer	-	-	8	50	92	134	176	218	260	302	344	386
Vapour Tension	-	-	8	50	92	134	176	218	260	302	344	386
Rainfall	-	-	8	50	92	134	176	218	260	302	344	386
<b>ARMAGH :</b>												
Barometer	-	-	10	52	94	136	178	220	262	304	346	388
Wind	-	-	12	54	96	138	180	222	264	306	348	390
Dry-bulb Thermometer	-	-	14	56	98	140	182	224	266	308	350	392
Wet-bulb Thermometer	-	-	14	56	98	140	182	224	266	308	350	392
Vapour Tension	-	-	14	56	98	140	182	224	266	308	350	392
Rainfall	-	-	14	56	98	140	182	224	266	308	350	392
<b>GLASGOW :</b>												
Barometer	-	-	16	58	100	142	184	226	268	310	352	394
Wind	-	-	18	60	102	144	186	228	270	312	354	396
Dry-bulb Thermometer	-	-	20	62	104	146	188	230	272	314	356	398
Wet-bulb Thermometer	-	-	20	62	104	146	188	230	272	314	356	398
Vapour Tension	-	-	20	62	104	146	188	230	272	314	356	398
Rainfall	-	-	20	62	104	146	188	230	272	314	356	398
<b>ABERDEEN :</b>												
Barometer	-	-	22	64	106	148	190	232	274	316	358	400
Wind	-	-	24	66	108	150	192	234	276	318	360	402
Dry-bulb Thermometer	-	-	26	68	110	152	194	236	278	320	362	404
Wet-bulb Thermometer	-	-	26	68	110	152	194	236	278	320	362	404
Vapour Tension	-	-	26	68	110	152	194	236	278	320	362	404
Rainfall	-	-	26	68	110	152	194	236	278	320	362	404
<b>FALMOUTH :</b>												
Barometer	-	-	28	70	112	154	196	238	280	322	364	406
Wind	-	-	30	72	114	156	198	240	282	324	366	408
Dry-bulb Thermometer	-	-	32	74	116	158	200	242	284	326	368	410
Wet-bulb Thermometer	-	-	32	74	116	158	200	242	284	326	368	410
Vapour Tension	-	-	32	74	116	158	200	242	284	326	368	410
Rainfall	-	-	32	74	116	158	200	242	284	326	368	410
<b>STONYHURST :</b>												
Barometer	-	-	34	76	118	160	202	244	286	328	370	412
Wind	-	-	36	78	120	162	204	246	288	330	372	414
Dry-bulb Thermometer	-	-	38	80	122	164	206	248	290	332	374	416
Wet-bulb Thermometer	-	-	38	80	122	164	206	248	290	332	374	416
Vapour Tension	-	-	38	80	122	164	206	248	290	332	374	416
Rainfall	-	-	38	80	122	164	206	248	290	332	374	416
<b>KEW :</b>												
Barometer	-	-	40	82	124	166	208	250	292	334	376	418
Wind	-	-	42	84	126	168	210	252	294	336	378	420
Dry-bulb Thermometer	-	-	42	84	126	168	210	252	294	336	378	420
Wet-bulb Thermometer	-	-	44	86	128	170	212	254	296	338	380	422
Vapour Tension	-	-	44	86	128	170	212	254	296	338	380	422
Rainfall	-	-	44	86	128	170	212	254	296	338	380	422

## HOURLY READINGS, 1881.

(NEW SERIES.)

### INTRODUCTORY REMARKS.

THE following Tables give for each of the Seven British Self-recording Observatories of the Meteorological Office, for each hour—

1. Readings of the barometer reduced to 32° Fahrenheit.
2. Readings of the dry-bulb and wet-bulb thermometers.
3. Direction and velocity of the wind.
4. Rainfall.
5. Vapour tension, or proportion of vapour in the air. Also
6. Daily minima and maxima of temperature, and
7. Daily means of the barometer and dry-bulb and wet-bulb thermometers.

1. *Pressure*.—The barometer readings are measurements of the photographic curves, at points two minutes after each hour. They are reduced to 32° Fahrenheit by a mechanical arrangement, but no correction has been applied for height above mean sea level.

The corrections required for the reduction of the readings to the mean sea level are given on page 3.

2. *Temperature*.—The thermometer readings are measurements of the photographic curves made at points two minutes before each hour, and the minima and maxima are the absolute lowest and highest readings respectively for each 24 hours, ending at midnight. All the readings are corrected for instrumental errors. The heights of the bulbs above the ground vary from 4 feet at Armagh to 41 feet at Aberdeen.

3. *Wind*.—The direction of the wind is that recorded exactly at the hour. It is given according to true bearings in numbers corresponding to the various points of the compass, as shown by the following diagram:—

The velocity of the wind is the space travelled over from 30 minutes before to 30 minutes after the hour. Thus the number of miles recorded from 2.30 p.m. to 3.30 p.m. is set down as the

velocity for 3 p.m. The factor 3 (Dr. Robinson's original factor), has been employed for converting the distance actually run by the cups into "space travelled over."



Corrections for the effect of friction have been applied as follows:—

When the tabulated velocity is 0, correction is 1·5 miles.

" "	1—3,	"	1·0 "
" "	4—10,	"	0·5 "
" "	above 10,	"	0·0 "

It will be seen by the above that an entry of 1·5 miles per hour is equivalent to calm.

4. *Rainfall.*—The rainfall is the total precipitation for the 60 minutes ending at the hour. Thus the total fall registered in the interval from 1 p.m. to 2 p.m. is taken as the fall for 2 p.m. Occasionally in winter when snow falls, or when the rain freezes, the siphon fails to act, and no hourly falls can be given. In such cases the fall is measured at about 10 o'clock each morning, and the total fall is inserted in words, as, "Total for 24 hours = ·056," &c. Where the amount found in the gauge is known to be dew a note to that effect is inserted.

5. *Vapour Tension.*—This gives the proportion of the total atmospheric pressure which is due to the presence of vapour in the air, expressed in inches of mercury. It is obtained from the readings of the dry-bulb and wet-bulb thermometers by using Glaisher's Hygrometrical Tables, 5th edition, London, 1869. When from any cause the reading of either dry-bulb or wet-bulb thermometer is missing, if a pair of standard readings are available the latter have always been used in calculating the vapour tension.

7. The means entered for the barometer and thermometer readings are obtained by adding together the hourly readings for each day and dividing by 24. These means are not carried further than to three places of decimals for the pressures and to one place of decimals for the temperatures. When the remainder is 12 the last figure is thrown up—thus, 51·25 is entered as 51·3, and so on.

The time throughout is Greenwich mean time, not local time.

Those readings with "†" are approximate only, but the limit of error may be taken to be slight, seldom, if ever, exceeding 0·01 inch in the pressures, and 1°·0 in the temperatures.

Readings printed in italic type are interpolations which have been used in calculating the means. In some cases the gaps were too great to bridge over by interpolation, and the spaces are consequently left blank. Means have, however, been calculated for such days, and they will be found entered with the note "probable mean."

CORRECTIONS to be applied to the READINGS of the PHOTOGRAPHIC BAROMETER CURVES to reduce them to MEAN SEA LEVEL. The readings have already been reduced to 32° Fahrenheit.

(The correction is additive.)

Observatory, and Height of Cistern above Mean Sea Level.	Approximate Sea-Level Pressure.	Temperature of the Outside Air (Dry-bulb).									
		0°	10°	20°	30°	40°	50°	60°	70°	80°	90°
VALENCIA, 23 feet	28·0	·027	·026	·025	·024	·024	·023	·023	·022	·022	·021
	29·0	·028	·027	·026	·025	·025	·024	·024	·023	·023	·022
	30·0	·029	·028	·027	·026	·026	·025	·025	·024	·024	·023
ARMAGH, 207 feet	28·0	·238	·232	·226	·221	·216	·212	·209	·204	·199	·195
	29·0	·246	·240	·234	·229	·224	·220	·216	·211	·206	·202
	30·0	·254	·248	·242	·237	·232	·228	·223	·218	·213	·209
GLASGOW, 184 feet	28·0	·211	·205	·201	·197	·192	·188	·186	·181	·177	·174
	29·0	·219	·213	·208	·204	·199	·195	·192	·187	·183	·180
	30·0	·227	·221	·215	·211	·206	·202	·198	·193	·189	·186
ABERDEEN, 88 feet	28·0	·102	·098	·097	·094	·093	·091	·089	·087	·085	·083
	29·0	·105	·102	·100	·098	·096	·094	·092	·090	·088	·086
	30·0	·108	·106	·103	·102	·099	·097	·095	·093	·091	·089
FALMOUTH, 211 feet	28·0	·241	·237	·231	·225	·220	·216	·213	·208	·203	·199
	29·0	·250	·245	·239	·233	·228	·224	·220	·215	·210	·206
	30·0	·259	·253	·247	·241	·236	·232	·227	·222	·217	·213
STONYHURST, 361 feet	28·0	·412	·403	·394	·384	·376	·369	·361	·353	·347	·340
	29·0	·427	·417	·408	·398	·390	·382	·374	·366	·359	·352
	30·0	·442	·431	·422	·412	·404	·395	·387	·379	·371	·364
KEW	28·0	·038	·038	·038	·037	·036	·035	·034	·034	·033	·032
	29·0	·040	·039	·039	·038	·037	·036	·035	·035	·034	·033
	30·0	·042	·041	·040	·039	·038	·037	·036	·036	·035	·034

NOTE.—The corrections given above differ slightly from those found in a corresponding table printed in the Quarterly Weather Report for 1869, the reason being that the values on which the table is based were recalculated in 1875, and published in "Instructions in the Use of Meteorological Instruments," and that these new values have been employed here.

## HOURLY READINGS.

## ABERDEEN OBSERVATORY

## BAROMETER

Days.	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	Days.
1	29°963	29°943	29°927	29°912	29°905	29°887	29°870	29°875	29°870	29°881	29°874	29°874	29°874	1
2	29°992	30°010	30°024	30°029	30°027	30°028	30°027	30°029	30°042	30°050	30°052	30°055	30°056	2
3	30°089	*089	*090	*077	*042	*030	*025	*025	*030	*026	*011	*004	3	
4	*040	*057	*079	*089	*100	*117	*144	*154	*177	*194	*203	*219	*226	4
5	*367	*374	*380	*394	*400	*414	*432	*450	*460	*468	*471	*474	5	
6	*574	*587	*599	*607	*610	*617	*633	*643	*664	*671	*676	*681	6	
7	*691	*689	*685	*679	*666	*663	*664	*663	*672	*669	*659	*644	*636	7
8	*572	*555	*546	*538	*539	*534	*523	*529	*524	*514	*504	*483	8	
9	*391	*384	*378	*364	*357	*338	*311	*308	*302	*306	*302	*302	9	
10	30°074	30°067	30°062	30°048	30°034	30°026	30°015	30°014	30°020	30°011	30°003	29°983	29°973	10
11	29°773	29°748	29°733	29°710	29°693	29°678	29°667	29°653	29°644	29°633	29°616	*583	*564	11
12	*364	*328	*321	*320	*334	*349	*361	*408	*464	*510	*543	*563	*581	12
13	*693	*687	*686	*678	*671	*666	*663	*671	*674	*674	*667	*657	13	
14	*797	*814	*822	*829	*829	*826	*825	*820	*809	*787	*767	*767	14	
15	*597	*599	*599	*597	*589	*581	*563	*566	*566	*587	*587	*585	*577	15
16	*580	*573	*582	*574	*573	*570	*565	*570	*570	*583	*586	*584	16	
17	*619	*621	*620	*619	*621	*619	*619	*629	*641	*653	*670	*668	*674	17
18	*764	*760	*756	*747	*745	*747	*755	*770	*779	*785	*790	*786	*775	18
19	*612	*617	*607	*593	*600	*594	*607	*614	*637	*620	*603	*584	19	
20	29°550	29°549	29°545	29°557	29°560	29°567	29°572	29°579	29°580	29°581	29°585	29°584	29°586	20
21	30°124	30°155	30°180	30°207	30°229	30°247	30°260	30°289	30°302	30°327	30°324	30°321	30°321	21
22	*183	*168	*145	*133	*108	*113	*118	*134	*140	*141	*129	*124	22	
23	*101	*099	*101	*094	*096	*103	*118	*131	*143	*145	*148	*146	23	
24	30°118	30°106	30°093	30°070	30°053	30°028	30°014	30°012	30°009	29°998	29°987	29°974	29°967	24
25	29°886	29°876	29°866	29°853	29°850	29°832	29°830	29°821	*818	*808	*799	*783	25	
26	*668	*654	*656	*627	*604	*589	*573	*567	*567	*559	*547	*534	*512	26
27	29°294	29°273	29°257	29°232	29°193	29°179	29°166	29°165	29°146	29°133	29°117	29°107	27	
28	28°994	28°983	28°974	28°967	28°961	28°952	28°949	28°952	28°947	28°942	28°942	28°942	28	
29	*906	*895	*886	*874	*865	*859	*857	*845	*846	*835	*828	*817	29	
30	28°847	28°852	28°860	28°864	28°876	28°885	28°896	28°915	28°937	28°960	28°971	28°989	28°996	30
31	29°074	29°077	29°069	29°074	29°082	29°088	29°108	29°129	29°151	29°193	29°211	29°220	31	

Wind. Direction in Numbers - { 8=E. 24=W.  
16=S. 32=N. }

Days.	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	Days.		
D.	V.	D.	V.	D.	V.	D.	V.	D.	V.	D.	V.	D.	V.	DAYS.		
1	22	7°5	21	8°5	17	9°5	17	4°5	17	3	19	8°5	20	7°5	19	
2	22	8°5	24	8°5	23	7°5	23	8°5	20	6°5	11	7°5	18	3	2	
3	20	9°5	20	9°5	18	8°5	19	8°5	18	6°5	10	7°5	17	5°5	3	
4	19	10°5	19	6°5	24	6°5	24	7°5	24	6°5	25	4°5	20	5°5	4	
5	23	6°5	23	6°5	25	5°5	24	6°5	25	4°5	25	5°5	26	9°5	5	
6	26	9°5	22	6°5	25	6°5	26	5°5	26	6°5	26	6°5	26	7°5	6	
7	18	4	18	4°5	24	6°5	22	10°5	21	8°5	26	4°5	26	6°5	7	
8	26	9°5	26	7°5	26	6°5	26	8°5	26	6°5	25	9°5	25	8°5	8	
9	21	2	21	4	21	6°5	21	4°5	21	3	21	4°5	21	7°5	9	
10	26	19	27	18	27	17	27	15	27	10	20	11	29	15	10	
11	26	22	26	21	27	21	26	28	16	28	14	27	15	24	11	
12	29	20	27	22	25	13	25	14	26	12	7	59	7	49	12	
13	1	15	32	16	31	15	31	12	30	13	29	15	28	17	13	
14	28	7°5	29	12	29	14	29	15	28	16	28	14	28	9°5	14	
15	26	24	26	20	26	20	27	17	27	14	27	19	28	18	15	
16	27	21	27	20	27	16	27	15	25	14	25	16	26	15	16	
17	24	5°5	24	6°5	24	7°5	24	10°5	24	11	24	10°5	24	7°5	17	
18	25	14	25	12	25	13	26	9°5	26	6°5	26	8°5	26	7°5	18	
19	29	14	29	10°5	29	12	13	14	4	15	11	30	9°5	30	10°5	19
20	30	14	30	15	28	11	2									

## ABERDEEN OBSERVATORY

## DRY-BULB THERMOMETER

Days.	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	2 p.m.	Days.
1	35°7	36°3	35°8	35°9	36°6	36°5	39°3	41°0	42°6	44°0	44°7	44°0	42°6	40°0	1
2	42°0	41°5	44°2	42°5	42°2	40°6	40°8	41°6	41°3	42°7	46°0	42°7	44°9	40°0	2
3	37°7	37°9	37°4	37°4	38°4	37°6	38°5	37°8	39°6	41°6	41°7	41°7	41°0	38°0	3
4	39°4	39°4	42°4	40°3	41°6	39°3	36°7	36°6	35°5	37°8	38°8	40°6	41°0	40°0	4
5	31°0	30°7	30°6	29°2	29°0	29°4	28°6	28°9	29°0	30°0	31°7	33°4	34°0	30°6	5
6	31°2	31°0	31°8	31°6	31°6	30°4	30°7	31°8	31°0	34°4	36°0	37°3	37°0	35°0	6
7	24°6	23°4	22°4	22°2	22°0	19°4	19°6	19°4	19°5	20°8	23°3	23°2	25°3	21°5	7
8	27°3	27°0	26°7	26°5	25°4	25°4	25°2	25°1	25°0	25°5	26°3	27°8	29°0	25°8	8
9	26°6	24°7	24°2	23°5	22°1	21°9	20°4	19°0	18°9	21°3	21°4	22°6	24°6	25°0	9
10	33°6	33°0	32°7	33°0	33°6	34°3	33°8	33°7	32°6	32°2	32°3	33°0	32°4	30°6	10
11	30°5	30°5	30°6	30°3	30°3	29°5	29°7	29°6	29°9	27°6	28°5	28°0	27°0	27°0	11
12	24°4	26°6	26°4	26°0	28°0	33°1	32°6	32°2	30°0	31°6	32°2	31°6	30°6	32°4	12
13	26°7	26°0	27°2	27°4	23°6	23°2	23°0	19°7	20°4	22°0	22°7	22°2	22°3	21°0	13
14	27°5	25°8	23°0	19°9	19°2	15°4	15°5	15°0	14°7	17°4	20°4	22°7	21°0	21°7	14
15	26°0	25°9	26°4	26°0	25°6	24°6	25°3	25°4	26°2	26°4	27°7	27°0	25°1	15	
16	25°4	23°6	23°1	23°7	22°3	20°3	23°4	22°3	22°3	20°7	23°5	23°2	21°0	16	
17	-	-	-	-	-	-	-	-	-	17°7	*	20°0	*	13°0	17
18	8°3	12°5	10°7	10°1	13°0	13°6	16°6	17°0	17°3	24°7	25°4	26°0	28°7	18	
19	21°0	22°3	20°7	20°7	20°8	27°7	30°6	30°4	21°3	25°6	24°9	25°0	24°0	19	
20	26°6	25°4	23°3	21°2	24°1	28°0	30°6	29°5	26°1	26°6	26°5	28°7	27°9	26°5	20
21	28°0	25°9	27°7	29°1	26°1	25°7	27°9	25°4	26°2	19°2	17°9	19°7	20°7	22°0	21
22	31°1	31°4	31°3	32°6	32°0	32°7	33°3	34°0	35°1	34°7	34°7	35°0	34°7	32°2	22
23	31°2	30°5	30°4	30°8	30°8	30°2	29°8	29°0	29°7	31°4	31°0	30°7	30°7	29°0	23
24	17°8	17°2	16°6	24°0	24°7	27°0	28°0	29°7	30°4	31°6	34°1	36°5	37°3	24°0	24
25	31°8	33°3	32°8	31°4	31°3	29°8	31°6	31°2	32°0	33°4	34°5	35°4	35°6	35°0	25
26	20°1	17°5	15°6	17°7	18°9	19°4	22°5	23°2	20°5	19°7	23°2	22°5	28°9	26	
27	25°3	23°0	23°1	24°4	27°6	25°7	26°5	27°4	28°6	30°4	34°1	34°8	34°6	35°3	27
28	35°2	34°8	35°2	35°9	35°9	36°0	36°1	36°6	36°1	37°3	37°3	37°0	36°5	28	
29	37°6	37°7	37°2	37°4	37°8	37°8	38°2	38°4	38°6	38°8	38°7	38°7	38°7	29	
30	38°4	38°3	38°0	38°4	36°4	35°9	36°1	35°4	36°0	36°5	37°4	37°3	36°7	30	
31	38°7	38°9	39°3	39°3	38°6	37°4	37°3	37°7	37°6	38°0	40°7	41°3	41°7	31	

\* Record defective or instrument out of action.

## WET-BULB THERMOMETER

Days.	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	2 p.m.	Days.
1	34°4	35°0	34°6	34°7	35°4	35°5	37°6	39°0	38°9	40°0	40°3	41°0	40°6	40°0	1
2	39°0	39°0	40°9	40°0	39°1	38°5	38°8	39°3	39°4	39°0	42°2	40°6	41°8	40°0	2
3	30°1	30°0	35°5	35°8	35°7	36°4	36°7	36°7	35°6	37°0	39°7	39°1	39°1	30°1	3
4	38°0	37°8	39°6	38°0	39°2	37°4	35°5	34°9	34°0	36°0	36°7	37°7	38°0	35°5	4
5	20°9	20°5	20°5	30°6	30°6	28°1	28°3	27°8	28°6	30°0	31°1	31°7	31°7	20°5	5
6	30°0	29°9	30°6	30°6	29°7	30°7	31°0	30°3	30°2	29°7	33°8	32°8	34°2	34°2	6
7	23°9	22°7	21°8	21°0	20°9	18°0	18°4	18°2	18°3	19°4	21°6	21°7	23°0	23°0	7
8	27°3	26°9	26°3	26°0	25°0	24°5	24°7	25°0	25°0	25°7	27°0	28°2	28°2	28°2	8
9	28°0	24°4	23°0	23°7	21°8	21°5	20°0	18°5	18°4	20°4	20°9	21°8	23°5	23°7	9
10	31°0	30°7	30°7	30°7	30°7	30°4	30°8	30°7	30°4	30°8	31°0	30°5	30°5	30°4	10
11	20°1	20°4	20°5	20°1	20°0	20°7	20°7	20°6	20°4	25°4	24°8	24°8	24°8	20°1	11
12	22°7	25°7	25°6	25°3	25°4	27°6	28°2	31°4	30°0	28°4	25°9	28°5	28°5	20°5	12
13	24°8	24°6	25°3	25°9	22°4	19°8	19°2	20°9	19°3	20°5	21°1	20°5	20°5	19°3	13
14	20°4	25°3	23°3	19°0	17°9	14°8	14°2	16°4	18°9	15°0	21°0	19°4	20°0	20°0	14
15	25°0	25°0	25°4	25°4	25°4	25°0	26°0	25°5	27°2	27°0	26°6	25°0	25°0	25°1	15
16	24°2	23°4	23°1	21°6	20°9	19°5	21°0	21°6	21°7	22°7	22°4	22°4	22°4	21°6	16
17	13°6														

## ABERDEEN OBSERVATORY

## VAPOUR TENSION

Days.	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	Days.
1	'185	'190	'188	'189	'194	'197	'207	'215	'214	'213	'219	'211	'217	1
2	'207	'211	'220	'220	'215	'210	'213	'216	'215	'213	'220	'229	'229	2
3	'195	'191	'190	'193	'191	'194	'197	'199	'199	'192	'193	'210		3
4	'214	'210	'214	'205	'214	'204	'195	'187	'184	'180	'192	'194	'196	4
5	'146	'143	'146	'156	'136	'133	'133	'128	'130	'130	'140	'146		5
6	'146	'146	'153	'157	'155	'152	'154	'160	'153	'152	'178	'180	'181	6
7	'109	'102	'100	'079	'081	'062	'076	'072	'067	'073	'077	'077		7
8	'149	'144	'143	'138	'124	'124	'104	'127	'122	'135	'121	'124	'127	8
9	'139	'123	'123	'109	'108	'104	'066	'085	'084	'085	'098	'094	'097	9
10	'153	'147	'148	'147	'168	'161	'166	'166	'166	'146	'143	'144	'153	10
11	'136	'143	'144	'139	'142	'143	'122	'109	'124	'127	'095	'089	'084	11
12	'099	'117	'113	'109	'121	'122	'170	'169	'166	'167	'150	'107	'120	12
13	'091	'094	'088	'089	'088	'074	'079	'098	'071	'071	'073	'071		13
14	'117	'123	'108	'076	'064	'069	'073	'067	'070	'066	'053	'069	'063	14
15	'107	'110	'111	'121	'131	'126	'117	'124	'126	'115	'136	'130		15
16	'099	'088	'076	'072	'071	'067	'080	'075	'073	'073	'063	'066		16
17	'057	-	-	-	-	-	-	-	-	-	-	-		17
18	'038	'045	'047	'045	'054	'063	'060	'058	'057	'078	'081	'075		18
19	'093	'100	'105	'101	'144	'094	'096	'087	'091	'106	'132	'124	'114	19
20	'099	'105	'117	'091	'113	'128	'105	'117	'132	'113	'118	'084	'089	20
21	'128	'129	'125	'119	'115	'097	'096	'099	'095	'077	'046	'048	'055	21
22	'147	'148	'154	'167	'165	'172	'172	'170	'157	'168	'172	'166	'168	22
23	'171	'148	'150	'145	'156	'153	'149	'148	'156	'128	'135	'144	'140	23
24	'059	'053	'051	'061	'071	'097	'114	'124	'130	'147	'178	'162		24
25	'083	'145	'135	'139	'132	'119	'130	'135	'144	'165	'165	'170		25
26	'084	'073	'077	'073	'070	'067	'075	'074	'060	'075	'092	'091		26
27	'104	'088	'103	'117	'121	'122	'128	'145	'165	'170	'170	'183		27
28	'192	'188	'196	'204	'208	'209	'206	'205	'207	'209	'214	'213	'208	28
29	'219	'222	'223	'220	'223	'223	'230	'228	'231	'232	'233	'235		29
30	'232	'229	'228	'230	'215	'211	'214	'214	'221	'222	'223	'223		30
31	'233	'237	'241	'241	'234	'219	'211	'212	'207	'208	'211	'208		31

\* Record defective or instrument out of order.  
0.137

## RAINFALL

Days.	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	Days.
1	-	'005	'005	-	-	-	-	-	-	-	-	-	-	1
2	-	-	-	-	-	-	-	-	-	-	-	-	-	2
3	-	-	-	-	-	-	-	-	-	-	-	-	-	3
4	-	-	-	-	-	-	-	-	-	-	-	-	-	4
5	-	-	-	-	-	-	-	-	-	-	-	-	-	5
6	-	-	-	-	-	-	-	-	-	-	-	-	-	6
7	-	-	-	-	-	-	-	-	-	-	-	-	-	7
8	-	-	-	-	-	-	-	-	-	-	-	-	-	8
9	-	-	-	-	-	-	-	-	-	-	-	-	-	9
10	-	-	-	-	-	-	-	-	-	-	-	-	-	10
11	-	-	-	-	-	-	-	-	-	-	-	-	-	11
12	-	-	-	-	-	-	-	-	-	-	-	-	-	12
13	-	-	-	-	-	-	-	-	-	-	-	-	-	13
14	-	-	-	-	-	-	-	-	-	-	-	-	-	14
15	-	-	-	-	-	-	-	-	-	-	-	-	-	15
16	-	-	-	-	-	-	-	-	-	-	-	-	-	16
17	-	-	-	-	-	-	-	-	-	-	-	-	-	17
18	-	-	-	-	-	-	-	-	-	-	-	-	-	18
19	-	-	-	-	-	-	-	-	-	-	-	-	-	19
20	-	-	-	-	-	-	-	-	-	-	-	-	-	20
21	-	-	-	-	-	-	-	-	-	-	-	-	-	21
22	-	-	-	-	-	-	-	-	-	-	-	-	-	22
23	-	-	-	-	-	-	-	-	-	-	-	-	-	23
24	-	-	-	-	-	-	-	-	-	-	-	-	-	24
25	-	-	-	-	-	-	-	-	-	-	-	-	-	25
26	-	-	-	-	-	-	-	-	-	-	-	-	-	26
27	-	-	-	-	-	-	-	-	-	-	-	-	-	27
28	-	-	-	-	-	-	-	-	-	-	-	-	-	28
29	-	-	-	-	-	-	-	-	-	-	-	-	-	29
30	-	-	-	-	-	-	-	-	-	-	-	-	-	30
31	-	-	-	-	-	-	-	-	-	-	-	-	-	31

- Melted snow at 10 a.m. = '010 -

- Melted snow at 10 a.m. = '040 -

- Melted snow and hail = '200 -

- Melted snow at 10 a.m. = '080 -

- Melted snow at 10 a.m. = '150 -

- Melted snow at 10 a.m. = '260 -

- Melted snow at 10 a.m. = '150 -

Official No. 81.

P3

# HOURLY READINGS

FROM THE



## SELF-RECORDING INSTRUMENTS

58

AT THE

FOUR OBSERVATORIES UNDER THE METEOROLOGICAL COUNCIL.

1886.

Published by the Authority of the Meteorological Council.



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1889.

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HOURLY READINGS:— (The figures under the months indicate the pages.)												
—	Jan. Feb. March. April. May. June. July. August. Sept. Oct. Nov. Dec.											
<b>VALENCIA :</b>												
Barometer	4	28	52	76	100	124	148	172	196	220	244	268
Wind	—	—	—	—	—	—	—	—	—	—	—	—
Dry-bulb Thermometer	6	30	54	78	102	126	150	174	198	222	246	270
Wet-bulb Thermometer	—	—	—	—	—	—	—	—	—	—	—	—
Vapour Tension	8	42	56	80	104	128	152	176	200	224	248	272
Rainfall	—	—	—	—	—	—	—	—	—	—	—	—
<b>ABERDEEN :</b>												
Barometer	10	34	58	82	106	130	154	178	202	226	250	274
Wind	—	—	—	—	—	—	—	—	—	—	—	—
Dry-bulb Thermometer	12	34	60	84	108	132	156	180	204	228	252	276
Wet-bulb Thermometer	—	—	—	—	—	—	—	—	—	—	—	—
Vapour Tension	14	38	62	86	110	134	158	182	206	230	254	278
Rainfall	—	—	—	—	—	—	—	—	—	—	—	—
<b>FALMOUTH :</b>												
Barometer	16	40	64	88	112	136	160	184	208	232	256	280
Wind	—	—	—	—	—	—	—	—	—	—	—	—
Dry-bulb Thermometer	18	2	66	90	114	138	162	186	210	234	258	282
Wet-bulb Thermometer	—	—	—	—	—	—	—	—	—	—	—	—
Vapour Tension	20	4	68	92	116	140	164	188	212	236	260	284
Rainfall	—	—	—	—	—	—	—	—	—	—	—	—
<b>KEW :</b>												
Barometer	22	6	70	94	118	142	166	190	214	238	262	286
Wind	—	—	—	—	—	—	—	—	—	—	—	—
Dry-bulb Thermometer	24	4	72	96	120	144	168	192	216	240	264	288
Wet-bulb Thermometer	—	—	—	—	—	—	—	—	—	—	—	—
Vapour Tension	26	5	74	98	122	146	170	194	218	242	266	290
Rainfall	—	—	—	—	—	—	—	—	—	—	—	—

# ANNUAL TABLES

COMPILED FROM

## THE CONTINUOUS RECORDS OF THE FOUR BRITISH OBSERVATORIES

For the Year 1886.

TABLE I.—MEAN MONTHLY RESULTS from the CONTINUOUS RECORDS at the FOUR BRITISH OBSERVATORIES for the Year 1886.

### VALENCIA.

1886.	THERMOMETER.				BAROMETER.				RAINFALL.							
	Means.	Extremes.			Means.	Extremes.			VAPOUR TENSION.	TOTAL (see Note at foot of page).	Number of Rainy Days ( $>005$ in. and upwards).					
		Maximum.		Minimum.		Maximum.		Minimum.								
		Day.	Ther.	Day.	Ther.	Day.	Bar.	Day.	Bar.							
January	41°9	D. 3rd,	H. 3 P.M.	52°6	I. 7th,	H. 6 a.m.	28°2	ins. 29°728	I. 12th,	I. 1 a.m.	30°394	18th, 5 a.m.	29°664	219	5°461	22
February	43°4	7th,	I. 1 p.m.	52°6	26th,	3 a.m.	31°9	30°029	8th,	Noon	30°46	1st, 3 a.m.	397	245	5°861	22
March	43°5	24th,	3 p.m.	55°2	13th,	2 a.m.	29°0	29°769	13th,	10 a.m.	30°35	5th, 5 a.m.	244	233	6°365	21
April	48°2	25th,	4 p.m.	67°0	10th,	2 a.m.	35°7	861	14th,	9 p.m.	30°429	8th, 3 a.m.	29°077	261	3°100	16
May	50°6	31st,	2 p.m.	64°4	{ 12th, 13th,	{ 9 a.m. 1 a.m.	38°6	29°856	5th,	Noon	30°324	17th, 1 p.m.	28°988	296	5°368	24
June	56°9	30th,	1 p.m.	73°3	10th,	2 a.m.	49°4	30°022	16th,	10 p.m.	30°319	9th, 5 p.m.	29°621	378	1°305	16
July	59°0	1st,	3 p.m.	73°3	15th,	6 a.m.	48°6	29°867	4th,	10 p.m.	30°385	21st, Midt.	081	407	5°955	24
August	58°9	27th,	3 p.m.	68°0	3rd,	2 a.m.	48°2	949	19th, 10 & 11	p.m. & Midt.	30°328	13th, 5 a.m.	145	432	5°355	25
September	57°1	19th,	2 p.m.	66°1	23rd,	5 a.m.	45°6	904	15th,	10 p.m.	30°371	9th, 9 a.m.	29°379	379	4°060	21
October	52°6	4th,	2 p.m.	64°9	27th,	8 a.m.	36°5	701	25th,	9 a.m.	30°283	15th, 1 a.m.	28°742	327	7°760	22
November	48°6	3rd,	9 a.m.	56°5	9th,	8 a.m.	36°6	900	24th,	10 p.m.	30°763	15th, 7 a.m.	29°135	287	4°822	24
December	43°3	5th,	11 p.m.	53°4	19th,	6 p.m.	26°8	29°728	30th,	11 p.m.	30°457	8th, 9 a.m.	28°298	233	7°413	28
Annual	50°3	—	—	—	—	—	29°860	—	—	—	—	—	308	62°825	265	

### ABERDEEN.

January	°	D. 1st, 2 p.m.	H. 55°9	°	D. 7th, 8 a.m.	19°0	ins. 29°415	D. 12th, 1 a.m.	ins. 29°995	D. 31st, 1 p.m.	H. 28°64	ins. 1°65	in. 2°455	in. 21		
January	35°4	1st,	2 p.m.	55°9	7th,	8 a.m.	23°8	987	23rd,	1 a.m.	30°420	1st, 5 a.m.	756	180	2°075	18
February	35°7	8th,	4 p.m.	48°0	25th,	5 a.m.	21°9	811	11th,	1 a.m.	30°505	30th, 8 a.m.	840	189	2°580	22
March	37°6	21st,	4 p.m.	56°0	12th,	6 a.m.	31°7	771	16th,	9 & 10 p.m.	30°312	8th, 5 a.m.	569	210	1°235	19
April	42°1	27th,	2 p.m.	57°4	10th,	6 a.m.	31°7	771	16th,	9 & 10 p.m.	30°302	28th, 4 a.m.	28990	253	3°995	22
May	46°2	7th,	11 a.m.	64°3	9th,	2 a.m.	33°5	797	1st, 11 p.m.	—	30°219	23rd, 10 a.m.	303	285	1°045	12
June	51°6	28th,	1 p.m.	67°2	3rd,	3 a.m.	36°2	817	29th, 11 p.m.	—	30°219	14th, 9 a.m.	007	354	2°725	21
July	55°1	2nd,	11 a.m.	76°4	9th,	2 a.m.	40°6	698	3rd, 1 p.m.	—	30°200	14th, 9 a.m.	370	548	1°000	11
August	56°0	20th,	3 p.m.	72°8	4th,	4 a.m.	37°7	762	19th, 4 p.m.	—	30°167	16th, 10 a.m.	370	548	1°000	11
September	51°4	1st,	Noon	67°4	17th,	6 a.m.	34°6	835	15th, 1 p.m.	—	30°536	9th, 6 p.m.	214	201	1°745	14
October	49°9	2nd,	3 p.m.	59°1	15th,	3 a.m.	32°3	723	24th, 9 p.m.	—	30°497	15th, Midt.	28865	210	2°400	21
November	43°6	25th,	2 p.m.	54°3	30th,	Midt.	33°0	655	24th, 8 p.m.	—	30°514	15th, 8 p.m.	29004	232	2°220	21
December	33°3	6th,	0.20 a.m.	47°2	20th, about 10 p.m.	12°5	29°406	30th, 11 p.m.	30°347	8th, 8 p.m.	27670	152	4°355	22		
Annual	44°8	—	—	—	—	—	29°723	—	—	—	—	247	27830	224		

NOTE.—The rainfall values given in these Tables are based on the Amounts measured at 10 a.m. each day, and entered to the preceding day. These have been taken in preference to the totals for the 24 hours ending at Midnight, in order to make the results comparable with those from most other stations; but it will occasionally be found that the monthly totals given above differ a little from the sum of the daily totals given in the "Hourly Readings."

TABLE II.—PART 2.

FIVE-DAY MEANS of the DRY-BULB and WET-BULB TEMPERATURES, and of PRESSURE, from the CONTINUOUS RECORDS of the FOUR BRITISH OBSERVATORIES, July to December 1886.

In Degrees Centigrade and Millimetres.

Five-Day Periods.	TEMPERATURE.								PRESSURE.				Five-Day Periods.
	Valencia, 3'66 m.		Aberdeen, 12'50 m.		Falmouth, 1'22 m.		Kew, 3'05 m.		Valencia, 7'01 m.	Aberdeen, 26'82 m.	Falmouth, 56'78 m.	Kew, 10'38 m.	
	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	mm.	mm.	mm.	mm.	
July 30-4	° C. 17°01	° C. 14°94	° C. 14°33	° C. 12°61	° C. 18°06	° C. 14°39	° C. 18°17	° C. 14°33	mm. 769°20	mm. 765°29	mm. 764°71	mm. 768°21	July 30-4
" 5-9	15°00	13°00	13°00	10°22	16°39	13°89	18°06	14°06	64°96	57°56	59°55	61°42	" 5-9
" 10-14	14°89	13°44	13°28	10°83	15°61	13°61	15°50	13°00	50°80	51°45	57°56	59°80	" 10-14
" 15-19	14°89	13°67	12°89	10°28	16°17	14°44	16°78	14°11	54°29	50°99	53°86	57°29	" 15-19
" 20-24	14°56	13°28	14°11	12°50	15°72	14°44	17°61	15°00	49°32	50°71	50°86	56°22	" 20-24
" 25-29	14°00	12°28	10°61	9°22	14°22	12°67	14°72	12°50	57°01	53°83	52°92	56°19	" 25-29
August 30-3	13°50	11°94	11°06	8°72	14°28	12°72	14°89	12°33	58°12	52°33	53°45	56°60	August 30-3
" 4-8	15°44	14°50	13°44	11°28	16°00	14°94	17°17	14°72	61°86	55°84	59°19	62°02	" 4-8
" 9-13	14°67	13°11	11°94	10°22	14°89	13°56	15°78	13°56	55°23	51°47	53°25	56°91	" 9-13
" 14-18	14°78	13°44	12°50	10°72	14°72	13°33	15°61	13°17	62°90	55°58	59°37	61°37	" 14-18
" 19-23	14°56	13°30	13°67	11°78	15°72	14°78	16°00	14°17	65°77	62°49	60°34	63°74	" 19-23
" 24-28	15°72	14°78	14°56	12°44	16°56	15°39	18°17	15°67	60°05	55°99	59°32	62°24	" 24-28
September 29-2	15°06	13°83	15°22	12°94	16°17	14°83	18°61*	15°72	61°25	57°75	59°12	62°72	September 29-2
" 3-7	14°28	12°83	12°22	10°89	14°33	13°22	17°17	15°22	58°51	57°72	56°37	60°10	" 3-7
" 8-12	14°17	12°44	12°50	10°78	15°72	14°72	15°56	13°89	52°94	48°40	54°34	59°39	" 8-12
" 13-17	13°61	12°00	8°83	7°33	15°56	13°89	14°89	11°83	65°77	61°53	67°50	" 13-17	
" 18-22	14°50	12°44	9°11	7°39	13°89	12°33	9°89	58°00	62°02	53°18	58°68	" 18-22	
" 23-27	12°50	10°83	10°66	8°11	12°39	10°89	11°67	9°78	62°44	56°85	59°85	63°29	" 23-27
October 28-2	14°22	12°78	11°44	9°56	14°17	13°39	15°06	12°94	53°15	49°59	54°67	59°12	October 28-2
" 3-7	14°56	13°22	11°78	11°39	14°72	14°17	15°44	14°06	52°87	51°83	58°12	" 3-7	
" 8-12	12°56	10°94	10°22	9°17	12°39	11°44*	12°39	11°00	50°53	47°56	51°11	55°18	" 8-12
" 13-17	11°00	9°22	9°17	7°83	10°50	9°00	10°11	8°50	45°32	40°48	40°45	41°19	" 13-17
" 18-22	9°67	7°94	9°06	8°17	10°11	9°00	9°44	8°56	56°50	55°51	50°20	54°16	" 18-22
" 23-27	8°72	7°44	8°67	7°06	10°39	9°44	9°67	8°11	64°20	55°89	63°36	" 23-27	
November 28-1	11°28	10°33	10°22	9°22	12°39	11°67	12°00	11°00	59°32	60°26	59°39	65°32	November 28-1
" 2-6	8°94	7°33	7°00	5°33	8°78	7°50	8°00	6°80	53°40	46°83	51°04	53°83	" 2-6
" 7-11	7°28	5°94	6°11	4°89	6°28	5°11	5°94	4°89	51°83	48°07	44°66	48°45	" 7-11
" 12-16	9°50	8°39	6°22	5°22	9°00	8°00	7°89	6°94	50°56	42°71	47°33	49°64	" 12-16
" 17-21	11°17	10°39	6°28	5°00	10°50	9°50	7°22	6°44	62°47	56°96	61°15	64°07	" 17-21
" 22-26	9°22	8°33	6°56	5°28	8°67	7°89	8°61	2°33†	76°04	71°84	71°36	75°78	" 22-26
December 27-1	8°44	6°78	4°39	2°94	8°00	6°44	5°33	4°30	64°10	51°93	59°98	62°09	December 27-1
" 2-6	8°44	7°56	1°94	0°61	6°67	2°83	1°78	59°85	48°91	56°53	58°94	" 2-6	
" 7-11	6°72	5°11	2°50	1°39	6°89	5°22	5°50	3°94	38°59	27°11	37°38	38°36	" 7-11
" 12-16	5°94	4°78	1°89	1°06†	7°28	6°06	5°72	4°61	45°17	45°56	42°32	46°57	" 12-16
" 17-21	1°94	(0°94)	-3°11	-3°89	1°00	0°22	-2°17	-2°67	61°18	54°77	55°46	59°12	" 17-21
" 22-26	6°28	4°94	1°17	(0°11)	5°72	4°61	2°17	1°89	57°09	47°30	52°48	55°23	" 22-26
" 27-31	8°00	6°78	0°66	-0°83	5°61	4°33	1°06	0°28	766°08	757°36	761°93	762°31	" 27-31

\* Note.—Means which are enclosed in brackets are a little doubtful, one of the five daily means being approximate.  
† Doubtful, three of the five daily means are approximate. ‡ Doubtful, two of the five daily means are approximate. § Mean of four days only.

## EXTRACTS FROM THE

## HOURLY READINGS, 1886.

## INTRODUCTORY REMARKS.

THE following Tables give for each of the four British Self-recording Observatories of the Meteorological Office, for each hour—

1. Readings of the barometer reduced to 32° Fahrenheit.
2. Readings of the dry-bulb and wet-bulb thermometers.
3. Direction and velocity of the wind.
4. Rainfall.
5. Vapour tension, or proportion of vapour in the air. Also
6. Daily minima, maxima, and range, of pressure and temperature.
7. Daily means of the barometer, and of the dry-bulb and wet-bulb thermometers; and
8. Daily total fall of rain.

In a separate set of tables are given the means of pressure and temperature for periods of five days throughout the year; the monthly and yearly means of pressure, temperature, and vapour tension, and the monthly and yearly amounts of rainfall; as well as the extreme range of pressure and temperature, and the number of rainy days for each month and for the year. These tables are repeated in French measures.

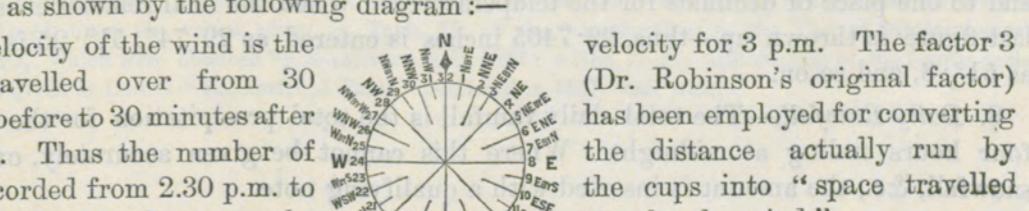
1. Pressure.—The barometer readings are measurements of the photographic barograph curves, made at points two minutes after each hour. They are reduced to 32° Fahrenheit by a mechanical arrangement in the instrument itself, and have been corrected to agree with the readings of the Control Standard barometer, but no correction has been applied for the height of the stations above mean sea level.

The corrections required for the reduction of the readings to the mean sea level are given on page 3.

2. Temperature.—The thermometer readings are measurements of the photographic thermograph curves, dry bulb, and wet bulb, made at points two minutes before each hour, corrected in each case for any instrumental errors. The heights of the bulbs above the ground vary from 4 feet at Falmouth to 41 feet at Aberdeen, but no correction for this height has been applied to the readings.

3. Wind.—The direction of the wind is that recorded exactly at the hour. It is given according to true bearings, in numbers corresponding to the various points of the compass, as shown by the following diagram:—

The velocity of the wind is the space travelled over from 30 minutes before to 30 minutes after the hour. Thus the number of miles recorded from 2.30 p.m. to 3.30 p.m. is set down as the velocity for 3 p.m. The factor 3 (Dr. Robinson's original factor) has been employed for converting the distance actually run by the cups into "space travelled over by the wind."



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Corrections for the effect of friction have been applied as follows:—

When the tabulated velocity is 0 miles, correction is 1·5 miles.

" "	1—3 "	1·0 "
" "	4—10 "	0·5 "
" "	above 10 "	0·0 "

4. *Rainfall.*—The rainfall is obtained from the records of Beckley's self-registering gauge, and is the total precipitation for the 60 minutes ending at the hour. Thus the total fall registered in the interval from 1 p.m. to 2 p.m. is taken as the fall for 2 p.m. Occasionally in winter the instrument fails to record in consequence of snow or frost, and no hourly falls can be given. In such cases the amount found in the gauge is measured at about 10 o'clock each morning, and the total fall is inserted with a footnote giving the number of hours during which the instrument had failed to act,—thus, "Total for preceding 24 hours." Occasionally also a small quantity of water is found in the rain-gauge in the morning, which, though believed to be rainfall, it is impossible to assign to any particular hour. In such a case the amount will be found entered at 10 a.m. with the note "Measured at 10 a.m." When the amount found in the gauge is known to have been deposited as *dew*, a note to that effect is inserted.

5. *Vapour Tension.*—This gives the proportion of the total atmospheric pressure which is due to the presence of vapour in the air, expressed in inches of mercury. It is obtained from the readings of the dry-bulb and wet-bulb thermometers by using Glaisher's Hygrometrical Tables, 5th edition, London, 1869. When from any cause the reading of either the dry-bulb or wet-bulb thermometer is missing, if a pair of standard readings are available the latter have always been used in calculating the vapour tension.

It should be noted that the monthly mean values of vapour tension given in the annual tables are not obtained from these hourly values, but are calculated directly from the mean dry-bulb and wet-bulb temperatures for the month; the differences between the results by the two methods are, however, invariably very slight.

6. *Minima and Maxima.*—The minimum and maximum temperatures are the values of the lowest and highest points respectively of the thermograph curves for the 24 hours ending at midnight. For the pressure, however, the lowest and highest *hourly readings* are taken, and, while in some cases these are not the true minima and maxima of the day, the differences are ordinarily but slight.

The *daily range* is, for both pressure and temperature, the difference between the daily minima and maxima.

7. *Means.*—The daily means of the barometer and thermometer readings are obtained by adding together the hourly readings for each day and dividing the sum by 24. These means are not carried further than to three places of decimals for the pressures, and to one place of decimals for the temperatures. When the final remainder is 12 the last figure is thrown up—thus, 29·7465 inches is entered as 29·747, 51°·25 is entered as 51°·3, and so on.

8. *Daily Rainfall.*—The total daily rainfall is the total precipitation for the twenty-four hours ending at midnight. Where this cannot be given accurately, owing to snowfall, &c., the amount is inserted with a qualifying note.

In order, however, to make the monthly totals given in the annual tables comparable with those of most other stations, they have been obtained from the daily amounts

measured at 10 a.m. each day, and entered as the fall for the preceding day; and they will therefore at times differ from the sums of the daily totals shown in the following pages.

*Time.*—Greenwich mean time is kept at all the observatories, and not local time.

*Approximate Readings.*—It occasionally happens that from some cause or other a little doubt is attached to a reading, and in such cases a note is always appended to show that the reading is approximate only. The limit of error is, however, always slight, seldom, if ever, exceeding 0·01 inch in the case of pressure, and 1°·0 in that of temperature.

*Interpolations.*—Readings printed in italic type are interpolations which have been used in calculating the means. In some cases the gaps were too great to be bridged over by interpolation, and the spaces are consequently left blank. Wherever it has been possible, however, means have been calculated for such days, and they will be found entered with the note "Probable mean."

CORRECTIONS to be applied to the READINGS of the PHOTOGRAPHIC BAROMETER CURVES to reduce them to MEAN SEA LEVEL. The readings have already been reduced to 32° Fahrenheit.

(The correction is additive.)

Observatory, and Height of Barometer Cistern above Mean Sea Level.	Approximate Sea-Level Pressure.	Temperature of the Outside Air (Dry-bulb).									
		0°.	10°.	20°.	30°.	40°.	50°.	60°.	70°.	80°.	90°.
VALENCIA, 23 feet	28·0	.027	.026	.025	.024	.024	.023	.023	.022	.022	.021
	29·0	.028	.027	.026	.025	.025	.024	.024	.023	.023	.022
	30·0	.029	.028	.027	.026	.026	.025	.025	.024	.024	.023
ABERDEEN, 88 feet	28·0	.102	.098	.097	.094	.093	.091	.089	.087	.085	.083
	29·0	.105	.102	.100	.098	.096	.094	.092	.090	.088	.086
	30·0	.108	.106	.103	.102	.099	.097	.095	.093	.091	.089
FALMOUTH, 183 feet	28·0	.210	.205	.200	.196	.191	.188	.184	.180	.176	.173
	29·0	.218	.212	.207	.203	.198	.194	.191	.186	.182	.179
	30·0	.226	.220	.214	.210	.205	.201	.197	.192	.188	.185
KEW, 34 feet	28·0	.038	.038	.038	.037	.036	.035	.034	.034	.033	.032
	29·0	.040	.039	.039	.038	.037	.036	.035	.035	.034	.033
	30·0	.042	.041	.040	.039	.038	.037	.036	.036	.035	.034

NOTE.—The corrections given above differ slightly from those which will be found in a corresponding table printed in the "Quarterly Weather Report" for 1869. The differences are due to the fact that the present table is based upon the values given in Table II. of the "Instructions in the Use of Meteorological Instruments," which were obtained by re-calculation in 1875; whilst in the construction of the former table the values given in Lowe's "Barometrical Table," published in 1857, were used.

## ABERDEEN OBSERVATORY

## BAROMETER

Days.	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	2 p.m.	Days.
1	ins.	1													
2	29 <sup>556</sup>	29 <sup>536</sup>	29 <sup>531</sup>	29 <sup>510</sup>	29 <sup>495</sup>	29 <sup>470</sup>	29 <sup>470</sup>	29 <sup>464</sup>	29 <sup>457</sup>	29 <sup>450</sup>	2				
3	37 <sup>2</sup>	39 <sup>1</sup>	40 <sup>0</sup>	41 <sup>0</sup>	44 <sup>0</sup>	49 <sup>3</sup>	50 <sup>4</sup>	54 <sup>5</sup>	56 <sup>2</sup>	57 <sup>3</sup>	56 <sup>4</sup>	56 <sup>4</sup>	56 <sup>4</sup>	56 <sup>4</sup>	3
4	69 <sup>1</sup>	68 <sup>3</sup>	65 <sup>9</sup>	63 <sup>6</sup>	58 <sup>7</sup>	55 <sup>3</sup>	50 <sup>2</sup>	43 <sup>0</sup>	30 <sup>0</sup>	25 <sup>3</sup>	20 <sup>0</sup>	14 <sup>4</sup>	10 <sup>5</sup>	10 <sup>5</sup>	4
5	28 <sup>944</sup>	28 <sup>973</sup>	28 <sup>954</sup>	28 <sup>944</sup>	28 <sup>939</sup>	28 <sup>916</sup>	28 <sup>925</sup>	28 <sup>944</sup>	28 <sup>970</sup>	28 <sup>975</sup>	031	105	164	164	5
6	29 <sup>521</sup>	29 <sup>555</sup>	29 <sup>505</sup>	29 <sup>503</sup>	29 <sup>512</sup>	29 <sup>494</sup>	29 <sup>502</sup>	29 <sup>527</sup>	29 <sup>520</sup>	29 <sup>520</sup>	773	777	799	799	6
7	925	916	913	896	867	849	809	792	752	610	554	499	499	499	7
8	067	061	059	051	044	054	063	097	122	144	174	219	240	240	8
9	489	537	505	504	620	554	611	734	700	808	845	857	870	870	9
10	916	907	900	889	870	845	831	823	806	776	744	716	695	695	10
11	565	504	564	505	564	569	585	610	644	679	734	745	769	795	11
12	995	975	984	949	932	29 <sup>914</sup>	29 <sup>858</sup>	29 <sup>824</sup>	29 <sup>750</sup>	697	697	630	571	555	12
13	200	117	075	024	000	28 <sup>996</sup>	28 <sup>992</sup>	28 <sup>997</sup>	024	032	030	044	055	13	
14	674	696	720	734	773	29 <sup>777</sup>	29 <sup>805</sup>	29 <sup>795</sup>	775	767	710	646	617	14	
15	244	213	194	160	140	137	122	104	100	075	046	035	035	035	15
16	29 <sup>005</sup>	29 <sup>013</sup>	29 <sup>019</sup>	29 <sup>035</sup>	29 <sup>042</sup>	29 <sup>050</sup>	29 <sup>082</sup>	29 <sup>092</sup>	29 <sup>093</sup>	29 <sup>100</sup>	29 <sup>085</sup>	29 <sup>066</sup>	29 <sup>045</sup>	29 <sup>045</sup>	16
17	28 <sup>730</sup>	28 <sup>735</sup>	28 <sup>727</sup>	28 <sup>740</sup>	28 <sup>751</sup>	28 <sup>815</sup>	28 <sup>833</sup>	28 <sup>824</sup>	28 <sup>801</sup>	28 <sup>852</sup>	28 <sup>835</sup>	28 <sup>815</sup>	28 <sup>805</sup>	28 <sup>790</sup>	17
18	28 <sup>794</sup>	28 <sup>703</sup>	28 <sup>708</sup>	28 <sup>799</sup>	28 <sup>797</sup>	28 <sup>805</sup>	28 <sup>816</sup>	28 <sup>839</sup>	28 <sup>874</sup>	28 <sup>873</sup>	28 <sup>867</sup>	28 <sup>870</sup>	28 <sup>870</sup>	28 <sup>870</sup>	18
19	29 <sup>026</sup>	29 <sup>044</sup>	29 <sup>063</sup>	29 <sup>084</sup>	29 <sup>090</sup>	29 <sup>100</sup>	29 <sup>107</sup>	29 <sup>116</sup>	29 <sup>124</sup>	29 <sup>130</sup>	29 <sup>122</sup>	29 <sup>115</sup>	29 <sup>114</sup>	29 <sup>104</sup>	19
20	379	406	422	445	469	496	522	557	575	604	626	635	641	644	20
21	649	641	635	634	630	627	623	644	647	640	632	621	617	617	21
22	605	604	600	596	604	605	610	626	644	667	685	692	696	707	22
23	757	754	739	724	707	700	690	687	690	687	680	663	657	657	23
24	650	640	632	621	620	614	612	611	609	607	596	590	574	545	24
25	572	585	574	569	576	577	579	585	590	597	600	607	594	592	25
26	614	621	622	630	632	643	652	665	675	680	672	665	665	665	26
27	670	687	704	726	736	748	767	784	805	825	845	845	845	845	27
28	804	850	834	813	773	761	759	754	750	744	711	700	700	700	28
29	567	540	524	493	477	462	450	434	426	417	384	365	346	329	29
30	29 <sup>293</sup>	29 <sup>294</sup>	29 <sup>293</sup>	29 <sup>270</sup>	29 <sup>240</sup>	29 <sup>219</sup>	29 <sup>182</sup>	29 <sup>182</sup>	29 <sup>170</sup>	29 <sup>127</sup>	29 <sup>095</sup>	29 <sup>075</sup>	29 <sup>075</sup>	30	
31	28 <sup>900</sup>	28 <sup>882</sup>	28 <sup>870</sup>	28 <sup>837</sup>	28 <sup>800</sup>	28 <sup>785</sup>	28 <sup>757</sup>	28 <sup>730</sup>	28 <sup>705</sup>	28 <sup>707</sup>	28 <sup>695</sup>	28 <sup>694</sup>	28 <sup>694</sup>	28 <sup>690</sup>	31

WIND. Direction in Numbers { 8=E. 24=W.  
16=S. 32=N. }

Days.	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	Days.	
DAYS.	D.	V.	D.	V.	D.	V.	D.	V.	D.	V.	D.	V.	DAYS.	
1	15	6 <sup>5</sup>	18	5 <sup>5</sup>	16	9 <sup>5</sup>	15	7 <sup>5</sup>	14	8 <sup>5</sup>	12	8 <sup>5</sup>	21	
2	23	15	24	21	23	26	24	31	23	16	28	27	5 <sup>5</sup>	2
3	20	11	20	13	19	12	19	11	17	11	16	11	11	3
4	20	19	20	21	21	24	20	23	20	18	20	13	10	4
5	18	5 <sup>5</sup>	18	5 <sup>5</sup>	19	7 <sup>5</sup>	15	6 <sup>5</sup>	16	8 <sup>5</sup>	22	15	23	5
6	27	13	27	11	27	8 <sup>5</sup>	27	12	30	14	29	13	20	6
7	27	5 <sup>5</sup>	22	5 <sup>5</sup>	21	6 <sup>5</sup>	21	9 <sup>5</sup>	21	5 <sup>5</sup>	21	3	10	7
8	24	20	23	21	24	26	24	29	24	23	25	30	25	8
9	27	40	27	33	27	36	27	35	28	23	27	28	25	9
10	25	8 <sup>5</sup>	25	9 <sup>5</sup>	25	6 <sup>5</sup>	22	5 <sup>5</sup>	22	4 <sup>5</sup>	19	10 <sup>5</sup>	19	10
11	18	4	24	7 <sup>5</sup>	24	9 <sup>5</sup>	25	11	27	14	28	16	27	11
12	26	12	26	10 <sup>5</sup>	24	10 <sup>5</sup>	23	10 <sup>5</sup>	21	9 <sup>5</sup>	19	13	16	12
13	20	10 <sup>5</sup>	18	6 <sup>5</sup>	22	15	25	15	27	2				

## ABERDEEN OBSERVATORY

## DRY-BULB THERMOMETER

Days.	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	2 p.m.	Days.
1	40° 1	47° 9	48° 0	47° 5	47° 3	40° 7	40° 8	49° 5	47° 0	51° 5	52° 7	53° 0	53° 0	55° 3	1
2	47° 6	47° 0	46° 3	45° 3	44° 1	42° 1	40° 3	40° 2	41° 4	42° 0	44° 0	44° 0	44° 0	44° 2	2
3	37° 2	37° 1	37° 7	38° 0	38° 2	38° 4	39° 3	40° 6	41° 0	41° 6	43° 0	43° 4	47° 6	49° 6	3
4	37° 9	35° 7	39° 0	37° 4	37° 7	35° 6	35° 1	36° 3	36° 1	37° 1	38° 4	38° 6	38° 2	38° 4	4
5	30° 9	30° 9	32° 2	31° 4	32° 6	35° 0	34° 6	34° 4	35° 0	35° 6	34° 7	33° 6	31° 9	33° 6	5
6	29° 2	28° 4	26° 5	28° 0	29° 9	30° 2	26° 9	30° 8	32° 4	32° 4	30° 9	30° 9	30° 4	30° 6	6
7	25° 0	23° 8	22° 1	21° 5	20° 4	21° 6	20° 3	21° 0	20° 1	20° 6	20° 7	21° 3	21° 3	21° 3	7
8	29° 6	29° 6	29° 9	30° 2	30° 1	30° 8	30° 7	31° 5	31° 0	32° 2	31° 0	30° 4	30° 9	31° 2	8
9	30° 7	31° 0	32° 2	31° 7	31° 6	33° 0	33° 5	32° 7	33° 2	34° 1	34° 0	33° 4	33° 0	33° 9	9
10	30° 4	31° 5	31° 0	29° 4	28° 7	30° 0	31° 6	32° 7	30° 7	31° 3	30° 8	30° 8	30° 8	30° 8	10
11	33° 7	32° 6	32° 3	33° 0	34° 0	35° 0	37° 0	37° 5	37° 4	37° 4	36° 9	35° 0	35° 3	35° 3	11
12	32° 3	32° 4	31° 5	31° 3	31° 6	31° 9	31° 0	32° 4	32° 9	33° 6	35° 6	36° 7	36° 9	36° 9	12
13	40° 4	38° 4	42° 3	41° 9	37° 9	36° 2	35° 7	36° 5	37° 0	37° 7	37° 3	37° 4	37° 4	37° 4	13
14	36° 6	36° 0	35° 7	35° 9	35° 6	35° 4	35° 2	34° 7	34° 3	34° 7	34° 6	35° 4	35° 4	35° 4	14
15	40° 0	39° 3	43° 4	42° 2	42° 4	40° 6	39° 1	39° 1	38° 7	38° 4	39° 3	39° 6	39° 2	39° 5	15
16	33° 9	33° 4	33° 7	34° 4	34° 4	33° 0	32° 9	32° 2	33° 6	35° 5	35° 3	34° 8	34° 8	34° 8	16
17	33° 5	33° 4	33° 6	33° 4	33° 6	33° 2	33° 8	32° 0	32° 5	33° 6	33° 0	33° 0	33° 0	33° 0	17
18	26° 1	25° 3	24° 7	23° 5	24° 1	23° 0	24° 5	25° 0	25° 1	27° 4	29° 7	31° 0	32° 1	32° 1	18
19	22° 4	23° 0	25° 3	25° 7	26° 3	27° 7	29° 0	30° 3	32° 1	33° 3	34° 0	35° 6	34° 0	34° 0	19
20	28° 7	27° 7	28° 0	28° 6	27° 0	29° 7	32° 0	31° 7	32° 9	34° 1	35° 6	38° 4	37° 7	37° 7	20
21	36° 7	37° 0	36° 5	36° 1	37° 2	38° 0	38° 2	38° 4	38° 4	38° 6	37° 6	37° 3	37° 0	37° 0	21
22	35° 0	35° 0	36° 1	35° 0	35° 5	35° 6	37° 3	37° 1	35° 0	37° 7	38° 9	38° 7	38° 6	38° 7	22
23	35° 3	35° 6	38° 2	38° 0	36° 4	38° 9	39° 1	39° 4	38° 0	37° 1	36° 3	36° 4	36° 7	36° 7	23
24	36° 6	37° 1	37° 3	37° 0	37° 6	36° 4	35° 5	35° 0	36° 6	36° 3	35° 9	35° 6	36° 3	36° 3	24
25	35° 6	34° 7	36° 5	37° 6	37° 1	37° 3	37° 3	37° 0	37° 0	37° 5	37° 7	37° 7	37° 7	37° 7	25
26	38° 7	38° 4	38° 3	38° 7	38° 0	37° 7	38° 7	39° 0	38° 6	38° 7	38° 7	38° 7	38° 7	38° 7	26
27	40° 2	40° 0	39° 9	40° 0	39° 5	40° 5	40° 7	40° 8	41° 0	40° 7	40° 6	40° 6	40° 6	40° 6	27
28	38° 1	38° 3	37° 3	36° 7	37° 8	38° 9	38° 1	38° 7	38° 5	38° 6	39° 3	39° 6	39° 1	39° 1	28
29	38° 3	38° 5	39° 1	39° 0	38° 7	38° 8	39° 1	39° 0	39° 6	39° 3	39° 8	39° 7	39° 1	39° 1	29
30	35° 7	34° 9	34° 1	33° 1	32° 7	32° 6	33° 6	34° 1	34° 9	35° 0	35° 6	36° 8	37° 0	37° 0	30
31	32° 0	31° 4	31° 1	31° 5	31° 0	30° 7	31° 7	32° 2	32° 1	32° 5	33° 2	33° 2	34° 1	34° 1	31

## WET-BULB THERMOMETER

Days.	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	2 p.m.	Days.
1	44° 1	45° 3	45° 8	45° 2	45° 1	44° 8	44° 4	45° 1	47° 8	49° 0	49° 4	50° 4	50° 8	50° 8	1
2	42° 8	42° 2	41° 5	40° 1	40° 3	39° 6	38° 8	39° 2	39° 8	39° 7	40° 1	39° 5	39° 2	39° 2	2
3	33° 9	34° 2	35° 0	35° 3	36° 8	38° 0	38° 5	39° 1	40° 0	41° 5	42° 2	45° 7	47° 1	47° 1	3
4	33° 8	34° 1	33° 7	33° 5	33° 2	31° 9	32° 4	32° 7	33° 5	34° 0	34° 5	34° 8	34° 8	34° 8	4
5	29° 4	28° 8	29° 7	29° 3	30° 5	32° 9	32° 5	32° 0	32° 6	32° 5	32° 9	32° 3	32° 3	32° 3	5
6	27° 8	26° 9	26° 8	28° 2	27° 7	24° 9	26° 8	27° 4	27° 8	28° 4	28° 3	28° 3	28° 3	28° 3	6
7	23° 1	22° 0	20° 3	19° 7	18° 8	18° 4	18° 8	23° 3	26° 2	26° 8	27° 5	28° 6	28° 6	28° 6	7
8	26° 6	26° 7	27° 3	27° 8	28° 4	29° 0	29° 5	30° 2	30° 8	29° 5	29° 8	29° 7	29° 7	29° 7	8
9	29° 8	30° 2	30° 7	30° 5	31° 3	31° 5	31° 8	31° 8	32° 4	32° 0	31° 1	30° 4	30° 4	30° 4	9
10	28° 5	29° 1	28° 8	27° 6	26° 8	26° 8	26° 8	26° 6	29° 5	29° 8	29° 8	29° 2	29° 2	29° 2	10
11	33° 1	32° 1	32° 7	32° 4	33° 3	35° 8	36° 2	35° 0	33° 4	33° 1	32° 3	32° 3	32° 3	32° 3	11
12	30° 1	30° 2	29° 7												

## BERDEEN OBSERVATORY -

## VAPOUR TENSION -

Days.	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	Days.
1	in. 266	in. 271	in. 281	in. 274	in. 273	in. 275	in. 273	in. 279	in. 277	in. 289	in. 302	in. 308	in. 311	1
2	'224	'218	'213	'197	'208	'230	'226	'217	'227	'228	'227	'214	'207	2
3	'162	'167	'176	'178	'195	'200	'215	'210	'217	'229	'245	'255	'283	3
4	'155	'153	'145	'157	'152	'151	'147	'146	'146	'152	'156	'154	'160	4
5	'137	'124	'130	'129	'142	'162	'160	'160	'164	'177	'159	'179	'159	5
6	'122	'114	'116	'117	'123	'108	'089	'102	'098	'113	'124	'105	'116	6
7	'077	'072	'065	'062	'061	'050	'055	'051	'064	'082	'084	'089	'099	7
8	'093	'095	'103	'110	'125	'130	'143	'147	'153	'151	'138	'155	'146	8
9	'149	'153	'149	'149	'153	'153	'157	'158	'159	'161	'168	'136	'146	9
10	'124	'125	'123	'115	'111	'107	'108	'118	'124	'141	'140	'141	'133	10
11	'182	'175	'177	'175	'183	'190	'196	'199	'189	'178	'152	'149	'166	11
12	'137	'138	'137	'128	'135	'137	'144	'188	'183	'159	'168	'172	'182	12
13	'177	'184	'207	'210	'200	'189	'185	'177	'167	'167	'168	'162	'176	13
14	'148	'156	'154	'146	'140	'142	'140	'152	'149	'140	'142	'138	'155	14
15	'228	'221	'207	'197	'189	'187	'184	'178	'177	'174	'180	'184	'158	15
16	'161	'159	'152	'148	'146	'149	'153	'154	'153	'155	'150	'140	'142	16
17	'153	'145	'142	'136	'140	'133	'117	'108	'109	'103	'123	'139	'142	17
18	'105	'107	'103	'103	'092	'092	'087	'084	'082	'085	'088	'097	'109	18
19	'058	'051	'056	'062	'061	'068	'078	'092	'098	'115	'125	'136	'155	19
20	'140	'136	'131	'134	'124	'134	'141	'162	'160	'160	'163	'170	'184	20
21	'175	'175	'186	'188	'187	'170	'163	'166	'165	'170	'175	'169	'174	21
22	'182	'180	'183	'186	'193	'193	'195	'192	'195	'193	'175	'172	'160	22
23	'183	'188	'166	'178	'191	'185	'189	'190	'199	'201	'194	'193	'193	23
24	'186	'185	'193	'191	'184	'186	'187	'192	'189	'188	'186	'185	'187	24
25	'175	'170	'168	'167	'166	'159	'155	'143	'148	'157	'163	'155	'164	25
26	'193	'195	'191	'189	'194	'185	'179	'174	'189	'194	'193	'190	'191	26
27	'215	'215	'208	'200	'211	'219	'225	'227	'226	'227	'225	'219	'214	27
28	'207	'201	'201	'198	'201	'212	'208	'205	'212	'211	'206	'197	'205	28
29	'201	'206	'211	'212	'212	'211	'209	'210	'207	'203	'204	'205	'205	29
30	'180	'181	'165	'143	'141	'148	'155	'157	'153	'157	'154	'175	'176	30
31	'122	'118	'116	'123	'125	'122	'140	'145	'154	'147	'138	'131	'127	31

## RAINFALL

## RAINFALL

\* Rain and melted snow measured at 10 a.m.

LAT.  $57^{\circ} 10' N.$  LONG.  $2^{\circ} 6' W.$

in inches of Mercury.

IN HEIGHTS OF MERCURY.													
Days.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.	9 p.m.	10 p.m.	11 p.m.	Midt.	Means.	Days.
1	in. 318	in. 312	in. 304	in. 304	in. 294	in. 292	in. 290	in. 283	in. 273	in. 255	in. 239		1
2	*197	*197	*181	*173	*175	*175	*174	*172	*169	*164	*166		2
3	*293	*295	*297	*283	*225	*185	*183	*166	*158	*153	*151		3
4	*168	*166	*167	*153	*145	*149	*145	*142	*141	*140	*131		4
5	*466	*456	*128	*109	*118	*119	*126	*135	*148	*148	*154		5
6	*119	*110	*109	*102	*115	*120	*110	*114	*100	*086	*075		6
7	*117	*131	*132	*135	*138	*151	*159	*183	*170	*181	*107		7
8	*140	*157	*149	*153	*145	*129	*124	*124	*140	*141	*142		8
9	*137	*142	*143	*144	*153	*143	*135	*138	*133	*124	*125		9
10	*134	*136	*143	*145	*150	*160	*102	*168	*169	*172	*176		10
11	*151	*443	*136	*158	*148	*139	*122	*110	*126	*118	*128		11
12	*187	*204	*222	*212	*209	*198	*194	*184	*174	*174	*181		12
13	*175	*185	*190	*190	*189	*187	*177	*171	*179	*156	*164		13
14	*152	*152	*154	*165	*176	*183	*191	*194	*204	*229	*224		14
15	*159	*151	*150	*145	*148	*149	*159	*171	*158	*159	*164		15
16	*443	*153	*462	*471	*176	*188	*189	*173	*145	*149	*157		16
17	*440	*445	*441	*141	*130	*129	*128	*123	*120	*120	*112		17
18	*115	*110	*102	*092	*084	*075	*066	*061	*061	*051	*050		18
19	*446	*437	*431	*156	*142	*137	*144	*172	*176	*176	*154		19
20	*173	*185	*191	*191	*191	*191	*194	*194	*189	*181	*179		20
21	*182	*181	*182	*182	*181	*180	*186	*178	*182	*181	*177		21
22	*156	*157	*150	*172	*168	*169	*165	*181	*178	*176	*181		22
23	*189	*178	*175	*176	*179	*167	*179	*192	*177	*171	*188		23
24	*192	*186	*192	*190	*180	*177	*193	*192	*189	*185	*171		24
25	*166	*771	*167	*174	*175	*167	*180	*168	*171	*176	*181		25
26	*194	*195	*199	*198	*206	*199	*202	*203	*200	*210	*217		26
27	*214	*211	*203	*199	*206	*200	*210	*208	*203	*208	*203		27
28	*213	*205	*208	*209	*210	*203	*208	*209	*205	*207	*200		28
29	*202	*208	*201	*201	*197	*201	*201	*195	*188	*190	*191		29
30	*175	*181	*185	*180	*178	*171	*161	*160	*143	*126	*120		30
31	*118	*118	*117	*120	*113	*119	*116	*113	*117	*115	*112		31

5-174

Rain-gauge 2 feet above ground; 48 feet above Mean Sea Level.

Official No. 94.

14297-9  
8c

# HOURLY MEANS

OF THE

13 MAY 1891

READINGS OBTAINED FROM THE SELF-RECORDING INSTRUMENTS

AT THE

FOUR OBSERVATORIES UNDER THE METEOROLOGICAL COUNCIL.

1887.

Published by the Authority of the Meteorological Council.



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## INTRODUCTION.

The Meteorological Council, after careful consideration of the form in which the publication of the records of the self-registering instruments at the Observatories maintained by the Office has hitherto taken place, have come to the conclusion that it is preferable, for a time at least, to publish mean values instead of the separate hourly values for each day, which have till now been printed *in extenso*.

The series of hourly values for every day of the year has now appeared for the years 1874 to 1883 inclusive, for each of the seven Observatories in operation during those years, viz., Valencia, Armagh, Glasgow, Aberdeen, Falmouth, Stonyhurst, and Kew; and also for the years 1884 to 1886 inclusive for the four Observatories which have continued under the direction of the Office, viz., Valencia, Aberdeen, Falmouth, and Kew.

Hitherto the Office has not undertaken the publication of any mean hourly values, and on reconsideration of the subject generally, it has appeared to the Council that hourly means suitably grouped would supply the data obtained from the self-registering instruments in the most convenient form for discussion, and that, provided the means were computed for sufficiently short intervals of time, these would be found to be more generally useful than the hourly readings themselves, any attempt to deal with which is rendered very difficult by their excessive number, so that in making use of them for almost any purpose the computation of mean values of some kind is a preliminary step which is essential.

It is believed that the arrangement of the means adopted in the tables now published will admit of their being readily combined, or otherwise modified, by those who may wish to obtain mean values for other periods than those given; while should the occasion arise in which the hourly readings *in extenso* are needed for any research the original records will be available in the Meteorological Office.

The new form of publication has been adopted for the year 1887, and will be continued for subsequent years, but the Council have under consideration the extension of the calculation of mean values, such as those now published, at least of pressure and air temperature, as far back as possible, that is, to 1869, the first year in which the self-recording registers are complete.

The Council also contemplate the computation and publication of the harmonic coefficients of the pressure and temperature curves for the same series of years, but the form and extent of such a publication is not yet settled.

The elements dealt with in the tables are—

- a. Barometrical pressure.
- b. Temperature of the air.
- c. Difference between the dry and wet-bulb thermometers.
- d. Direction and velocity of the wind.
- e. Rainfall.

For the first four of these elements hourly means, and for the last element hourly totals, are given for periods of five days, for the calendar months, and for the year; while

means of pressure and temperature, and totals of rainfall, are also given for every day of the year.

It will be observed that the tables of pressure and temperature supply for each day hourly values for the initial and final midnights.

Assuming, as may be done, that the mean value for any hour is the mean between the values at the commencement and end of that hour, it follows that the true mean of the 24 hourly means will be found by adding half the sum of the initial and final midnights to the rest of the hourly values, and dividing by 24.

Again, to ascertain the true hourly variations from the true mean of the day, account must be taken of the change of value between the initial and final midnights, which may be termed, so far as the hourly variations are concerned, the non-periodic variation.

It will be apparent that in order to eliminate the effect of these non-periodic fluctuations corrections must be applied to the observed hourly values, as follows:—

Calling the difference between the means of the initial and final midnight, that is 0 hours and 24 hours,  $d$ , the correction for the several hours will be—

MIDT.	A.M.	NOON.	P.M.	MIDT.
for 0 hrs.	1 2	- 12	- 22, 23, 24.	
$\frac{1}{24}d, \frac{1}{12}d, \frac{1}{24}d$		- 0	- $\frac{1}{24}d, \frac{1}{12}d, \frac{1}{24}d$	

the correction being added to the A.M. and subtracted from the P.M. means according as the initial (0 hours) mean value is less or greater than the final (24 hours) mean.

There has been no change in the instruments used for obtaining the records, which are described in the Annual Reports of the Meteorological Office for the years 1867 and 1869; while particulars as to their exposure and as to the physical features of the district surrounding the Observatories will be found in the Quarterly Weather Report for 1870, and in a note in the volume of Hourly Readings for 1885. A description of the methods adopted to secure correct measurements from the photographic or other traces, which, although varied in some details, are still unaltered as regards their general principle, will also be found in the Reports of the Meteorological Office for 1868 and 1869.

Before the means were calculated from the measurements all breaks in the hourly readings were supplied by interpolations, in making which any data in the Office available for the purpose have been used. Such breaks are rare, but occur at times from failure of the photography or from stoppage of the clocks, but the temperature of the wet bulb is that most frequently lost, owing to frost. Such losses can, however, usually be made good with a very near approach to accuracy.

The tables are 12 in number for each Observatory, as follows:—

TABLE I.—Gives for five-day periods the mean pressure for each hour of the day, and also for the whole 24 hours. This, and some of the succeeding tables, is in two parts, the means for the first six months (36 five-day groups) forming the first part, and those for the second six months (37 five-day groups) the second part. The extra day in leap year is always reckoned in the twelfth of the five-day groups, which in those years gives the mean of six days instead of five. No correction has been applied to the barometer readings for height above mean sea-level, but they have been reduced to  $32^{\circ}$  Fahrenheit.

TABLE II.—Gives the mean temperature of the air for each hour of the day and for the whole 24 hours for 73 groups of five days.

TABLE III.—Gives for the five-day periods the hourly and daily mean difference between the dry and wet-bulb thermometers. Opinion being unsettled as to the best method of computing the tension of vapour or humidity from these observations, the depression of the wet bulb alone has been given.

TABLE IV.—Gives the mean hourly and daily wind components for the same five-day periods. The observed directions and magnitudes are resolved into two components, for those in the direction of the meridian North being regarded as positive and South as negative; and for those in the direction perpendicular to the meridian, East being positive and West negative. The means are obtained from the algebraic sum of the several components for the periods in question.

TABLE V.—Deals with the frequency and amount of rainfall for the five-day and other periods as before. The first column under each hour shows the number of times at which rain fell in the 60 minutes immediately preceding that hour, while the second column gives the aggregate quantity of rain measured at the hour. The final two columns give the number of days on which rain to the amount of at least a hundredth of an inch fell, and the total fall for each period of five days. It sometimes happens, generally with falls of snow, but occasionally, although only rarely, through stoppage of the clock, that the trace fails, and it then becomes impossible to allocate the rainfall accurately to the proper hours. In such cases no note has been put to the figures in the hourly columns, but the amounts of rain measured at such times have been added to the hourly amounts given, and therefore the correct quantity is shown in the daily totals.

TABLES VI., VII., and VIII.—Give respectively the hourly and daily means of pressure, temperature, and of the difference between the dry and wet bulb thermometers, for each calendar month and for the whole year.

TABLE IX.—Gives the mean hourly and daily wind components for each calendar month, and for the year.

TABLE X.—Exhibits the hourly frequency and total amount of rainfall for each month and for the year; and also the number of days on which at least 0.1 inch of rain fell, and total amount of rain measured, in each month and during the whole year.

TABLE XI.—Shows the number of times the wind blew from each of the eight octants, reckoned on either side of the points North, North-east, &c., together with the number of calms for each hour of the day; the mean velocity being shown in the second column for every hour, while the average velocity at each hour, irrespective of direction, is given at the foot of the column. The three final columns give similar information for the month, and the maximum velocity during the month from each octant. In preparing this Table, and also Table IV., an observation has been reckoned as a calm when the motion of the wind was less than five miles in the hour.

TABLE XII.—Gives the mean pressure, mean air temperature, and mean difference between the dry and wet bulb thermometers for every day of the year; together with the daily extremes of pressure and temperature, the daily fall of rain, and the maximum hourly fall of rain in each month of the year.

## HOURLY MEANS

OF THE



READINGS OBTAINED FROM THE SELF-RECORDING INSTRUMENTS

AT THE

FIVE OBSERVATORIES UNDER THE METEOROLOGICAL COUNCIL,

1891.

Published by the Authority of the Meteorological Council.



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### ERRATA FOR HOURLY MEANS, 1889.

Page 17. VALENCIA.—Pressure, April, 20 hours, for "29.730" read "29.750," and mean for the year at that hour, for "29.965" read "29.967" inches.

Page 101. KEW.—Temperature, June, 23 hours, for "57°.6" read "57°.3."

### ERRATA FOR APPENDIX TO HOURLY MEANS, 1891.

Page [5]. August 1 p.m., mean daily amount, 10 years, for "0.41" read "0.47."

Page [26]. July 6 p.m., mean daily amount, 10 years, for "0.23" read "0.33."

Page [38]. March 3 p.m., mean daily amount, 10 years, for "0.32" read "0.33."

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Aberdeen "	-	-	-	100
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[1]

## INTRODUCTION.

THE ELEMENTS DEALT WITH IN THE FOLLOWING TABLES ARE—

- a. Barometrical pressure.
- b. Temperature of the air.
- c. Difference between the dry and wet-bulb thermometers.
- d. Direction and velocity of the wind.
- e. Rainfall.
- f. Sunshine.

FOR THE FIRST FOUR OF THESE ELEMENTS HOURLY MEANS, AND FOR RAINFALL HOURLY TOTALS, ARE GIVEN FOR PERIODS OF FIVE DAYS, FOR THE CALENDAR MONTHS, AND FOR THE YEAR; WHILE MEANS OF PRESSURE AND TEMPERATURE, AND TOTALS OF RAINFALL, ARE ALSO GIVEN FOR EVERY DAY OF THE YEAR. FOR SUNSHINE HOURLY TOTALS ARE GIVEN FOR THE CALENDAR MONTHS AND FOR THE YEAR.

THE OBSERVATIONS AT ALL THE OBSERVATORIES ARE REFERRED TO GREENWICH MEAN TIME, EXCEPT IN THE CASE OF SUNSHINE, WHEN LOCAL APPARENT TIME IS USED.

IT WILL BE OBSERVED THAT THE TABLES OF PRESSURE AND TEMPERATURE SUPPLY FOR EACH PERIOD HOURLY MEAN VALUES FOR THE INITIAL AND FINAL MIDNIGHTS.

ASSUMING, AS MAY BE DONE, THAT THE MEAN VALUE FOR ANY HOUR IS THE MEAN BETWEEN THE VALUES AT THE COMMENCEMENT AND END OF THAT HOUR, IT FOLLOWS THAT THE TRUE MEAN OF THE 24 HOURLY MEANS WILL BE FOUND BY ADDING HALF THE SUM OF THE INITIAL AND THE FINAL MIDNIGHTS TO THE REST OF THE HOURLY VALUES, AND DIVIDING BY 24.

AGAIN, TO ASCERTAIN THE TRUE HOURLY VARIATIONS FROM THE TRUE MEAN OF THE DAY, ACCOUNT MUST BE TAKEN OF THE CHANGE OF VALUE BETWEEN THE INITIAL AND FINAL MIDNIGHTS, WHICH MAY BE TERMED, SO FAR AS THE HOURLY VARIATIONS ARE CONCERNED, THE NON-PERIODIC VARIATION.

IT WILL BE APPARENT THAT IN ORDER TO ELIMINATE THE EFFECT OF THESE NON-PERIODIC FLUCTUATIONS CORRECTIONS MUST BE APPLIED TO THE MEAN HOURLY VALUES, AS FOLLOWS:—

CALLING THE DIFFERENCE BETWEEN THE MEANS OF THE INITIAL AND FINAL MIDNIGHT, THAT IS OF 0 HOURS AND 24 HOURS,  $d$ , THE CORRECTION FOR THE SEVERAL HOURS WILL BE—

MIDN.	A.M.	NOON.	P.M.	MIDN.
for 0 hrs. 1, $\frac{1}{2}$	-	-	-	22, 23, 24
$\frac{1}{2}d$ , $\frac{1}{2}d$ , $\frac{1}{2}d$	-	-	-	$\frac{1}{2}d$ , $\frac{1}{2}d$ , $\frac{1}{2}d$

THE CORRECTION BEING ADDED TO THE A.M. AND SUBTRACTED FROM THE P.M. MEANS IF THE INITIAL (0 HOURS) MEAN VALUE IS LESS THAN THE FINAL (24 HOURS) MEAN, BUT SUBTRACTED FROM THE A.M. AND ADDED TO THE P.M. MEANS IF THE INITIAL MEAN VALUE IS GREATER THAN THE FINAL MEAN.

THE INSTRUMENTS USED FOR OBTAINING THE RECORDS ARE DESCRIBED IN THE REPORTS OF THE METEOROLOGICAL OFFICE FOR THE YEARS 1867 AND 1869; WHILE PARTICULARS AS TO THEIR EXPOSURE AND AS TO THE PHYSICAL FEATURES OF THE DISTRICTS SURROUNDING THE OBSERVATORIES, OTHER THAN FORT WILLIAM, WILL BE FOUND IN THE QUARTERLY WEATHER REPORT FOR 1870, AND IN A NOTE IN THE VOLUME OF HOURLY READINGS FOR 1885. A SIMILAR DESCRIPTION FOR FORT WILLIAM OBSERVATORY, THE OBSERVATIONS FOR WHICH ARE PUBLISHED FOR THE FIRST TIME IN THE PRESENT VOLUME, WILL BE FOUND ON P. x. A DESCRIPTION OF THE METHODS ADOPTED TO SECURE CORRECT MEASUREMENTS FROM

the photographic or other traces, which, although varied in some details, are still unaltered as regards their general principle, will also be found in the Reports of the Meteorological Office for 1868 and 1869.

Before the means were calculated from the measurements all breaks in the hourly readings were supplied by interpolations, in making which any data in the Office available for the purpose have been used. Such breaks are rare, but occur at times from failure of the photography or from stoppage of the clock, but the temperature of the wet bulb is that most frequently lost, owing to frost. Such losses can, however, usually be made good with a very near approach to accuracy.

In every case the barometer readings have been reduced to  $32^{\circ}$  Fahrenheit, but no correction has been applied for the height of the barometer above mean sea-level. The height of the barometer above mean sea-level is given in the case of each Observatory at the head of Table I. and Table VI.

The tables are 13 in number for each Observatory except Fort William, for which Observatory it will be found that the wind tables are omitted. The position of Fort William being such as to render it unsuitable for the purpose of wind observations, an anemometer was not included in the outfit of the Observatory.

The tables are as follows :—

TABLE I.—Gives for five-day periods the mean pressure for each hour of the day, and also for the whole 24 hours. This, and some of the succeeding tables, is in two parts, the means for the first six months (36 five-day groups) forming the first part, and those for the second six months (37 five-day groups) the second part. The extra day in leap year is always reckoned in the twelfth of the five-day groups, which in those years gives the mean of six days instead of five.

TABLE II.—Gives the mean temperature of the air for each hour of the day and for the whole 24 hours for 73 groups of five days.

TABLE III.—Gives for the five-day periods the hourly and daily mean difference between the dry and wet-bulb thermometers. Opinion being unsettled as to the best method of computing the tension of vapour or humidity from these observations, the mean difference of the two thermometers alone has been given.

TABLE IV.—Gives the mean hourly and daily wind components for the same five day periods. The observed directions and magnitudes are resolved into two components, for those in the direction of the meridian North being regarded as positive and of South as negative; and for those in the direction perpendicular to the meridian, East being positive and West negative. The means are obtained from the algebraic sum of the several components for the periods in question.

TABLE V.—Deals with the frequency and amount of rainfall for the five-day and other periods as before. The first column under each hour shows the number of times at which rain fell in the 60 minutes immediately preceding that hour, while the second column gives the aggregate quantity of rain measured at the hour. The final two columns give the number of days on which rain to the

amount of at least a hundredth of an inch fell, and the total fall for each period of five days. It sometimes happens, generally with falls of snow, but occasionally, although only rarely, through stoppage of the clock, that the trace fails, and it then becomes impossible to allocate the rainfall accurately to the proper hours. In such cases no note has been put to the figures in the hourly columns, but the amounts of rain measured at such times have been added to the hourly amounts given, and therefore the correct quantity is shown in the daily totals.

TABLE VI.—Gives the hourly and daily means of pressure for each calendar month and for the whole year.

TABLE VII.—Gives the hourly and daily means of temperature and also the means of the daily maxima and minima for each calendar month and for the whole year.

TABLE VIII.—Gives the hourly and daily mean difference between the dry and wet-bulb thermometers for each calendar month and for the whole year.

TABLE IX.—Gives the mean hourly and daily wind components for each calendar month and for the year.

TABLE X.—Exhibits the hourly frequency and total amount of rainfall for each month and for the year; and also the number of days on which at least  $0 \cdot 01$  inch of rain fell, and the total amount of rain measured, in each month and during the whole year.

TABLE XI.—Shows the number of times the wind blew from each of the eight octants, reckoned on either side of the points North, North-east, &c., together with the number of calms for each hour of the day; the mean velocity being shown in the second column for every hour, while the average velocity at each hour, irrespective of direction, is given at the foot of the column. The three final columns give similar information for the month, and the maximum velocity during the month from each octant. In preparing this Table, and also Table IV., an observation has been reckoned as a calm when the motion of the wind was less than five miles in the hour.

TABLE XII.—Gives the mean pressure, mean air temperature, and mean difference between the dry and wet-bulb thermometers for every day in the year; together with the daily extremes of pressure and temperature, the daily fall of rain, and the maximum hourly fall of rain in each month of the year.

TABLE XIII.—Shows for each hour, from sunrise to sunset, the number of days on which bright sunshine was recorded, and the total duration of the record, for each calendar month and for the year. Also the number of days in each calendar month and in the year during any part of which the sun shone; and the per-centaged recorded of the greatest possible duration.