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THE

DIURNAL RANGE OF RAIN,

AT THE

SEVEN OBSERVATORIES

IN CONNECTION WITH THE

METEOROLOGICAL OFFICE,

1871—1890.

BY

ROBERT H. SCOTT, D.Sc., F.R.S.

*Secretary to the Meteorological Council.*



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A discussion of the diurnal march of the fall of rain, from the ten years 1871-80, was published in 1885, as Appendix II. to the "Quarterly Weather Report" for 1877. The expiration of another decade has rendered it desirable to ascertain if any features of periodicity, which had not come out in the interval of ten years, would show themselves when that interval was doubled.

The portion of the work first published had been, in great measure, executed by the late Mr. Lovel Squire, of Falmouth Observatory, as explained in the paper to which allusion has been made. Careful subsequent examination however showed that abnormal causes tended to disturb the curves, and these were finally proved to be traceable to imperfect action of the recording arrangements.

The pencil trace, when the paper is taken off in the morning, is sometimes found to be a shade below the zero line. This want of parallelism between the lines may be due to either of two causes—(1) The gradual accumulation of moisture, from dew, in the receiver; or (2), imperfect fastening of the paper on the drum. It is entered by the tabulator as, say, 0·01 inch at 10 h. a.m.

This practice produced an impossible maximum of frequency, at that particular hour, at one observatory. The method followed in dealing with this matter has been to examine the weather record carefully for each day on which a small amount was entered at 10 h. a.m. and at that hour only. If it appeared that no condensation was likely to have occurred, the entry was rejected, as being due to imperfect action of the gauge.

Another matter has been the frequent entry, especially in the earlier years, of quantities of 0·001 or 0·002 inch, in the tabulations. The trace was made by a lead pencil, and is therefore a line, of appreciable breadth, while the vertical scale is very contracted, a depth of 0·7 inch corresponding to 0·2 inch of rain.

It has therefore seemed advisable to consider the entries of such very minute quantities as, more or less, untrustworthy, and the practice followed in this paper has been to retain the amount, on taking out the monthly total of quantity for the hour,



The subjoined table (I) gives the actual number of days ignored in each month for the whole period. In the first decade 1871-80 Falmouth was the only station at which not a single month had been lost, owing to the application of the seven day rule just stated. In the second decade Valencia and Stonyhurst exhibit an unbroken record, while Falmouth and Glasgow have lost only one month each. Aberdeen is in the worst position of all, owing to the greater prevalence of snow in the North of Scotland than elsewhere.

Showing the NUMBER of DAYS in each MONTH of which the RECORDS are DEFICIENT in the interval of TWENTY YEARS, 1871-90.

TABLE I.—*continued.*

SHOWING the NUMBER of DAYS in each MONTH of which the RECORDS are DEFICIENT in the interval of TWENTY YEARS, 1871-90—*continued.*

[illegible]



TABLE I.—*continued.*

SHOWING the NUMBER of DAYS in each MONTH of which the RECORDS are DEFICIENT in the interval of TWENTY YEARS, 1871-90—*continued.*

Year.	Valencia.	Armagh.	Glasgow.	Aberdeen.	Falmouth.	Stonyhurst.	Kew.	Valencia.	Armagh.	Glasgow.	Aberdeen.	Falmouth.	Stonyhurst.	Kew.
JULY.							AUGUST.							
1871	...	...	I	...	I	...	2	...	...	...	...	...	...	...
1872	...	...	...	...	...	...	I	I	...	...	...	2	...	I
1873	...	I	3I	...	...	...	...	...	...	...	...	...	...	...
1874	...	...	...	I	I	...	...	I	...	...	...	...	I	...
1875	...	...	...	...	I	I	...	I	...	...	...	...	...	...
1876	I	I	...	...	I	...	...	I	I	...	...	I	I	...
1877	...	I	...	...	...	...	...	...	...	...	...	I	I	...
1878	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1879	...	I	...	I	I	...	...	I	I	...	...	I	...	...
1880	I	I	...	...	...	I	2	...	...	...	...	...	I	...
1881	2	I	...	...	...	I	...	...	...	...	...	...	...	...
1882	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1883	...	...	...	...	I	I	...	2	I	...	...	...	I	...
1884	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1885	...	...	I	I	...	...	...	I	...	...	...	I	...	...
1886	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1887	...	...	...	...	...	...	...	I	...	...	...	...	...	...
1888	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1889	...	3	...	...	...	...	...	...	...	...	...	...	...	...
1890	...	...	...	...	...	...	...	...	3I	...	...	2	...	...
SEPTEMBER.							OCTOBER.							
1871	I	I	...	...	...	...	I	I	...	...	...	...	...	...
1872	...	I	30	...	3	...	I	...	...	...	...	2	I	...
1873	I	...	...	...	...	...	...	...	...	...	...	...	...	...
1874	...	2	...	...	...	...	...	...	I	...	...	I	...	...
1875	I	...	...	...	2	I	...	...	I	...	...	...	...	...
1876	...	I	...	...	...	...	...	...	...	...	...	...	...	...
1877	...	I	...	...	2	...	...	...	...	...	...	I	3	...
1878	...	...	...	...	3	I	...	I	...	...	...	I	I	...
1879	I	...	...	...	...	...	...	...	...	...	...	...	...	...
1880	I	...	...	I	...	...	...	I	6	...	...	I	2	...
1881	...	...	...	...	...	...	...	...	...	6	...	I	...	...
1882	...	...	...	...	...	...	...	...	...	...	...	...	I	...
1883	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1884	...	...	...	...	...	...	...	...	...	...	...	...	2	...
1885	...	...	2	...	...	...	...	...	...	...	...	...	...	...
1886	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1887	...	...	I	...	...	...	...	...	...	...	...	...	...	...
1888	...	...	...	...	...	...	...	...	...	2	...	...	I	...
1889	...	...	...	...	...	...	...	...	I	...	...	...	...	...
1890	...	...	...	...	...	...	...	I	...	2	...	...	I	...

TABLE I.—*continued.*

SHOWING the NUMBER of DAYS in each MONTH of which the RECORDS are DEFICIENT in the interval of TWENTY YEARS, 1871-90—*continued.*

Year.	Valencia.	Armagh.	Glasgow.	Aberdeen.	Falmouth.	Stonyhurst.	Kew.	Valencia.	Armagh.	Glasgow.	Aberdeen.	Falmouth.	Stonyhurst.	Kew.
NOVEMBER.							DECEMBER.							
1871	...	...	I	I	...	...	...	I	...	I	I	...	...	...
1872	...	...	...	...	...	2	I	...	...	...	2	I	2	...
1873	I	...	I	I	...	...	I	...	...	...	...	I	...	...
1874	2	...	2	2	...	4	...	...	I	...	3I	...	6	4
1875	I	...	I	...	...	3	...	...	...	2	2	...	3I	6
1876	...	30	2	3	...	...	I	I	3I	I	4	...	...	I
1877	...	I	I	...	...	...	...	...	...	I	I	2	...	...
1878	...	4	...	I	...	3	...	2	3I	4	3I	3	3I	3I
1879	...	I	...	4	I	I	I	...	2	I	5	...	3	3
1880	I	I	5	5	...	2	I	...	4	4	3I	...	5	I
1881	I	...	...	...	I	...	...	...	2	...	I	I	I	I
1882	...	...	...	2	...	...	...	...	2	...	3I	...	2	I
1883	I	I	...	I	...	...	...	...	...	...	4	...	...	3
1884	...	I	I	I	...	...	...	...	2	3	2	...	I	I
1885	...	...	...	I	2	...	...	...	...	...	3I	...	...	...
1886	...	...	...	I	...	...	...	3	4	I	3I	...	2	3
1887	...	...	I	I	...	...	2	...	I	3	6	I	2	3
1888	...	...	...	...	...	...	2	...	...	1	...	...	...	...
1889	...	I	I	3	...	...	...	...	2	2	2	...	I	2
1890	I	I	2	2	...	I	2	...	2	I	3	...	4	3I

The figures for Quantity and Frequency are given in Tables II. to V.

## QUANTITY.

Table II. gives the actual totals recorded for each hour during the twenty years. Inasmuch, however, as all of the gauges were out of order, owing to various causes, during a portion of this time, the plan has been adopted of reducing all the totals of quantity to the corresponding amounts for the period of twenty full years.

For example, at Valencia the gauge was not in action until April 1871, so that, *e.g.*, in January of that year 31 days were missing. In addition, during the succeeding years eight more days were lost in January, from various causes.

The total loss therefore was 39 days. In twenty years there are 620 days in January, so that the total number of days available for Valencia, for that month, is  $620 - 39 = 581$ .

Now at 1 h. a.m. in January a total quantity of 4.644 inches of rain was collected at Valencia (*see* Table II).

The amount adopted for that hour for the full period is, therefore,  $4.644 \times \frac{620}{581} = 4.956$  inches, and this is the figure appearing in Table III.

The same process has been repeated in each of the other cases. The number of days available in each month is shown in the last column of Table II. for each observatory.

Table III. gives the totals for the full period of twenty years, obtained by the process just described.



## TABLE

TOTAL AMOUNTS for each HOUR of the TWENTY YEARS

## VALENCIA.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Noon.
	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
January ..	4'644	4'211	4'859	4'975	5'512	4'495	5'216	4'873	5'131	5'617	3'992	4'509
February ..	4'567	4'525	4'417	4'061	3'722	3'237	2'897	3'075	2'999	3'309	4'130	3'917
March ..	3'234	3'243	3'956	3'208	3'294	3'679	3'658	3'813	3'421	3'280	2'896	2'713
April ..	3'547	3'261	3'394	3'556	3'485	3'514	3'243	3'150	3'026	2'983	2'752	2'423
May ..	2'766	3'344	3'848	3'776	3'262	3'084	3'109	2'877	3'102	2'890	1'908	2'790
June ..	3'588	3'000	3'674	4'249	4'314	3'652	4'321	3'348	3'347	2'897	2'272	2'200
July ..	3'585	4'447	4'561	4'193	3'819	4'203	4'012	4'285	4'642	3'105	2'522	3'192
August ..	4'248	4'158	3'846	4'752	5'856	5'911	5'457	3'888	3'788	3'920	3'545	3'231
September	3'677	3'750	5'028	4'154	4'780	4'021	4'484	4'097	4'991	3'308	3'116	3'450
October ..	5'198	4'362	4'062	4'495	4'598	4'327	3'827	3'877	3'951	4'171	4'209	4'595
November.	5'472	4'608	4'812	4'615	4'771	4'671	5'381	6'371	4'479	5'584	4'754	4'476
December.	4'049	4'395	4'385	5'526	4'587	4'952	5'435	4'903	4'834	5'392	4'795	4'993
Year ..	48'575	47'204	50'842	51'560	52'000	49'746	51'040	48'557	47'711	46'456	40'891	42'489

## ARMAGH.

	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
January ..	1'747	1'428	2'113	1'641	1'443	2'058	1'645	1'912	1'553	1'761	1'621	1'705
February ..	1'414	1'761	2'068	1'961	2'012	2'015	1'613	1'306	1'199	1'573	1'063	0'965
March ..	1'042	1'096	1'412	1'522	1'247	1'690	1'392	1'549	1'995	2'751	1'671	1'719
April ..	1'359	1'771	2'013	2'289	1'662	1'800	2'014	1'846	1'571	1'697	1'249	1'177
May ..	1'309	1'311	1'848	1'692	2'123	1'549	1'472	1'594	1'103	1'303	2'191	1'787
June ..	1'429	1'748	2'259	1'878	1'847	1'689	1'522	1'826	1'760	1'623	2'113	2'192
July ..	1'955	1'997	2'080	2'136	2'581	2'610	2'296	1'599	1'955	1'961	2'659	3'130
August ..	2'086	2'153	1'624	1'272	1'291	1'770	2'457	1'544	1'885	2'766	2'050	2'289
September	2'155	2'614	3'509	3'311	3'334	2'468	2'197	1'669	2'112	2'351	2'979	2'307
October ..	2'795	3'120	2'763	2'710	2'492	2'090	2'211	1'971	1'654	2'013	1'975	2'035
November.	1'803	2'231	2'349	2'123	2'664	2'228	2'568	2'305	2'381	2'103	2'138	2'827
December.	1'877	1'917	2'161	1'835	1'456	1'534	1'799	1'497	1'599	1'542	1'811	2'039
Year ..	20'971	23'147	26'199	24'370	24'152	23'501	23'186	20'618	20'767	23'444	23'520	24'172

## II.

1871-1890, with the NUMBER of DAYS available in each MONTH.

## VALENCIA.

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Midt.	Days available.
ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	
4'813	5'855	5'163	3'772	3'940	5'134	4'721	5'853	6'371	5'637	4'465	5'266	581
3'085	3'438	3'702	4'067	3'902	3'035	3'409	3'978	4'062	4'177	3'970	4'594	496
3'316	3'090	2'951	2'606	2'428	2'586	2'841	2'927	2'815	2'698	2'358	2'812	554
2'287	2'346	2'079	2'584	2'549	3'026	3'307	3'719	3'581	2'932	3'610	3'102	567
2'286	2'093	2'078	2'017	2'219	1'957	2'231	2'395	1'940	2'568	1'972	2'531	587
2'244	1'838	2'012	2'446	3'134	3'202	2'848	3'244	2'755	2'320	3'312	4'035	594
2'685	3'129	2'937	3'562	3'624	3'487	2'733	2'995	3'532	3'593	3'700	3'502	616
3'215	2'766	3'261	3'145	2'836	4'287	4'616	3'517	3'337	4'161	3'637	4'371	612
2'970	3'644	3'455	3'221	4'537	3'491	3'749	3'943	3'759	3'696	3'685	3'607	595
4'612	3'504	3'981	4'267	4'565	4'793	5'486	5'141	4'602	5'534	5'784	5'461	612
4'615	3'901	5'293	4'125	5'014	4'682	4'571	4'455	4'419	4'505	4'148	4'487	592
4'721	5'147	5'056	4'324	4'483	5'448	4'981	5'537	4'963	4'863	4'228	4'132	611
40'849	40'751	41'968	40'136	43'231	45'128	45'493	47'704	46'136	46'684	44'869	47'900	..

## ARMAGH.

ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	
2'194	1'481	1'301	1'774	1'855	1'556	1'492	1'317	1'738	1'827	2'036	1'861	508
1'347	1'890	1'843	1'882	1'693	2'080	1'810	1'644	1'532	1'712	1'164	1'359	522
1'673	1'679	1'849	2'010	1'895	1'454	1'706	1'636	1'491	1'606	1'500	1'056	574
1'266	1'860	2'487	2'475	2'323	2'038	1'677	1'538	1'545	1'247	1'307	1'167	596
2'334	2'501	1'930	1'813	2'115	2'407	2'281	1'625	1'727	1'580	1'317	1'290	613
2'036	2'658	3'004	3'713	2'761	3'071	2'073	2'424	1'619	1'463	1'551	1'303	596
4'152	3'919	4'461	3'580	3'876	2'927	3'766	3'439	2'630	2'166	2'356	2'036	611
4'113	3'415	3'290	2'442	2'053	2'470	2'240	1'860	2'293	1'693	1'780	2'570	581
2'906	2'331	3'012	2'734	2'547	2'058	2'854	2'283	2'638	3'038	2'807	2'523	594
2'204	2'540	2'427	2'785	2'649	2'236	2'456	2'070	1'871	2'071	2'127	2'216	612
2'252	2'292	2'808	2'635	2'562	2'982	3'304	3'021	2'801	2'895	2'663	2'169	559
1'855	1'930	2'182	1'830	2'215	1'929	1'683	1'821	1'644	1'551	1'720	1'871	535
28'332	28'496	30'594	29'673	28'554	27'208	26'342	24'678	23'529	22'849	22'328	21'421	..



TABLE II.—

TOTAL AMOUNTS for each HOUR of the TWENTY YEARS 1871–1890,

## GLASGOW.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Noon.
	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
January ..	3'073	3'136	2'944	2'851	2'766	3'144	2'774	2'638	2'232	2'808	2'366	2'796
February..	1'875	1'588	1'622	1'886	1'928	2'227	2'417	2'362	2'230	2'256	2'096	1'444
March ..	1'612	1'513	1'833	1'523	1'837	1'811	1'801	1'706	2'132	1'879	1'438	1'812
April ..	1'547	1'927	1'763	1'771	1'572	1'595	1'719	1'418	1'544	1'518	1'186	1'606
May ..	1'990	1'685	1'522	1'551	2'097	2'032	1'966	1'618	1'935	1'674	1'411	1'801
June ..	1'500	2'317	2'327	2'069	1'980	2'312	2'068	1'441	1'499	1'444	1'261	1'968
July ..	3'135	3'119	3'029	2'895	3'962	2'942	2'751	2'781	2'105	2'536	2'518	2'113
August ..	3'010	2'719	3'718	3'490	2'863	3'160	2'925	2'653	2'173	2'354	2'208	3'004
September.	2'474	2'269	3'236	2'593	3'605	2'805	2'719	2'257	2'217	2'282	2'081	2'425
October ..	3'045	3'692	3'531	3'385	3'406	3'209	2'971	2'913	2'607	3'039	2'423	3'375
November.	3'439	3'004	2'441	2'545	2'472	2'669	2'184	2'446	2'674	2'896	2'603	2'632
December.	2'051	2'338	2'068	2'152	2'387	2'210	1'964	2'553	3'078	2'992	1'792	2'066
Year ..	28'571	29'307	30'034	28'711	30'875	30'116	28'259	26'786	26'426	27'678	23'383	27'042

## ABERDEEN.

	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
January ..	0'524	0'900	0'975	1'289	1'147	1'251	1'610	1'432	1'517	1'377	1'250	1'374
February..	1'710	1'599	1'181	0'954	1'236	1'050	0'975	1'010	1'314	1'541	1'054	1'057
March ..	0'835	0'953	0'967	1'240	1'310	1'129	1'015	1'061	1'423	1'480	0'995	0'870
April ..	1'623	1'535	1'668	1'781	2'102	2'204	2'580	2'627	2'217	1'857	1'658	1'478
May ..	1'500	0'962	1'157	1'269	1'561	1'543	1'598	1'330	1'227	0'882	1'175	1'414
June ..	1'164	1'406	1'309	1'593	1'287	1'571	1'617	1'272	1'523	1'648	1'590	1'737
July ..	1'956	2'220	2'041	2'680	2'371	1'963	1'611	2'214	1'791	2'462	2'156	2'763
August ..	3'027	2'281	2'397	2'925	3'071	2'625	2'704	2'878	2'442	2'105	1'370	1'818
September.	1'786	1'831	1'811	2'295	2'330	2'721	3'752	2'819	2'822	2'667	2'116	1'628
October ..	1'641	2'374	2'635	3'038	3'448	3'063	3'123	2'450	2'792	2'677	2'278	2'079
November.	2'905	2'891	2'695	3'859	3'178	3'226	2'957	2'675	2'279	2'195	2'140	2'344
December.	1'005	1'086	1'223	1'225	1'270	1'037	1'566	1'516	1'435	1'560	1'246	1'307
Year ..	19'676	20'038	20'059	24'148	24'311	23'386	25'113	23'284	22'782	22'451	19'028	19'869

continued.

with the NUMBER of DAYS available in each MONTH—continued.

## GLASGOW.

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Midt.	Days available.
ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	
3'067	2'807	3'166	2'984	2'650	2'513	2'753	2'789	2'372	2'643	2'410	2'526	539
1'661	1'713	2'004	1'596	1'731	1'993	1'562	2'050	1'960	1'827	1'541	2'136	512
1'845	1'916	1'848	1'821	1'638	1'608	1'577	1'179	1'423	1'471	1'615	1'647	538
1'405	1'483	1'821	1'417	1'805	1'711	1'823	1'973	1'658	1'661	1'414	1'451	595
2'161	2'344	2'185	2'295	2'319	1'966	1'684	1'648	2'110	1'920	1'895	1'322	587
2'640	2'719	2'310	2'216	3'715	3'010	2'130	2'030	1'976	2'464	2'255	2'224	591
3'493	2'196	2'349	2'229	2'656	2'741	3'540	2'916	2'941	2'319	1'628	2'097	587
3'300	3'144	4'213	4'100	3'608	3'055	2'345	1'954	2'518	2'622	2'670	3'187	619
2'563	2'082	2'405	2'633	2'633	3'039	2'656	2'500	3'095	2'793	2'757	3'043	567
2'834	3'279	2'930	2'359	2'616	2'874	2'617	2'732	3'126	2'870	2'709	3'186	617
3'310	3'617	3'495	3'671	3'482	3'403	2'836	2'981	3'451	3'098	2'656	3'243	582
2'732	2'304	2'581	3'220	2'969	3'079	3'045	3'188	2'503	2'549	2'008	2'604	591
31'011	29'604	31'307	30'541	31'822	30'992	28'568	27'940	29'133	28'237	25'558	28'666	..

## ABERDEEN.

ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	
1'450	1'029	0'773	0'986	1'164	1'127	0'783	1'093	1'276	1'066	1'223	0'936	439
0'898	0'987	1'078	1'342	1'064	0'879	1'189	0'842	1'053	1'093	1'261	1'535	349
1'002	0'826	1'161	1'031	0'950	1'305	0'990	0'877	0'922	0'748	0'875	0'980	394
1'539	1'709	1'969	1'611	1'765	1'757	1'535	1'608	1'531	1'522	1'855	1'892	598
1'437	1'759	2'115	2'431	2'601	3'195	2'005	1'865	2'317	2'005	1'697	1'550	618
2'082	1'797	2'105	2'098	2'247	1'827	1'496	1'847	2'057	1'430	1'097	1'138	598
3'440	3'430	4'015	3'518	3'146	3'137	2'021	1'821	2'074	2'388	1'678	1'760	617
2'551	2'385	2'997	3'223	3'368	2'509	2'933	2'774	2'965	2'308	2'571	2'022	619
2'269	1'623	2'139	2'226	2'481	2'506	2'299	2'320	1'563	2'957	2'287	1'931	599
2'140	2'186	1'861	1'851	2'086	2'260	2'050	2'128	1'856	1'707	1'580	1'994	606
2'319	2'445	2'384	2'220	2'442	2'803	2'229	2'311	2'603	3'030	3'145	3'180	571
1'540	1'178	1'117	1'432	1'848	1'297	1'158	1'333	1'525	1'004	0'778	0'935	399
22'667	21'354	23'714	23'969	25'162	24'602	20'688	20'819	22'742	21'258	20'056	19'853	..



TABLE II.—

TOTAL AMOUNTS for each HOUR of the TWENTY YEARS 1871-1890,

## FALMOUTH.

Month.	1	2	3	4	5	6	7	8	9	10	11	Noon.
	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
January ..	4'060	4'495	4'282	4'109	3'691	3'661	4'097	4'232	3'890	3'820	3'430	4'235
February..	3'095	2'945	3'745	2'875	3'065	3'085	2'770	3'095	3'330	3'367	2'545	2'410
March ..	3'105	3'122	3'418	3'060	2'540	2'430	2'442	2'445	2'510	2'620	2'380	1'773
April ..	2'967	2'408	2'590	2'647	2'583	3'195	3'400	3'895	2'875	2'930	1'917	2'795
May ..	1'860	2'970	2'850	2'600	2'367	2'383	2'211	2'544	2'158	1'539	1'765	1'660
June ..	2'015	2'610	3'023	2'965	2'670	2'645	2'505	2'530	1'667	1'790	1'660	1'758
July ..	2'735	3'360	3'900	2'985	3'050	3'835	2'990	2'675	2'945	2'600	2'115	2'770
August ..	2'977	2'693	3'118	2'935	3'065	3'270	2'630	2'890	2'640	2'762	2'935	2'585
September	3'920	4'635	4'340	3'680	3'900	4'205	3'940	3'360	3'704	3'540	2'463	2'560
October ..	5'130	5'196	5'505	6'030	6'146	5'225	5'007	5'306	4'512	4'520	3'332	3'913
November.	4'243	4'725	5'823	6'835	4'505	4'640	3'820	4'750	4'065	3'900	4'185	4'445
December.	4'670	5'260	4'035	2'015	4'120	4'020	4'260	4'340	3'690	4'418	4'160	4'015
Year ..	40'777	44'419	46'629	42'736	41'702	42'594	40'072	42'062	37'986	37'806	32'887	34'919

## STONYHURST.

	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
January ..	2'582	2'545	2'793	3'552	3'649	3'563	3'662	3'711	2'598	3'273	3'010	3'057
February..	2'345	2'571	2'014	2'302	2'114	1'717	2'130	1'737	2'018	2'270	1'813	2'094
March ..	2'456	2'505	3'002	3'190	2'916	2'747	2'638	2'579	2'343	2'185	1'544	2'183
April ..	1'564	1'613	2'194	2'615	1'937	2'009	2'229	2'166	2'106	2'087	1'458	1'941
May ..	1'691	1'618	1'493	1'806	2'657	2'647	2'859	2'951	2'679	2'927	2'240	1'563
June ..	2'271	2'408	1'931	2'250	2'702	1'868	2'575	2'596	2'757	2'404	2'431	3'145
July ..	3'519	3'832	4'778	3'294	4'432	4'808	5'211	3'485	2'985	3'136	3'261	3'788
August ..	4'856	3'879	3'587	4'382	4'145	4'427	4'668	4'774	3'876	4'710	3'687	3'669
September	3'925	3'863	4'476	3'890	4'164	4'606	4'527	4'208	4'154	3'610	3'436	3'149
October ..	4'983	5'112	4'608	4'723	4'064	3'712	3'366	3'284	3'730	4'034	2'673	3'518
November.	3'855	3'572	3'810	4'387	4'082	3'815	3'287	3'126	3'048	3'785	3'044	3'309
December.	2'921	3'032	3'115	3'619	3'649	3'549	3'181	2'754	2'441	3'256	2'526	2'803
Year ..	36'968	36'550	37'801	40'010	40'511	39'468	40'333	37'371	34'735	37'677	31'123	34'219

continued.

with the NUMBER of DAYS available in each MONTH—continued.

## FALMOUTH.

1	2	3	4	5	6	7	8	9	10	11	Midt.	Days available.
ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	
3'835	3'930	3'785	3'808	3'810	3'610	3'185	3'269	3'575	3'960	3'310	4'482	547
3'085	3'610	3'505	3'255	3'090	3'050	3'180	3'285	4'020	530	3'300	3'340	532
2'040	2'242	2'295	2'350	2'695	2'555	2'185	2'455	2'815	2'585	2'860	2'935	581
2'550	2'370	1'815	1'850	1'885	2'410	1'845	1'985	2'185	2'460	1'917	2'568	595
1'340	1'385	1'430	1'670	1'535	1'660	1'675	1'850	2'335	2'190	2'205	2'335	616
2'219	1'688	1'970	1'715	1'450	1'148	1'227	2'180	2'250	2'010	2'255	2'545	591
2'760	2'820	2'797	2'745	2'532	2'321	3'130	3'675	2'390	2'915	3'010	2'745	614
2'765	2'175	2'505	2'320	2'110	2'840	3'385	3'090	3'070	2'385	3'130	3'025	614
2'760	2'737	2'905	2'835	3'300	3'225	4'055	2'875	2'840	3'271	4'052	3'781	590
3'057	3'229	2'966	3'713	4'190	3'210	3'873	4'045	4'440	4'560	3'400	4'898	612
4'770	5'612	4'465	5'555	6'335	6'412	5'673	4'330	4'530	4'500	4'155	4'532	596
4'260	5'500	4'985	4'060	4'030	3'760	3'832	3'948	4'312	4'480	5'248	4'330	613
35'441	37'298	35'423	35'876	36'962	36'201	37'245	36'987	38'762	38'846	38'842	41'616	..

## STONYHURST.

ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	
2'896	2'999	3'300	2'897	3'098	3'090	3'405	3'169	2'725	2'528	2'899	2'655	555
2'294	1'979	2'468	2'349	2'536	1'794	2'088	1'876	2'134	2'300	2'495	2'242	486
2'010	2'213	2'323	2'572	2'334	2'163	2'899	3'058	3'193	3'097	2'916	2'281	556
1'749	1'799	1'719	1'768	2'173	2'366	2'088	1'880	1'208	1'609	1'281	1'552	597
2'302	2'475	2'637	2'700	2'293	2'250	1'887	1'614	1'787	1'643	1'802	1'956	617
2'921	2'519	3'302	4'634	4'986	3'997	4'184	3'739	2'954	2'013	2'009	2'057	595
3'400	3'818	3'621	4'774	4'996	4'305	4'054	4'059	4'397	4'419	4'089	3'248	616
3'421	4'337	3'620	4'493	4'227	3'752	3'921	3'541	3'106	3'579	3'169	3'666	613
2'640	2'563	2'904	3'957	4'182	3'884	4'502	4'094	4'548	3'619	2'946	3'726	593
3'823	3'860	3'589	3'753	3'695	3'685	4'141	3'803	4'560	4'380	3'866	3'374	615
3'199	3'176	2'953	3'157	3'406	3'532	3'383	3'456	4'064	3'866	4'175	3'977	584
2'610	2'543	2'769	2'536	2'434	3'254	3'362	3'051	2'651	2'876	3'170	3'145	526
33'265	34'281	35'205	39'590	40'300	38'069	39'914	37'340	37'327	35'929	34'617	33'879	..



TABLE II.—  
TOTAL AMOUNT for each HOUR of the TWENTY YEARS 1871-1890,  
KEW.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Noon.
January ..	ins. 1'029	ins. 0'896	ins. 1'204	ins. 1'428	ins. 1'134	ins. 1'443	ins. 1'523	ins. 1'716	ins. 1'641	ins. 1'386	ins. 1'310	ins. 1'310
February ..	1'329	1'399	1'131	0'803	1'083	0'771	1'013	1'234	1'211	1'339	1'235	0'880
March ..	0'940	0'925	0'855	0'789	0'937	1'537	1'347	0'949	0'945	0'964	0'490	0'527
April ..	1'471	1'368	1'261	1'432	1'536	1'721	1'516	1'520	1'573	1'833	1'052	1'374
May ..	1'360	1'315	1'761	1'460	1'728	1'562	1'703	1'835	1'293	1'648	1'271	1'520
June ..	1'457	0'695	1'297	1'390	1'517	1'680	1'298	1'253	1'249	1'598	1'514	2'320
July ..	1'439	1'959	1'520	1'460	1'563	1'456	2'185	1'195	1'198	1'795	1'960	2'788
August ..	1'885	2'352	1'330	1'048	1'690	1'032	1'285	1'435	1'067	1'214	1'372	1'727
September ..	2'940	2'098	2'238	2'690	1'593	1'244	1'266	1'094	1'831	1'475	1'833	1'530
October ..	2'241	1'938	1'965	1'834	2'192	2'545	1'918	2'122	2'354	2'521	2'292	2'785
November ..	1'897	2'067	2'056	1'831	1'925	1'913	1'774	1'716	1'528	1'452	1'317	1'323
December ..	1'252	1'134	1'270	1'281	1'487	1'283	1'095	1'168	1'434	0'952	1'190	1'405
Year ..	19'240	18'146	17'888	17'446	18'385	18'187	17'923	17'237	17'324	18'177	16'836	19'489

TABLE  
PROBABLE VALUES for the COMPLETE PERIOD of  
VALENCIA.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
January ..	ins. 4'956	ins. 4'494	ins. 5'185	ins. 5'309	ins. 5'881	ins. 4'796	ins. 5'566	ins. 5'200	ins. 5'475	ins. 5'994	ins. 4'260
February ..	5'202	5'154	5'031	4'625	4'239	3'687	3'299	3'502	3'416	3'769	4'704
March ..	3'619	3'629	4'427	3'590	3'686	4'117	4'093	4'267	3'828	3'670	3'241
April ..	3'753	3'450	3'591	3'762	3'687	3'718	3'431	3'333	3'202	3'156	2'912
May ..	2'921	3'531	4'063	3'987	3'445	3'257	3'283	3'038	3'276	3'052	2'015
June ..	3'624	3'030	3'711	4'291	4'357	3'689	4'364	3'381	3'380	2'926	2'295
July ..	3'607	4'474	4'588	4'218	3'842	4'228	4'036	4'311	4'670	3'124	2'537
August ..	4'303	4'212	3'896	4'814	5'932	5'988	5'528	3'939	3'837	3'971	3'591
September ..	3'706	3'780	5'068	4'187	4'818	4'053	4'520	4'130	5'031	3'334	3'141
October ..	5'266	4'419	4'115	4'553	4'658	4'383	3'877	3'927	4'002	4'225	4'264
November ..	5'549	4'673	4'879	4'680	4'838	4'736	5'456	6'460	4'542	5'662	4'821
December ..	4'110	4'461	4'451	5'609	4'656	5'026	5'517	4'977	4'907	5'473	4'867
Year ..	50'616	49'307	53'005	53'625	54'039	51'678	52'970	50'465	49'566	48'356	42'648
Dec.-Feb. ..	14'268	14'109	14'667	15'543	14'776	13'509	14'382	13'679	13'798	15'236	13'831
Mar.-May ..	10'293	10'610	12'081	11'339	10'818	11'092	10'807	10'638	10'306	9'878	8'168
June-Aug. ..	11'534	11'716	12'195	13'323	14'131	13'905	13'928	11'631	11'887	10'021	8'423
Sept.-Nov. ..	14'521	12'872	14'062	13'420	14'314	13'172	13'853	14'517	13'575	13'221	12'226

continued.

with the NUMBER of DAYS available in each MONTH—continued.  
KEW.

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Midt.	Days available.
ins. 1'282	ins. 1'358	ins. 1'736	ins. 1'538	ins. 1'533	ins. 1'427	ins. 1'305	ins. 0'972	ins. 1'434	ins. 1'055	ins. 1'145	ins. 1'246	533
1'075	1'226	0'947	0'892	0'935	1'135	1'032	0'918	1'065	0'980	0'795	1'207	482
0'957	0'932	0'915	0'773	0'887	1'320	0'740	0'680	0'882	0'900	1'130	0'750	526
1'931	1'803	1'864	2'116	1'816	1'477	0'954	1'148	1'024	1'481	1'573	1'499	589
1'472	1'935	2'165	2'093	1'948	1'541	0'914	1'094	1'092	0'871	1'332	1'445	616
1'257	1'510	2'038	1'953	2'318	1'979	2'528	1'509	2'665	2'378	1'720	1'410	595
4'038	2'765	3'695	2'950	1'893	2'943	2'021	2'427	1'813	2'230	1'890	2'162	612
2'000	2'267	2'129	2'068	2'861	2'213	2'389	1'414	1'526	1'636	1'543	1'493	614
2'072	1'103	1'193	1'503	2'339	1'850	1'734	1'903	1'976	1'577	2'007	2'723	595
3'305	2'365	2'490	2'394	2'262	1'730	2'393	1'973	1'697	1'172	1'477	1'580	613
1'677	1'835	2'296	1'768	2'463	1'870	1'880	1'673	1'563	2'100	2'512	2'197	590
1'341	0'958	1'137	1'344	1'140	1'345	1'222	1'165	0'966	0'948	1'235	1'618	529
22'407	20'057	22'605	21'392	22'395	20'830	19'112	17'276	17'403	17'328	18'359	19'330	

### III.

TWENTY YEARS, CALCULATED as EXPLAINED in TEXT.  
VALENCIA.

Noon.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Midt.
ins. 4'812	ins. 5'136	ins. 6'248	ins. 5'509	ins. 4'025	ins. 4'204	ins. 5'478	ins. 5'038	ins. 6'246	ins. 6'798	ins. 6'015	ins. 4'764	ins. 5'619
4'461	3'514	3'916	4'217	4'632	4'444	3'457	3'883	4'531	4'627	4'758	4'522	5'233
3'036	3'711	3'457	3'302	2'916	2'717	2'894	3'179	3'275	3'150	3'019	2'639	3'147
2'564	2'420	2'482	2'200	2'734	2'697	3'202	3'499	3'935	3'789	3'102	3'819	3'282
2'946	2'414	2'210	2'194	2'130	2'343	2'067	2'356	2'529	2'048	2'712	2'082	2'673
2'222	2'266	1'856	2'032	2'470	3'165	3'234	2'876	3'276	2'783	2'343	3'345	4'075
3'211	2'701	3'148	2'955	3'583	3'646	3'508	2'749	3'013	3'553	3'615	3'722	3'523
3'273	3'257	2'802	3'303	3'186	2'873	4'343	4'676	3'563	3'380	4'215	3'684	4'428
3'478	2'994	3'673	3'483	3'247	4'573	3'519	3'779	3'975	3'789	3'726	3'714	3'636
4'655	4'672	3'550	4'033	4'322	4'624	4'855	5'557	5'208	4'662	5'606	5'859	5'532
4'539	4'680	3'956	5'367	4'183	5'084	4'748	4'635	4'517	4'481	4'568	4'206	4'550
5'068	4'792	5'224	5'132	4'389	4'550	5'530	5'056	5'620	5'037	4'936	4'291	4'194
44'285	42'557	42'522	43'727	41'817	44'920	46'835	47'283	49'688	48'097	48'615	46'647	49'892
14'341	13'442	15'388	14'858	13'046	13'198	14'465	13'977	16'397	16'462	15'709	13'577	15'046
8'546	8'545	8'149	7'696	7'780	7'757	8'163	9'034	9'739	8'987	8'833	8'540	9'102
8'706	8'224	7'806	8'290	9'239	9'684	11'085	10'301	9'852	9'716	10'173	10'751	12'026
12'672	12'346	11'179	12'883	11'752	14'281	13'122	13'971	13'700	12'932	13'900	13'779	13'718



TABLE III.—

PROBABLE VALUES for the COMPLETE PERIOD of  
ARMAGH.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
January ..	ins. 2'131	ins. 1'742	ins. 2'578	ins. 2'002	ins. 1'760	ins. 2'511	ins. 2'007	ins. 2'333	ins. 1'895	ins. 2'148	ins. 1'978
February ..	1'530	1'905	2'238	2'122	2'177	2'180	1'745	1'413	1'297	1'702	1'150
March..	1'125	1'183	1'525	1'644	1'347	1'825	1'503	1'673	2'154	2'971	1'805
April ..	1'369	1'783	2'027	2'305	1'674	1'813	2'028	1'859	1'582	1'709	1'258
May ..	1'323	1'325	1'868	1'711	2'146	1'566	1'488	1'612	1'115	1'317	2'215
June ..	1'439	1'760	2'275	1'891	1'860	1'701	1'533	1'839	1'772	1'634	2'128
July ..	1'984	2'027	2'111	2'468	2'620	2'649	2'330	1'623	1'984	1'990	2'699
August ..	2'226	2'297	1'733	1'357	1'377	1'889	2'622	1'647	2'011	2'951	2'187
September ..	2'177	2'640	3'544	3'344	3'367	2'493	2'219	1'686	2'133	2'375	3'009
October ..	2'831	3'161	2'799	2'745	2'524	2'117	2'240	1'997	1'676	2'039	2'001
November ..	1'935	2'394	2'520	2'278	2'858	2'391	2'755	2'473	2'555	2'257	2'294
December ..	2'175	2'222	2'505	2'127	1'688	1'778	2'085	1'735	1'853	1'787	2'090
Year ..	22'245	24'439	27'723	25'694	25'398	24'913	24'555	21'890	22'027	24'880	24'814
Dec.-Feb. ..	5'836	5'869	7'321	6'251	5'625	6'469	5'837	5'481	5'045	5'637	5'218
Mar.-May ..	8'817	4'291	5'420	5'660	5'167	5'204	5'019	5'144	4'851	5'997	5'278
June-Aug. ..	5'649	6'084	6'119	5'416	5'857	6'239	6'485	5'109	5'767	6'575	7'014
Sept.-Nov. ..	6'943	8'195	8'863	8'367	8'749	7'001	7'214	6'156	6'364	6'671	7'304

## GLASGOW.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
January ..	ins. 3'534	ins. 3'606	ins. 3'386	ins. 3'279	ins. 3'181	ins. 3'616	ins. 3'190	ins. 3'034	ins. 2'567	ins. 3'229	ins. 2'721
February ..	2'070	1'753	1'791	2'082	2'129	2'459	2'668	2'607	2'462	2'491	2'314
March..	1'857	1'743	2'112	1'754	2'116	2'086	2'075	1'965	2'456	2'165	1'657
April ..	1'559	1'942	1'777	1'785	1'585	1'608	1'733	1'429	1'556	1'530	1'195
May ..	2'101	1'779	1'607	1'638	2'214	2'146	2'076	1'709	2'043	1'768	1'490
June ..	1'523	2'352	2'362	2'100	2'010	2'347	2'099	1'462	1'521	1'466	1'280
July ..	3'311	3'294	3'199	3'057	4'184	3'107	2'905	2'937	2'223	2'678	2'659
August ..	3'016	2'724	3'725	3'497	2'869	3'166	2'931	2'658	2'177	2'359	2'212
September ..	2'617	2'401	3'424	2'743	3'814	2'968	2'877	2'388	2'346	2'414	2'202
October ..	3'060	3'710	3'549	3'402	3'423	3'225	2'986	2'928	2'620	3'054	2'435
November ..	3'546	3'097	2'517	2'624	2'549	2'752	2'252	2'522	2'757	2'986	2'684
December ..	2'151	2'453	2'169	2'257	2'504	2'318	2'060	2'678	3'229	3'139	1'880
Year ..	30'345	30'854	31'618	30'218	32'578	31'798	29'852	28'317	27'957	29'279	24'729
Dec.-Feb. ..	7'755	7'812	7'346	7'618	7'814	8'393	7'918	8'319	8'258	8'859	6'915
Mar.-May ..	5'517	5'464	5'496	5'177	5'915	5'840	5'884	5'103	6'055	5'463	4'342
June-Aug. ..	7'850	8'370	9'286	8'654	9'063	8'620	7'935	7'057	5'921	6'503	6'151
Sept.-Nov. ..	9'223	9'208	9'490	8'769	9'786	8'945	8'115	7'838	7'723	8'454	7'321

continued.

TWENTY YEARS, CALCULATED as EXPLAINED in TEXT—continued.

## ARMAGH.

Noon.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Midt.
ins. 2'080	ins. 2'677	ins. 1'807	ins. 1'587	ins. 2'164	ins. 2'263	ins. 1'898	ins. 1'820	ins. 1'607	ins. 2'120	ins. 2'228	ins. 2'484	ins. 2'270
1'044	1'457	2'045	1'994	2'036	1'832	2'251	1'958	1'779	1'658	1'852	1'259	1'470
1'857	1'807	1'813	1'997	2'171	2'047	1'570	1'842	1'767	1'610	1'734	1'620	1'140
1'185	1'275	1'873	2'504	2'492	2'339	2'052	1'689	1'549	1'556	1'255	1'316	1'175
1'807	2'360	2'529	1'951	1'833	2'138	2'433	2'306	1'643	1'746	1'597	1'331	1'304
2'207	2'050	2'677	3'025	3'739	2'780	3'092	2'088	2'441	1'630	1'473	1'562	1'312
3'177	4'214	3'978	4'528	3'634	3'934	2'971	3'822	3'491	2'669	2'198	2'391	2'067
2'442	4'389	3'644	3'510	2'606	2'191	2'635	2'390	1'985	2'447	1'806	1'899	2'742
2'330	2'935	2'354	3'042	2'761	2'572	2'079	2'883	2'306	2'664	3'068	2'835	2'548
2'061	2'233	2'573	2'459	2'821	2'683	2'265	2'488	2'097	1'895	2'098	2'155	2'245
3'033	2'416	2'459	3'013	2'827	2'749	3'200	2'472	3'242	3'005	3'106	2'857	2'327
2'363	2'150	2'237	2'529	2'121	2'567	2'236	1'951	2'111	1'905	1'798	1'993	2'168
25'586	29'963	29'989	32'139	31'205	30'095	28'682	27'709	26'018	24'905	24'213	23'702	22'768
5'487	6'284	6'089	6'110	6'321	6'662	6'385	5'729	5'497	5'683	5'878	5'736	5'908
4'849	5'442	6'215	6'452	6'496	6'524	6'055	5'837	4'959	4'912	4'586	4'267	3'619
7'826	10'653	10'299	11'063	9'979	8'905	8'698	8'300	7'917	6'746	5'477	5'852	6'121
7'424	7'584	7'386	8'514	8'409	8'004	7'544	7'843	7'645	7'564	8'272	7'847	7'120

## GLASGOW.

ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
3'215	3'527	3'228	3'641	3'432	3'048	2'890	3'166	3'207	2'728	3'039	2'772	2'905
1'594	1'834	1'891	2'212	1'762	1'911	2'200	1'724	2'263	2'164	2'017	1'701	2'358
2'087	2'125	2'207	2'129	2'098	1'887	1'852	1'817	1'358	1'639	1'695	1'860	1'897
1'619	1'416	1'495	1'836	1'428	1'819	1'725	1'838	1'989	1'671	1'674	1'425	1'463
1'902	2'282	2'475	2'307	2'424	2'449	2'076	1'778	1'740	2'228	2'028	2'001	1'396
1'998	2'680	2'760	2'345	2'249	3'771	3'055	2'162	2'060	2'006	2'501	2'289	2'257
2'231	3'689	2'319	2'481	2'354	2'805	2'894	3'738	3'079	3'106	2'449	1'719	2'214
3'010	3'307	3'150	4'221	4'108	3'615	3'061	2'350	1'958	2'523	2'627	2'675	3'193
2'566	2'712	2'203	2'544	2'786	2'786	3'215	2'810	2'645	3'275	2'955	2'917	3'219
3'392	2'847	3'295	2'945	2'371	2'629	2'888	2'630	2'746	3'142	2'884	2'723	3'202
2'714	3'413	3'729	3'603	3'785	3'590	3'508	2'924	3'073	3'558	3'194	2'738	3'344
2'167	2'866	2'417	2'707	3'378	3'114	3'230	3'194	3'344	2'626	2'674	2'106	2'732
28'495	32'698	31'169	32'971	32'175	33'424	32'594	30'131	29'462	30'666	29'737	28'926	30'180
6'976	8'227	7'536	8'560	8'572	8'073	8'320	8'084	8'814	7'518	7'730	6'579	7'995
5'608	5'823	6'177	6'272	5'950	6'155	5'653	5'433	5'087	5'538	5'397	5'286	4'756
7'239	9'676	8'229	9'047	8'711	10'191	9'010	8'250	7'097	7'635	7'577	6'683	7'664
8'672	8'972	9'227	9'092	8'942	9'005	9'611	8'364	8'464	9'975	9'033	8'378	9'765



TABLE III.—  
PROBABLE VALUES for the COMPLETE PERIOD of TWENTY  
ABERDEEN.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
January ..	ins. 0'740	ins. 1'271	ins. 1'377	ins. 1'820	ins. 1'620	ins. 1'771	ins. 2'273	ins. 2'022	ins. 2'142	ins. 1'944	ins. 1'765
February ..	2'768	2'589	1'912	1'545	2'001	1'700	1'579	1'635	2'127	2'495	1'706
March.. ..	1'314	1'500	1'522	1'952	2'062	1'777	1'598	1'670	2'240	2'330	1'566
April .. ..	1'628	1'540	1'673	1'786	2'108	2'211	2'588	2'635	2'224	1'863	1'663
May .. .. .	1'505	0'965	1'160	1'273	1'566	1'548	1'603	1'334	1'231	0'885	1'179
June .. .. .	1'167	1'410	1'313	1'598	1'291	1'576	1'622	1'276	1'528	1'653	1'595
July .. .. .	1'966	2'231	2'051	2'693	2'383	1'973	1'619	2'225	1'800	2'474	2'167
August .. ..	3'033	2'286	2'402	2'931	3'077	2'630	2'709	2'884	2'447	2'109	1'373
September ..	1'790	1'835	1'815	2'300	2'335	2'726	3'760	2'825	2'828	2'672	2'120
October .. .	1'679	2'429	2'696	3'108	3'527	3'133	3'200	2'506	2'856	2'739	2'330
November ..	3'053	3'038	2'832	4'056	3'340	3'391	3'108	2'811	2'395	2'307	2'249
December ..	1'562	1'688	1'901	1'904	1'974	1'611	2'434	2'356	2'230	2'424	1'916
Year .. .. .	22'205	22'782	22'654	26'966	27'284	26'047	28'093	26'179	26'048	25'895	21'649
Dec.-Feb. ..	5'070	5'548	5'190	5'269	5'595	5'082	6'286	6'013	6'499	6'863	5'407
Mar.-May ..	4'447	4'005	4'355	5'011	5'736	5'536	5'789	5'639	5'695	5'078	4'408
June-Aug. ..	6'166	5'927	5'766	7'222	6'751	6'179	5'950	6'385	5'775	6'236	5'135
Sept.-Nov. ..	6'522	7'302	7'343	9'464	9'202	9'250	10'068	8'142	8'079	7'718	6'699

## FALMOUTH.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
January ..	ins. 4'600	ins. 5'093	ins. 4'852	ins. 4'656	ins. 4'182	ins. 4'148	ins. 4'642	ins. 4'795	ins. 4'407	ins. 4'328	ins. 3'886
February ..	3'287	3'128	3'977	3'053	3'255	3'276	2'942	3'287	3'536	3'576	2'703
March.. ..	3'313	3'331	3'647	3'265	2'710	2'593	2'606	2'609	2'678	2'796	2'539
April .. ..	2'991	2'427	2'611	2'668	2'604	3'221	3'427	3'926	2'898	2'593	1'932
May .. .. .	1'871	2'988	2'867	2'616	2'381	2'398	2'224	2'559	2'171	1'548	1'775
June .. .. .	2'045	2'649	3'068	3'009	2'710	2'685	2'543	2'568	1'692	1'817	1'685
July .. .. .	2'762	3'394	3'939	3'015	3'081	3'873	3'020	2'702	2'974	2'626	2'136
August .. ..	3'007	2'720	3'149	2'964	3'096	3'303	2'656	2'919	2'666	2'790	2'964
September ..	3'987	4'714	4'414	3'743	3'966	4'276	4'007	3'417	3'767	3'600	2'505
October .. .	5'197	5'264	5'577	6'108	6'226	5'293	5'072	5'375	4'571	4'579	3'375
November ..	4'273	4'758	5'864	6'883	4'537	4'672	3'847	4'783	4'093	3'927	4'214
December ..	4'721	5'318	4'079	2'037	4'165	4'064	4'307	4'388	3'731	1'467	4'206
Year .. .. .	42'054	45'784	48'044	44'017	42'913	43'802	41'293	43'328	39'164	39'007	33'920
Dec.-Feb. ..	12'608	13'539	12'908	9'746	11'602	11'488	11'891	12'470	11'674	12'371	10'795
Mar.-May ..	8'175	8'746	9'125	8'549	7'695	8'212	8'257	9'094	7'747	7'297	6'246
June-Aug. ..	7'814	8'763	10'156	8'988	8'887	9'861	8'219	8'189	7'332	7'233	6'785
Sept.-Nov. ..	13'457	14'736	15'855	16'734	14'729	14'241	12'926	13'575	12'431	12'106	10'094

continued.

YEARS CALCULATED as EXPLAINED in TEXT—continued.

## ABERDEEN.

Noon.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Midt.
ins. 1'940	ins. 2'060	ins. 1'453	ins. 1'091	ins. 1'392	ins. 1'644	ins. 1'591	ins. 1'106	ins. 1'543	ins. 1'802	ins. 1'505	ins. 1'727	ins. 1'322
1'711	1'454	1'598	1'745	2'173	1'723	1'423	1'925	1'363	1'705	1'770	2'042	2'485
1'369	1'577	1'300	1'827	1'623	1'495	2'054	1'558	1'380	1'451	1'177	1'377	1'543
1'482	1'544	1'714	1'975	1'616	1'770	1'762	1'540	1'613	1'536	1'527	1'861	1'898
1'418	1'441	1'764	2'121	2'438	2'609	3'205	2'011	1'871	2'324	2'011	1'702	1'555
1'742	2'088	1'802	2'111	2'104	2'254	1'832	1'500	1'853	2'063	1'434	1'100	1'141
2'777	3'457	3'447	4'035	3'536	3'162	3'153	2'031	1'830	2'084	2'400	1'686	1'769
1'822	2'556	2'390	3'003	3'229	3'375	2'514	2'939	2'780	2'971	2'313	2'576	2'026
1'631	2'274	1'626	2'143	2'230	2'486	2'511	2'304	2'325	2'568	2'963	2'292	1'935
2'127	2'189	2'236	1'904	1'894	2'134	2'312	2'097	2'177	1'899	1'746	1'626	2'040
2'464	2'437	2'570	2'506	2'333	2'567	2'946	2'343	2'429	2'736	3'185	3'305	3'342
2'031	2'393	1'831	1'736	2'225	2'872	2'016	1'800	2'071	2'370	1'560	1'209	1'453
22'514	25'470	23'731	26'197	26'793	28'091	27'319	23'154	23'235	25'509	23'591	22'503	22'509
5'682	5'907	4'882	4'572	5'790	6'239	5'030	4'831	4'977	5'877	4'835	4'978	5'260
4'269	4'562	4'778	5'923	5'677	5'874	7'021	5'109	4'864	5'311	4'715	4'940	4'996
6'341	8'101	7'639	9'149	8'869	8'791	7'499	6'470	6'463	7'118	6'147	5'362	4'936
6'222	6'900	6'432	6'553	6'457	7'187	7'769	6'744	6'931	7'203	7'894	7'223	7'317

## FALMOUTH.

ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
4'798	4'345	4'453	4'288	4'314	4'317	4'090	3'609	3'704	4'050	4'487	3'750	5'078
2'559	3'276	3'834	3'722	3'457	3'282	3'239	3'377	3'489	4'269	3'749	3'505	3'547
1'892	2'177	2'392	2'449	2'507	2'876	2'726	2'331	2'619	3'004	2'758	3'052	3'132
2'817	2'570	2'389	1'830	1'865	1'900	2'429	1'860	2'001	2'202	2'480	1'932	2'589
1'670	1'348	1'393	1'439	1'680	1'544	1'670	1'685	1'861	2'349	2'203	2'218	2'349
1'784	2'252	1'713	2'000	1'741	1'472	1'165	1'245	2'213	2'284	2'040	2'289	2'583
2'798	2'788	2'848	2'825	2'772	2'557	2'344	3'161	3'712	2'414	2'944	3'040	2'772
2'611	2'793	2'197	2'530	2'343	2'131	2'868	3'419	3'121	3'101	2'409	3'161	3'055
2'604	2'807	2'784	2'954	2'883	3'356	3'280	4'124	2'924	2'888	3'327	4'121	3'845
3'964	3'097	3'271	3'005	3'761	4'244	3'252	3'923	4'098	4'498	4'619	3'444	4'062
4'476	4'803	5'651	4'496	5'594	6'379	6'457	5'713	4'360	4'562	4'532	4'184	4'564
4'059	4'307	5'561	5'040	4'105	4'074	3'801	3'874	3'991	4'359	4'529	5'306	4'378
36'032	36'563	38'486	36'578	37'022	38'132	36'321	38'321	38'093	39'980	40'077	40'002	42'854
11'416	11'628	13'848	13'050	11'876	11'673	11'130	10'860	11'184	12'678	12'765	12'561	13'003
6'379	6'095	6'174	5'718	6'052	6'320	6'825	5'876	6'481	7'555	7'441	7'202	8'070
7'193	7'833	6'758	7'355	6'856	6'160	6'377	7'825	9'046	7'799	7'393	8'490	8'410
11'044	10'707	11'706	10'455	12'238	13'979	12'989	13'760	11'382	11'948	12'478	11'749	13'371



TABLE III.—  
PROBABLE VALUES for the COMPLETE PERIOD of TWENTY  
STONYHURST.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
January ..	ins. 2'884	ins. 2'843	ins. 3'120	ins. 3'968	ins. 4'076	ins. 3'980	ins. 4'090	ins. 4'145	ins. 2'902	ins. 3'656	ins. 3'362
February ..	2'727	2'990	2'342	2'677	2'459	1'997	2'477	2'020	2'347	2'640	2'109
March ..	2'738	2'793	3'347	3'557	3'251	3'063	2'941	2'876	2'612	2'436	1'722
April ..	1'572	1'621	2'205	2'628	1'947	2'019	2'240	2'177	2'117	2'097	1'465
May ..	1'699	1'626	1'500	1'815	2'670	2'660	2'873	2'966	2'692	2'942	2'251
June ..	2'289	2'427	1'946	2'268	2'724	1'883	2'596	2'617	2'779	2'423	2'450
July ..	3'540	3'855	4'807	3'314	4'459	4'837	5'242	3'506	3'003	3'155	3'281
August ..	4'909	3'922	3'626	4'430	4'191	4'476	4'719	4'827	3'919	4'762	3'728
September ..	3'972	3'909	4'530	3'937	4'214	4'661	4'581	4'258	4'204	3'653	3'477
October ..	5'023	5'153	4'645	4'761	4'097	3'742	3'393	3'310	3'760	4'066	2'694
November ..	3'959	3'668	3'913	4'505	4'192	3'918	3'376	3'210	3'130	3'887	3'126
December ..	3'444	3'575	3'673	4'267	4'302	4'184	3'750	3'247	2'878	3'839	2'978
Year ..	38'756	38'382	39'654	42'127	42'582	41'420	42'278	39'159	36'343	39'556	2'643
Dec.-Feb. ..	9'055	9'408	9'135	10'912	10'837	10'161	10'317	9'412	8'127	10'135	8'449
Mar.-May ..	6'009	6'040	7'052	8'000	7'868	7'742	8'054	8'019	7'421	7'475	5'438
June-Aug. ..	10'738	10'204	10'379	10'012	11'374	11'196	12'557	10'950	9'701	10'340	9'459
Sept.-Nov. ..	12'954	12'730	13'088	13'203	12'503	12'321	11'350	10'778	11'094	11'606	9'297

## KEW.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
January ..	ins. 1'197	ins. 1'042	ins. 1'400	ins. 1'661	ins. 1'319	ins. 1'678	ins. 1'771	ins. 1'996	ins. 1'908	ins. 1'612	ins. 1'524
February ..	1'558	1'640	1'326	0'941	1'269	0'904	1'187	1'446	1'419	1'569	1'447
March ..	1'108	1'091	1'008	0'930	1'105	1'812	1'588	1'119	1'114	1'137	0'578
April ..	1'499	1'394	1'285	1'459	1'565	1'754	1'545	1'549	1'603	1'868	1'072
May ..	1'368	1'323	1'772	1'469	1'738	1'571	1'713	1'846	1'301	1'658	1'279
June ..	1'469	0'701	1'307	1'401	1'529	1'693	1'308	1'263	1'259	1'611	1'526
July ..	1'458	1'984	1'540	1'479	1'583	1'475	2'213	1'211	1'214	1'818	1'985
August ..	1'904	2'376	1'343	1'058	1'707	1'042	1'298	1'449	1'078	1'226	1'386
September ..	2'964	2'115	2'256	2'712	1'606	1'254	1'276	1'103	1'846	1'487	1'848
October ..	2'266	1'959	1'987	1'854	2'216	2'573	1'939	2'145	2'380	2'549	2'317
November ..	1'929	2'102	2'091	1'862	1'958	1'946	1'804	1'745	1'554	1'477	1'339
December ..	1'467	1'329	1'488	1'501	1'743	1'504	1'283	1'369	1'681	1'116	1'395
Year ..	20'187	19'056	18'803	18'327	19'338	19'206	18'925	18'241	18'357	19'128	17'696
Dec.-Feb. ..	4'222	4'011	4'214	4'103	4'331	4'086	4'241	4'811	5'008	4'297	4'366
Mar.-May ..	3'975	3'808	4'065	3'858	4'408	5'137	4'846	4'514	4'018	4'663	2'929
June-Aug. ..	4'831	5'061	4'190	3'938	4'819	4'210	4'819	3'923	3'551	4'655	4'897
Sept.-Nov. ..	7'159	6'176	6'334	6'428	5'780	5'773	5'019	4'993	5'780	5'513	5'504

continued.

YEARS CALCULATED as EXPLAINED in TEXT—continued.

## STONYHURST.

Noon.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Midd.
ins. 3'415	ins. 3'235	ins. 3'350	ins. 3'686	ins. 3'236	ins. 3'460	ins. 3'451	ins. 3'803	ins. 3'540	ins. 3'044	ins. 2'824	ins. 3'238	ins. 2'966
2'435	2'668	2'302	2'870	2'732	2'949	2'086	2'428	2'182	2'482	2'675	2'902	2'607
2'434	2'241	2'467	2'590	2'868	2'602	2'412	3'232	3'410	3'560	3'453	3'251	2'543
1'951	1'758	1'808	1'728	1'777	2'184	2'378	2'098	1'889	1'214	1'617	1'287	1'560
1'571	2'314	2'487	2'650	2'714	2'304	2'261	1'896	1'622	1'796	1'651	1'811	1'966
3'170	2'944	2'539	3'328	4'671	5'026	4'029	4'217	3'769	2'978	2'029	2'025	2'073
3'811	3'420	3'841	3'643	4'803	5'026	4'331	4'078	4'083	4'423	4'446	4'114	3'267
3'709	3'459	4'385	3'660	4'542	4'273	3'793	3'964	3'580	3'140	3'618	3'204	3'706
3'187	2'672	2'594	2'939	4'004	4'232	3'931	4'556	4'143	4'603	3'662	2'981	3'771
3'546	3'854	3'891	3'618	3'783	3'725	3'714	4'174	3'833	4'596	4'415	3'897	3'401
3'398	3'285	3'262	3'033	3'242	3'498	3'627	3'474	3'549	4'174	3'970	4'288	4'084
3'305	3'077	2'998	3'265	2'990	2'870	3'833	3'964	3'597	3'126	3'391	3'737	3'708
35'932	34'927	35'924	37'010	41'362	42'149	39'846	41'884	39'197	39'136	37'751	36'735	35'652
9'155	8'980	8'650	9'821	8'958	9'279	9'370	10'195	9'319	8'652	8'890	9'877	9'281
5'956	6'313	6'762	6'968	7'359	7'090	7'051	7'226	6'921	6'570	6'721	6'349	6'069
10'690	9'823	10'765	10'631	14'016	14'325	12'153	12'259	11'432	10'541	10'093	9'343	9'046
10'131	9'811	9'747	9'590	11'029	11'455	11'272	12'204	11'525	13'373	12'047	11'166	11'256

## KEW.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Midd.
ins. 1'524	ins. 1'491	ins. 1'579	ins. 2'019	ins. 1'789	ins. 1'783	ins. 1'660	ins. 1'518	ins. 1'130	ins. 1'319	ins. 1'227	ins. 1'332	ins. 1'449
1'031	1'260	1'437	1'110	1'045	1'096	1'330	1'210	1'076	1'248	1'149	0'932	1'415
0'621	1'128	1'099	1'079	0'911	1'046	1'556	0'872	0'802	1'040	1'061	1'332	0'884
1'400	1'968	1'837	1'899	2'156	1'851	1'505	0'972	1'170	1'043	1'509	1'603	1'527
1'529	1'481	1'947	2'178	2'106	1'960	1'550	0'919	1'101	1'099	0'876	1'340	1'454
2'339	1'267	1'522	2'054	1'969	2'337	1'995	2'548	1'924	2'686	2'397	1'734	1'421
2'824	4'090	2'801	3'743	2'988	1'918	2'981	2'047	2'459	1'837	2'259	1'915	2'190
1'744	2'020	2'290	2'150	2'089	2'890	2'235	2'413	1'428	1'541	1'652	1'558	1'508
1'542	2'089	1'112	1'203	1'515	2'358	1'865	1'748	1'918	1'992	1'590	2'023	2'745
2'816	3'341	2'391	2'517	2'420	2'287	1'749	2'419	1'995	1'716	1'185	1'493	1'597
1'345	1'706	1'866	2'335	1'798	2'505	1'902	1'912	1'701	1'590	2'136	2'555	2'234
1'647	1'572	1'123	1'333	1'575	1'336	1'576	1'432	1'365	1'132	1'111	1'447	1'896
20'362	23'413	21'004	23'620	22'361	23'367	21'904	20'010	18'069	18'243	18'152	19'264	20'320
4'202	4'323	4'139	4'462	4'409	4'215	4'566	4'160	3'571	3'699	3'487	3'711	4'760
3'550	4'577	4'883	5'156	5'173	4'857	4'611	2'763	3'073	3'182	3'446	4'275	3'865
6'907	7'377	6'613	7'947	7'046	7'145	7'211	7'008	5'811	6'064	6'308	5'207	5'119
5'703	7'136	5'369	6'055	5'733	7'150	5'516	6'079	5'614	5'298	4'911	6'071	6'576



In order to be able to represent the results of the preceding table in a manageable form for a diagram the results for an average day for the several quarters and for the year have been made out.

The corresponding figures in Table III. have been divided by the total number of days during the twenty years, in the several quarters and in the year, and the resulting figures are given in the subjoined Table IV.

TABLE IV.

AVERAGE HOURLY RAINFALL for a day in each Quarter, and the whole Year, BASED on the Records for the TWENTY YEARS, 1871-1890.



TABLE

AVERAGE HOURLY RAINFALL for a DAY in each QUARTER,  
YEARS,

VALENCIA.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
Dec.-Feb. ..	in. '0079	in. '0078	in. '0081	in. '0086	in. '0082	in. '0074	in. '0080	in. '0076	in. '0076	in. '0084	in. '0076
Mar.-May ..	'0056	'0058	'0066	'0062	'0059	'0060	'0059	'0058	'0056	'0054	'0044
June-Aug. ..	'0063	'0064	'0066	'0072	'0077	'0076	'0076	'0063	'0065	'0054	'0046
Sept.-Nov. ..	'0080	'0071	'0077	'0074	'0079	'0072	'0076	'0080	'0075	'0073	'0067
Year ..	'0069	'0067	'0073	'0073	'0074	'0071	'0073	'0069	'0068	'0066	'0058

ARMAGH.

Dec.-Feb. ..	in. '0032	in. '0032	in. '0041	in. '0035	in. '0031	in. '0036	in. '0032	in. '0030	in. '0028	in. '0031	in. '0029
Mar.-May ..	'0021	'0023	'0029	'0031	'0028	'0028	'0027	'0028	'0026	'0033	'0029
June-Aug. ..	'0031	'0033	'0033	'0029	'0032	'0034	'0035	'0028	'0031	'0036	'0038
Sept.-Nov. ..	'0038	'0045	'0049	'0046	'0048	'0038	'0040	'0034	'0035	'0037	'0040
Year ..	'0030	'0033	'0038	'0035	'0035	'0034	'0034	'0030	'0030	'0034	'0034

GLASGOW.

Dec.-Feb. ..	in. '0043	in. '0043	in. '0041	in. '0042	in. '0043	in. '0046	in. '0044	in. '0046	in. '0046	in. '0049	in. '0038
Mar.-May ..	'0030	'0030	'0030	'0028	'0032	'0032	'0032	'0028	'0033	'0030	'0024
June-Aug. ..	'0043	'0045	'0050	'0047	'0049	'0047	'0043	'0038	'0032	'0035	'0033
Sept.-Nov. ..	'0051	'0051	'0052	'0048	'0054	'0049	'0045	'0043	'0042	'0046	'0040
Year ..	'0042	'0042	'0043	'0041	'0045	'0044	'0041	'0039	'0038	'0040	'0034

ABERDEEN.

Dec.-Feb. ..	in. '0028	in. '0031	in. '0029	in. '0029	in. '0031	in. '0028	in. '0035	in. '0033	in. '0036	in. '0038	in. '0030
Mar.-May ..	'0024	'0022	'0024	'0027	'0031	'0030	'0031	'0031	'0031	'0028	'0024
June-Aug. ..	'0034	'0032	'0031	'0039	'0037	'0034	'0032	'0035	'0031	'0034	'0028
Sept.-Nov. ..	'0036	'0040	'0040	'0052	'0051	'0051	'0055	'0045	'0044	'0042	'0037
Year ..	'0030	'0031	'0031	'0037	'0037	'0036	'0038	'0036	'0036	'0035	'0030

IV.

and the whole YEAR. BASED on the RECORDS for the TWENTY  
1871-1890.

VALENCIA.

Noon.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Midt.
in. '0079	in. '0074	in. '0085	in. '0082	in. '0072	in. '0073	in. '0080	in. '0077	in. '0090	in. '0091	in. '0087	in. '0075	in. '0083
'0046	'0046	'0044	'0042	'0042	'0042	'0044	'0049	'0053	'0049	'0048	'0046	'0049
'0047	'0045	'0042	'0045	'0050	'0053	'0060	'0056	'0054	'0053	'0055	'0058	'0065
'0070	'0068	'0061	'0071	'0065	'0078	'0072	'0077	'0075	'0071	'0076	'0076	'0075
'0061	'0058	'0058	'0060	'0057	'0061	'0064	'0065	'0068	'0066	'0067	'0064	'0068

ARMAGH.

in. '0030	in. '0035	in. '0034	in. '0034	in. '0035	in. '0037	in. '0035	in. '0032	in. '0030	in. '0031	in. '0033	in. '0032	in. '0033
'0026	'0030	'0034	'0035	'0035	'0035	'0033	'0032	'0027	'0027	'0025	'0023	'0020
'0043	'0058	'0056	'0060	'0054	'0048	'0047	'0045	'0043	'0037	'0030	'0032	'0033
'0041	'0042	'0041	'0037	'0046	'0044	'0041	'0043	'0042	'0042	'0045	'0043	'0039
'0035	'0041	'0041	'0044	'0043	'0041	'0039	'0038	'0036	'0034	'0033	'0032	'0031

GLASGOW.

in. '0039	in. '0046	in. '0042	in. '0047	in. '0047	in. '0045	in. '0046	in. '0045	in. '0049	in. '0042	in. '0043	in. '0036	in. '0044
'0030	'0032	'0034	'0034	'0032	'0033	'0031	'0030	'0028	'0030	'0029	'0029	'0026
'0039	'0053	'0045	'0049	'0047	'0055	'0049	'0045	'0039	'0041	'0041	'0036	'0042
'0048	'0049	'0051	'0050	'0049	'0049	'0053	'0046	'0047	'0055	'0050	'0046	'0054
'0039	'0045	'0043	'0045	'0044	'0046	'0045	'0041	'0040	'0042	'0041	'0037	'0041

ABERDEEN.

in. '0031	in. '0033	in. '0027	in. '0025	in. '0032	in. '0035	in. '0028	in. '0027	in. '0028	in. '0033	in. '0027	in. '0028	in. '0029
'0023	'0025	'0026	'0032	'0031	'0032	'0038	'0028	'0026	'0029	'0026	'0027	'0027
'0034	'0044	'0042	'0050	'0048	'0048	'0041	'0035	'0035	'0039	'0033	'0029	'0027
'0034	'0038	'0035	'0036	'0035	'0039	'0043	'0037	'0038	'0040	'0043	'0040	'0040
'0031	'0035	'0032	'0036	'0037	'0038	'0037	'0032	'0032	'0035	'0032	'0031	'0031



TABLE IV.—

AVERAGE HOURLY RAINFALL for a DAY in each QUARTER,  
YEARS 1871-1890—

## FALMOUTH.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
Dec.-Feb. ..	in. '0070	in. '0075	in. '0071	in. '0054	in. '0064	in. '0064	in. '0066	in. '0069	in. '0065	in. '0068	in. '0060
Mar.-May ..	'0044	'0048	'0050	'0046	'0042	'0045	'0045	'0049	'0042	'0040	'0034
June-Aug. ..	'0042	'0048	'0055	'0049	'0048	'0054	'0045	'0045	'0040	'0039	'0037
Sept.-Nov. ..	'0074	'0081	'0087	'0092	'0081	'0078	'0071	'0075	'0068	'0067	'0055
Year ..	'0058	'0063	'0066	'0060	'0059	'0060	'0057	'0059	'0054	'0053	'0046

## STONYHURST.

Dec.-Feb. ..	in. '0050	in. '0052	in. '0051	in. '0060	in. '0060	in. '0056	in. '0057	in. '0052	in. '0045	in. '0056	in. '0047
Mar.-May ..	'0033	'0033	'0038	'0044	'0043	'0042	'0044	'0044	'0040	'0041	'0030
June-Aug. ..	'0058	'0055	'0056	'0054	'0062	'0061	'0068	'0060	'0053	'0056	'0051
Sept.-Nov. ..	'0071	'0070	'0072	'0073	'0069	'0068	'0062	'0059	'0061	'0064	'0051
Year ..	'0053	'0053	'0054	'0058	'0058	'0057	'0058	'0054	'0050	'0054	'0045

## KEW.

Dec.-Feb. ..	in. '0023	in. '0022	in. '0023	in. '0023	in. '0024	in. '0023	in. '0023	in. '0027	in. '0028	in. '0024	in. '0024
Mar.-May ..	'0022	'0021	'0022	'0021	'0024	'0028	'0026	'0025	'0022	'0025	'0016
June-Aug. ..	'0026	'0028	'0023	'0021	'0026	'0023	'0026	'0021	'0019	'0025	'0027
Sept.-Nov. ..	'0039	'0034	'0035	'0035	'0032	'0032	'0028	'0027	'0032	'0030	'0030
Year ..	'0028	'0026	'0026	'0025	'0026	'0026	'0026	'0025	'0025	'0026	'0024

continued.

and the whole YEAR. BASED on the RECORDS for the TWENTY  
continued.

## FALMOUTH.

Noon.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Midt.
in. '0063	in. '0066	in. '0077	in. '0072	in. '0066	in. '0065	in. '0062	in. '0060	in. '0062	in. '0070	in. '0071	in. '0070	in. '0072
'0035	'0033	'0034	'0031	'0033	'0034	'0037	'0032	'0035	'0041	'0040	'0039	'0044
'0039	'0043	'0037	'0040	'0037	'0033	'0035	'0043	'0049	'0042	'0040	'0046	'0046
'0061	'0059	'0064	'0057	'0067	'0077	'0071	'0076	'0063	'0066	'0069	'0065	'0073
'0049	'0050	'0053	'0050	'0051	'0052	'0051	'0052	'0052	'0055	'0055	'0055	'0059

## STONYHURST.

in. '0051	in. '0050	in. '0048	in. '0054	in. '0050	in. '0051	in. '0052	in. '0056	in. '0052	in. '0048	in. '0049	in. '0055	in. '0051
'0032	'0034	'0037	'0038	'0040	'0039	'0038	'0039	'0038	'0036	'0037	'0035	'0033
'0058	'0053	'0059	'0058	'0076	'0078	'0066	'0067	'0062	'0057	'0055	'0051	'0049
'0056	'0054	'0054	'0053	'0061	'0063	'0062	'0067	'0063	'0074	'0066	'0061	'0062
'0049	'0048	'0049	'0051	'0057	'0058	'0055	'0057	'0054	'0054	'0052	'0050	'0049

## KEW.

in. '0023	in. '0024	in. '0023	in. '0025	in. '0024	in. '0023	in. '0025	in. '0023	in. '0020	in. '0020	in. '0019	in. '0021	in. '0026
'0019	'0025	'0027	'0028	'0028	'0026	'0025	'0015	'0017	'0017	'0019	'0023	'0021
'0038	'0040	'0036	'0043	'0038	'0039	'0039	'0038	'0032	'0033	'0034	'0028	'0028
'0031	'0039	'0030	'0033	'0032	'0039	'0030	'0033	'0031	'0029	'0027	'0033	'0036
'0028	'0032	'0029	'0032	'0031	'0032	'0030	'0027	'0025	'0025	'0025	'0026	'0028



The figures are represented graphically in Plates I.—VII. in the preparation of which it has been thought advisable to repeat the midnight values, so that the curves commence with midnight instead of 1 h. a.m.

It will be seen that these curves do not exhibit any marked character, as regards Quantity, except in the summer months, when at four of the stations, Armagh, Aberdeen, Stonyhurst, and Kew, there is a decided increase of quantity in the early afternoon hours. It is therefore clear that even twenty years are not sufficient to show any definite periodicity, should such exist, in the amount of rain which falls during the twenty four hours.

However, at several of the stations there is a decided falling off, in quantity, between 10 h. and 11 h. a.m. At Armagh this decrease occurs between 8 h. and 9 h. and there is no depression at 11 h.

The papers are changed at 10 h. a.m., but this does not seem sufficient to account for the diminution in quantity, as at more than one of the stations the reduction of quantity is continued till noon, and even later.

The curves will now be considered in slight detail.

*Valencia.*—The curves for winter and autumn are very irregular, and the same is true for Falmouth at the same seasons. The annual curve for Valencia shows an increase in quantity in the early morning hours. It will be seen, later on, that the frequency at that station obeys the same law.

At *Armagh* there is nothing to be noticed except the preponderance of rain in the afternoon in summer.

*Glasgow* and *Aberdeen* do not call for remark.

At *Falmouth* the amplitudes of the curves are greater than elsewhere, but there is so little periodicity evinced that while the winter curve has a minimum at 4 h. a.m. the autumn curve has a maximum at the same hour. The annual curve for Falmouth resembles that for Valencia.

At *Stonyhurst* there is not much to attract attention and at *Kew* the curves are the smoothest of all.

### FREQUENCY.

The figures for Frequency are percentages of the actual number of hours available.

The rain entries have been corrected, subject to the modification of correction of entries of very minute quantities of rain.

## VALENCIA QUANTITY

HOURLY DISTRIBUTION OF RAINFALL.  
IN THOUSANDTHS OF AN INCH  
BASED UPON THE RECORDS FOR THE  
20 YEARS.—1871—1890.

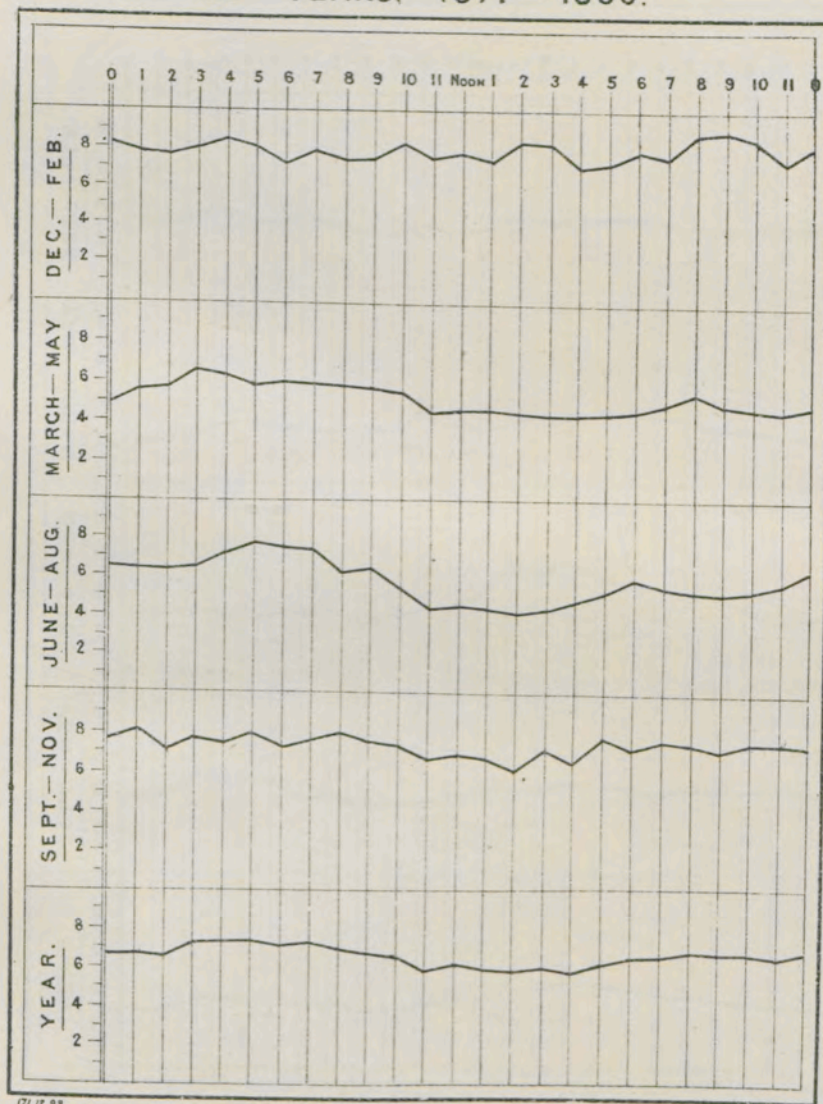


PLATE I.

E. Waller & Grahams Ltd. Litho. London



# ARMAGH QUANTITY.

HOURLY DISTRIBUTION OF RAINFALL.  
IN THOUSANDTHS OF AN INCH  
BASED UPON THE RECORDS FOR THE  
20 YEARS,—1871—1890.

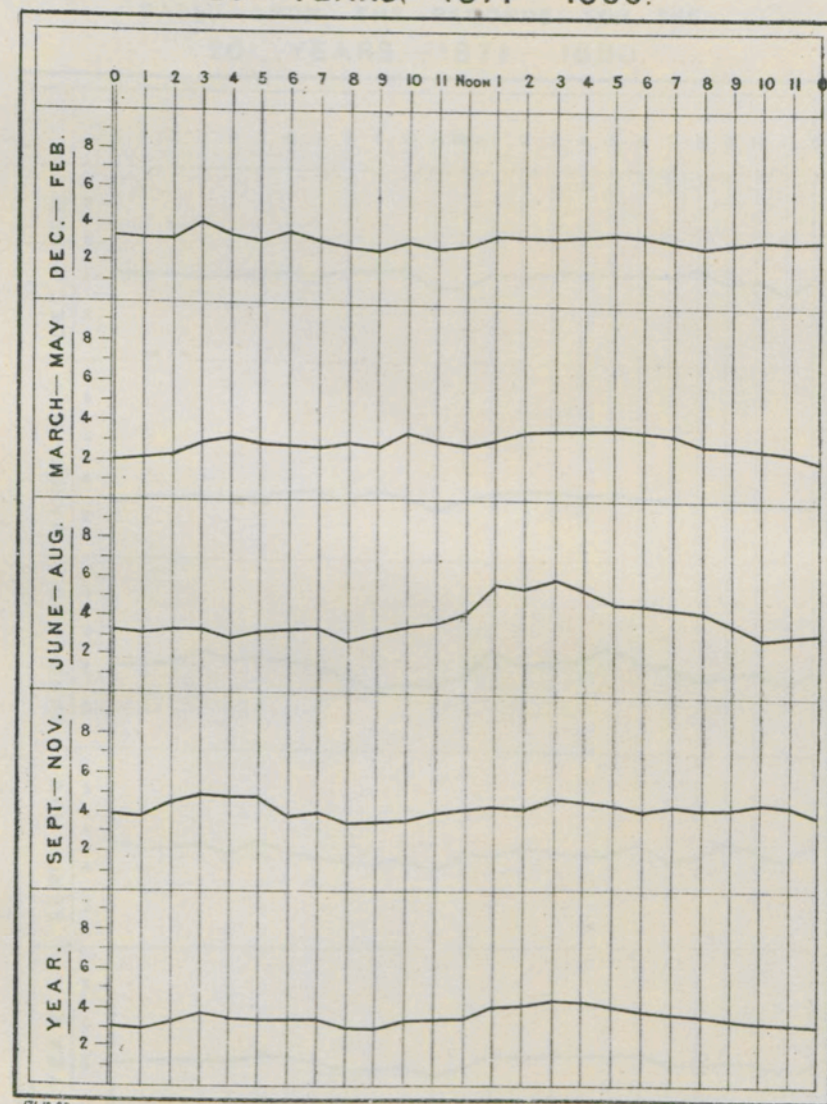


PLATE II.

E. Weiler & Grubb's Ltd. Litho. London



# GLASGOW QUANTITY.

HOURLY DISTRIBUTION OF RAINFALL.  
IN THOUSANDTHS OF AN INCH  
BASED UPON THE RECORDS FOR THE  
20 YEARS.—1871—1890.

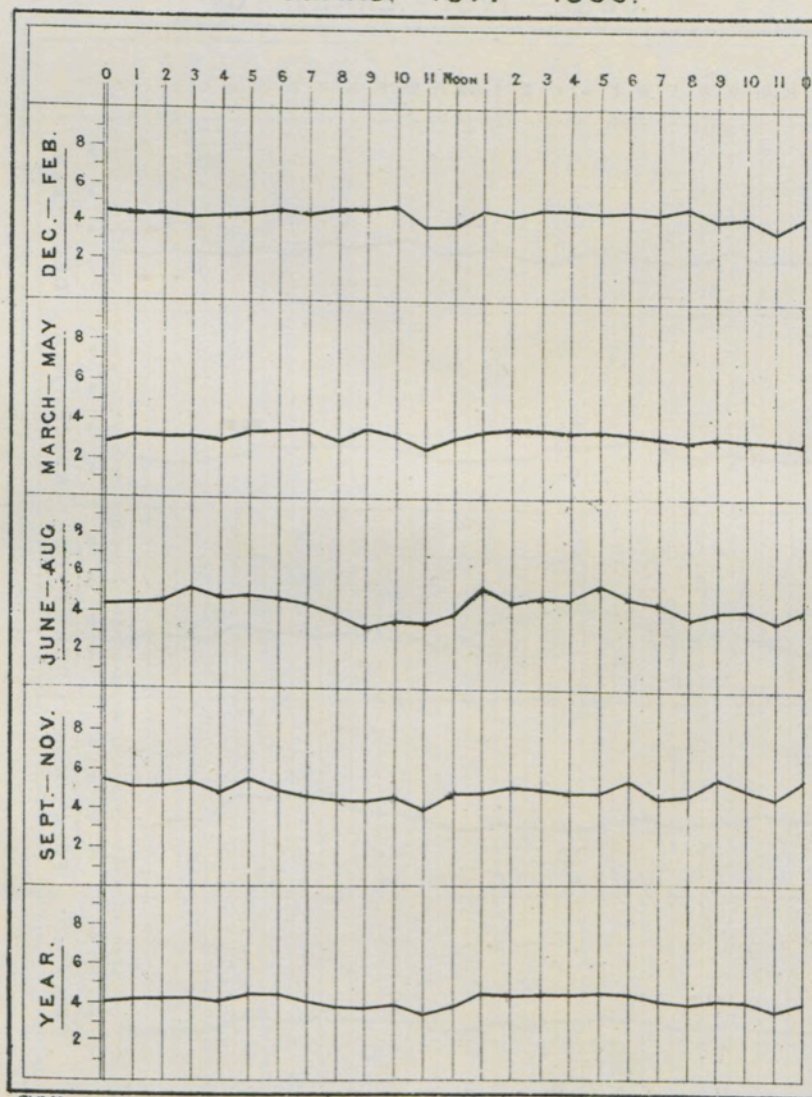


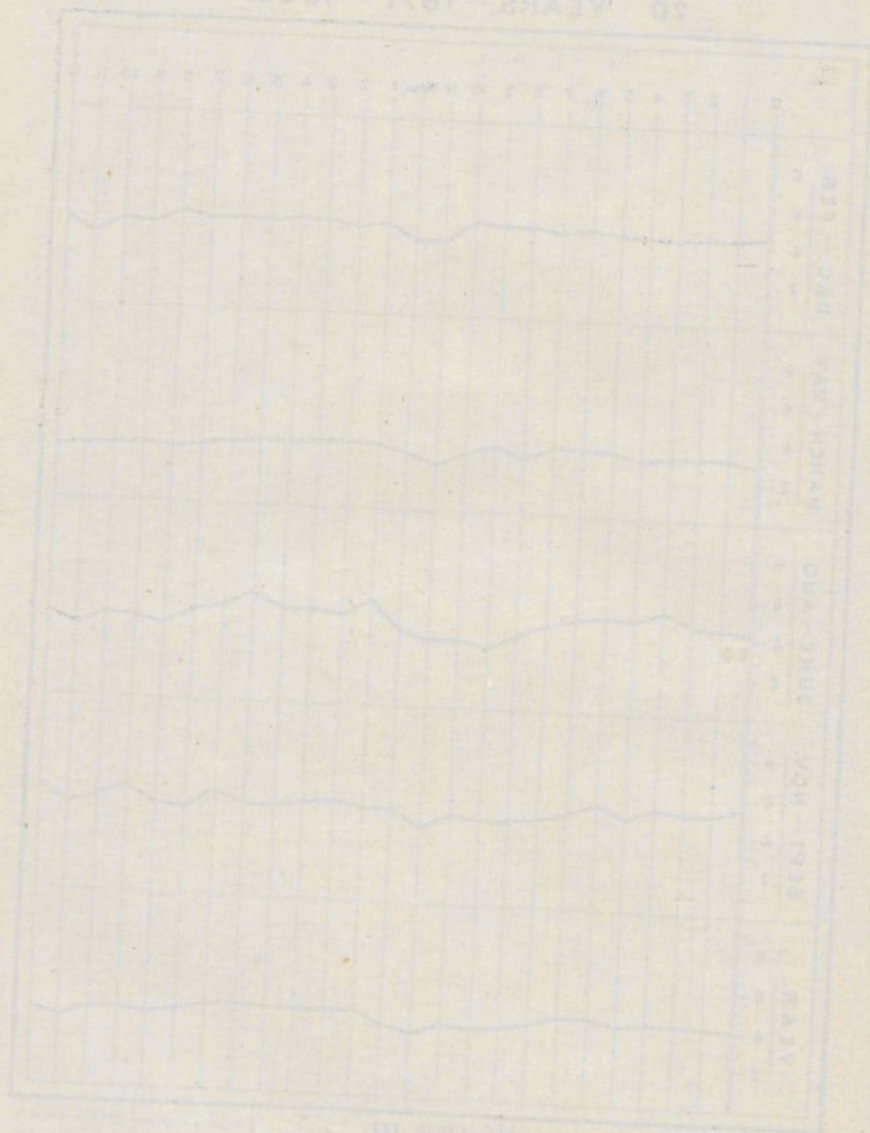
PLATE III.

E. Weller & Grahams Ltd. Litho. London.



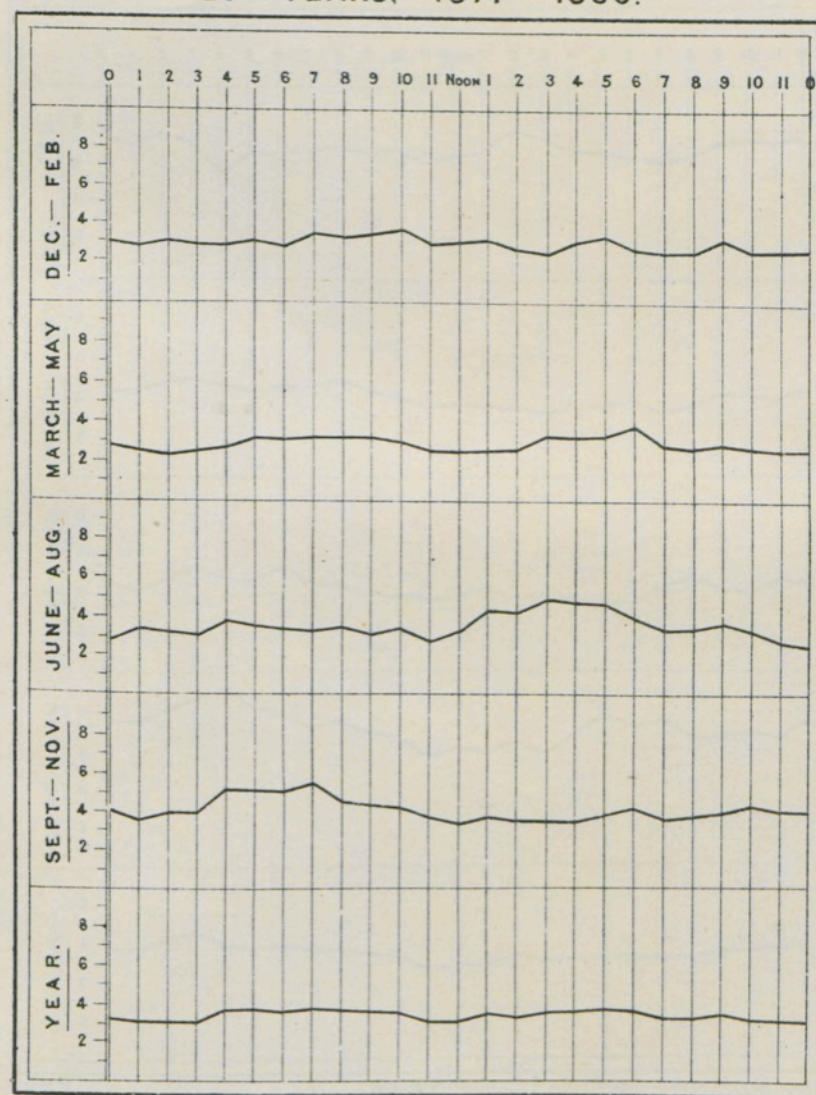
# GLASGOW QUANTITY.

HOURLY DISTRIBUTION OF RAINFALL  
IN THOUSANDTHS OF AN INCH  
BASED UPON THE RECORDS FOR THE  
20 YEARS—1871—1890.



# ABERDEEN QUANTITY.

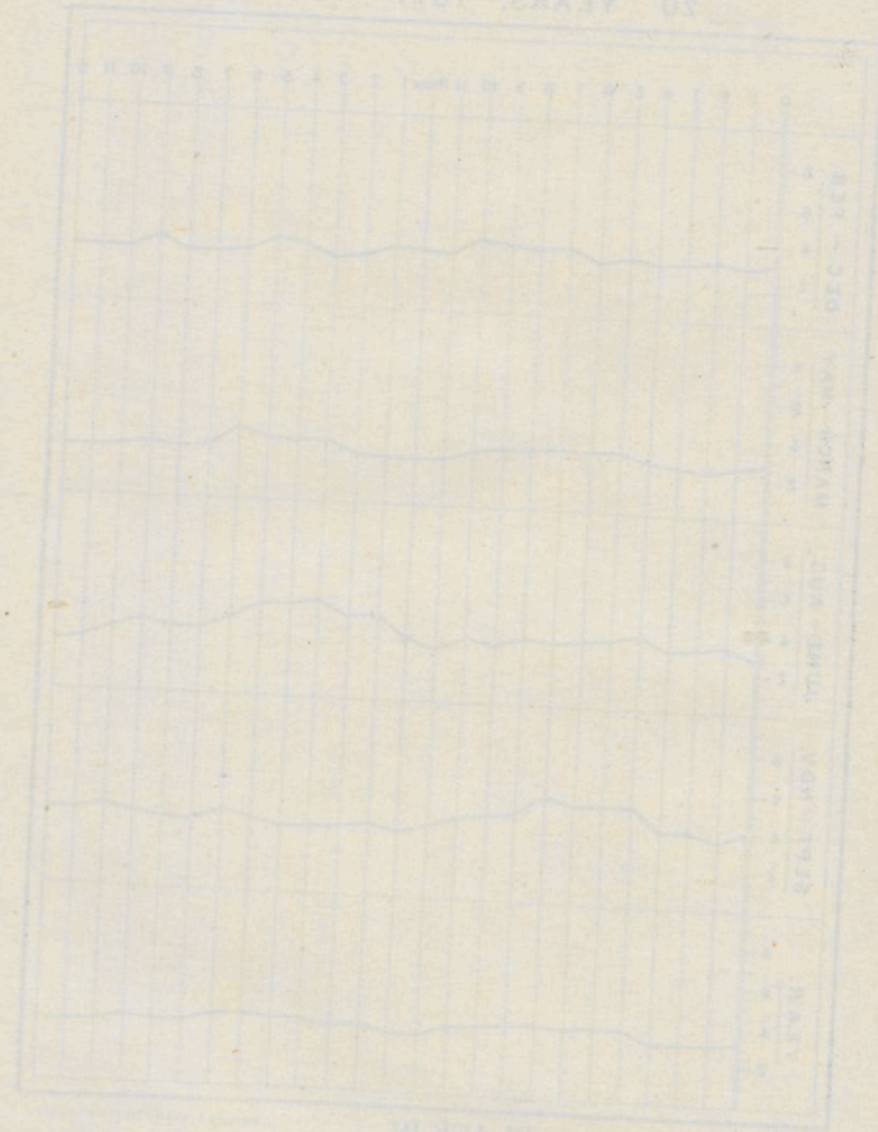
HOURLY DISTRIBUTION OF RAINFALL.  
IN THOUSANDTHS OF AN INCH  
BASED UPON THE RECORDS FOR THE  
20 YEARS,—1871—1890.





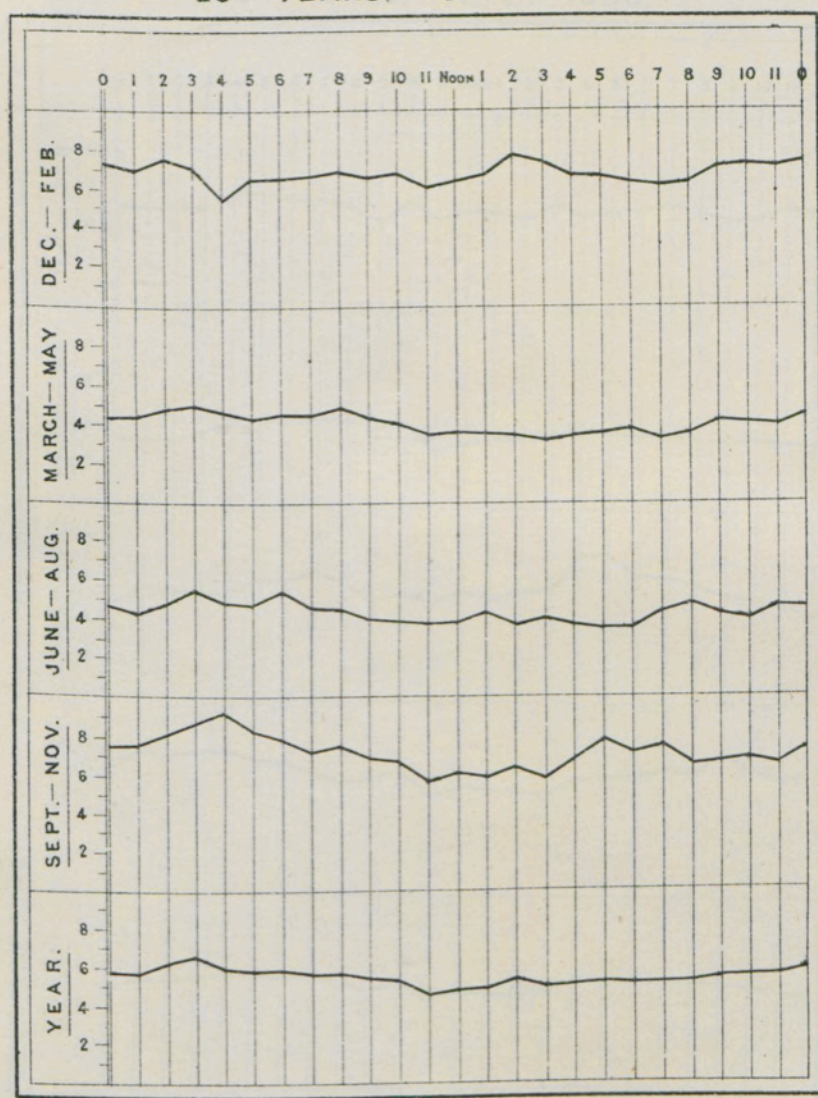
# ABERDEEN QUANTITY

HOURLY DISTRIBUTION OF RAINFALL  
IN THOUSANDTHS OF AN INCH  
BASED UPON THE RECORDS FOR THE  
20 YEARS—1871—1890



# FALMOUTH QUANTITY.

HOURLY DISTRIBUTION OF RAINFALL.  
IN THOUSANDTHS OF AN INCH  
BASED UPON THE RECORDS FOR THE  
20 YEARS.—1871—1890.





# STONYHURST QUANTITY.

HOURLY DISTRIBUTION OF RAINFALL.  
IN THOUSANDTHS OF AN INCH  
BASED UPON THE RECORDS FOR THE  
20 YEARS.—1871—1890.

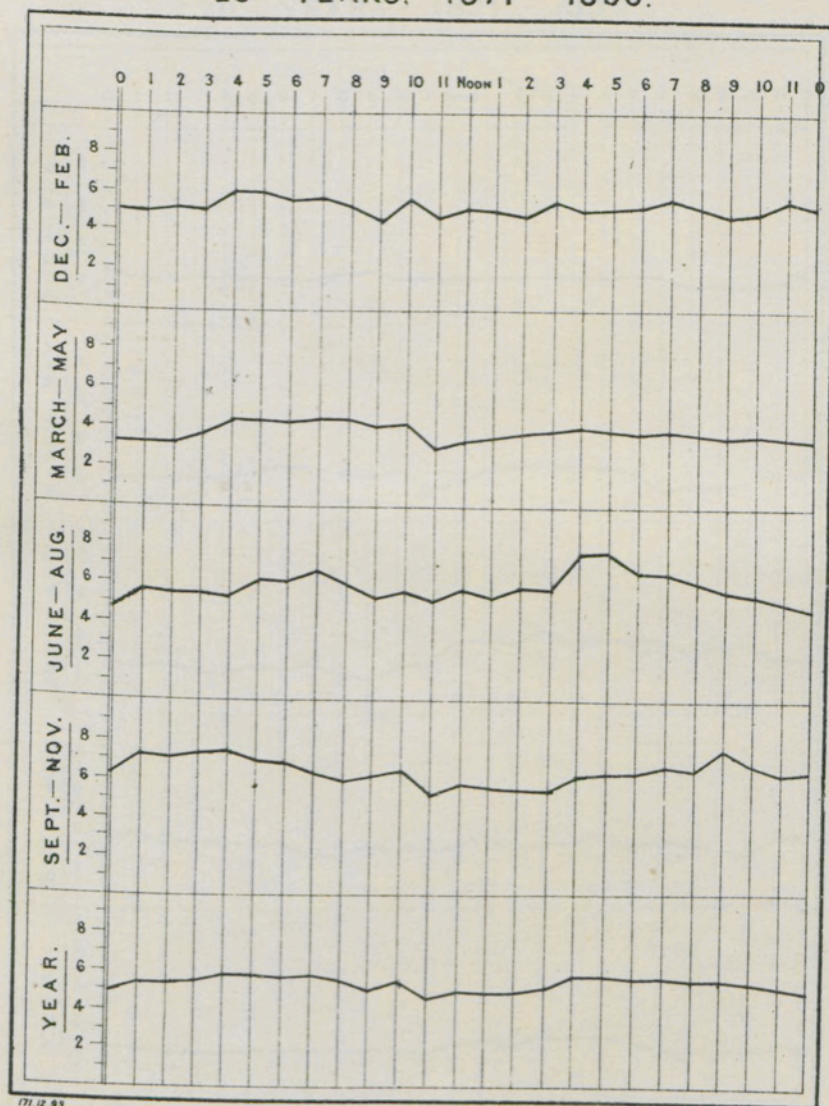


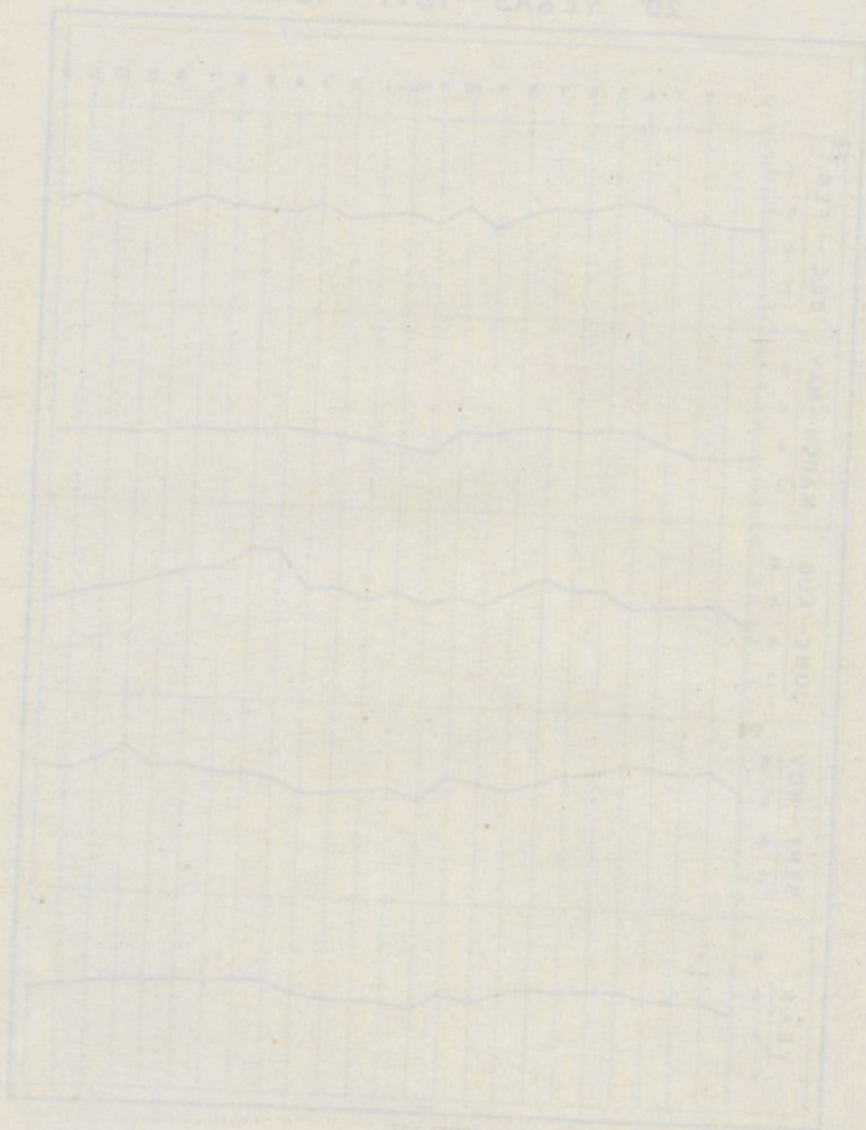
PLATE VI.

E. Weiler & Grahams Ltd. Litho. London.



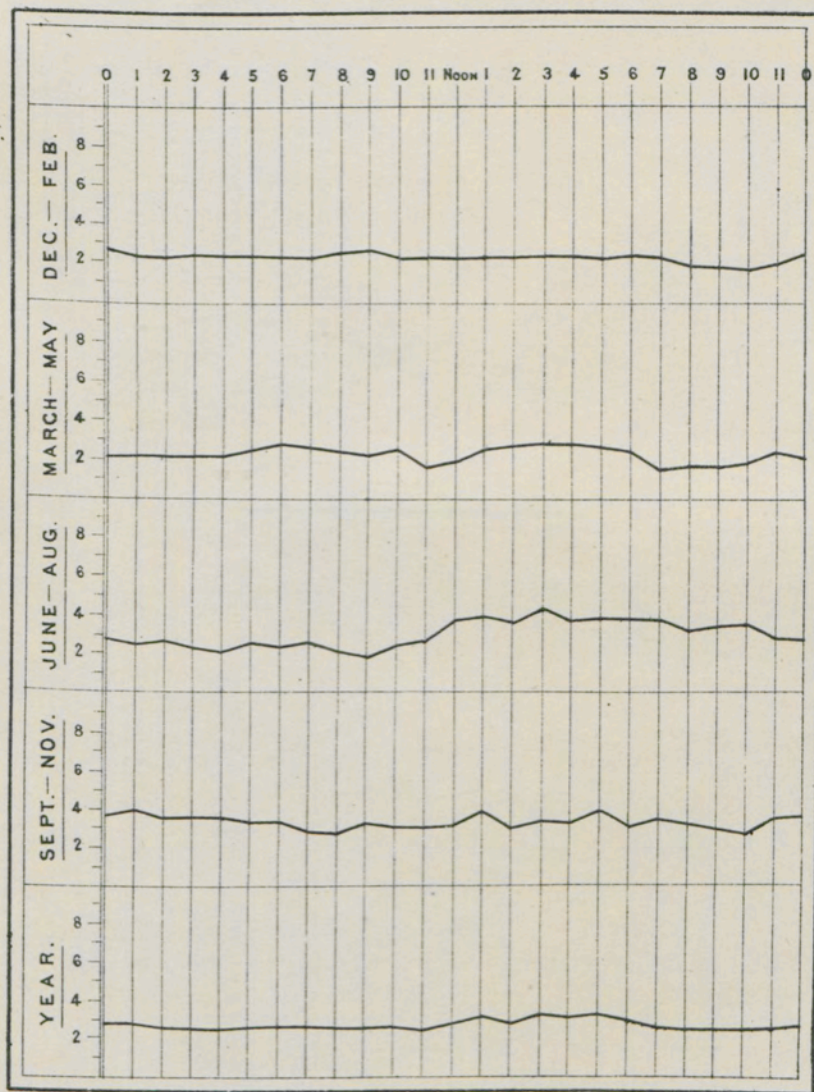
STONYHURST QUANTITY

HOURLY DISTRIBUTION OF RAINFALL  
IN THOUSANDTHS OF AN INCH  
BASED UPON THE RECORDS FOR THE  
20 YEARS 1871-1890



# KEW QUANTITY.

HOURLY DISTRIBUTION OF RAINFALL.  
IN THOUSANDTHS OF AN INCH  
BASED UPON THE RECORDS FOR THE  
20 YEARS.—1871—1890.



171.12.59

PLATE VII.

E. Weller & Grahams Ltd. Litho. London.



These figures are then divided, in each case, and for each month, by the actual number of hours available.

Thus, taking the instance above cited, Valencia in January, there are 581 days available and at 1 h. a.m. there were 159 instances of rain being recorded, now  $159 \frac{100}{581} = 27.36$  and this is the required frequency for that hour. All the other hours have been similarly treated, and the resulting figures are given in Table V.

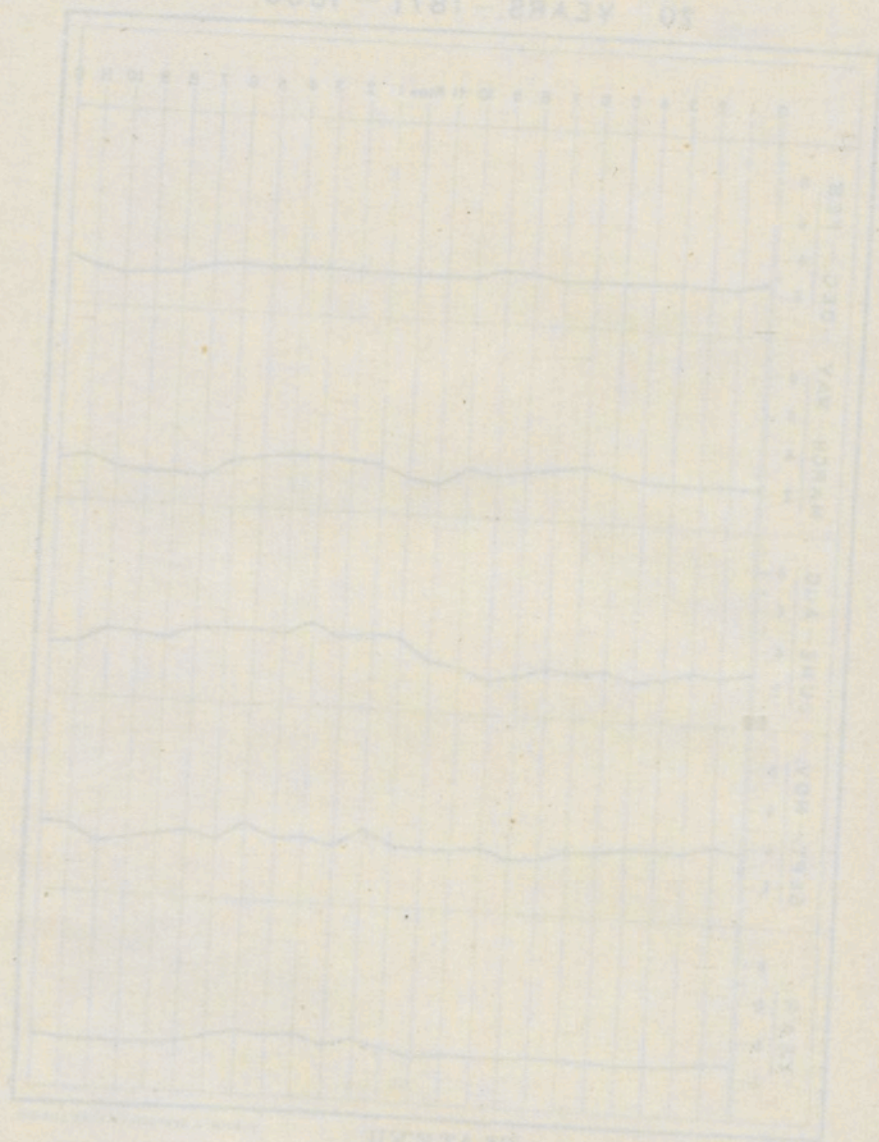




TABLE  
FREQUENCY of the OCCURRENCE of RAIN  
Expressed in Percentages.—

## VALENCIA.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
January ..	$\frac{0}{27} \frac{4}{4}$	$\frac{0}{27} \frac{0}{0}$	$\frac{0}{30} \frac{8}{8}$	$\frac{0}{31} \frac{8}{8}$	$\frac{0}{36} \frac{5}{5}$	$\frac{0}{34} \frac{3}{3}$	$\frac{0}{31} \frac{8}{8}$	$\frac{0}{32} \frac{9}{9}$	$\frac{0}{32} \frac{0}{0}$	$\frac{0}{29} \frac{4}{4}$	$\frac{0}{20} \frac{3}{3}$
February ..	$\frac{0}{30} \frac{8}{8}$	$\frac{0}{33} \frac{3}{3}$	$\frac{0}{34} \frac{1}{1}$	$\frac{0}{33} \frac{3}{3}$	$\frac{0}{34} \frac{7}{7}$	$\frac{0}{32} \frac{5}{5}$	$\frac{0}{32} \frac{3}{3}$	$\frac{0}{31} \frac{0}{0}$	$\frac{0}{32} \frac{3}{3}$	$\frac{0}{24} \frac{6}{6}$	$\frac{0}{23} \frac{0}{0}$
March.. ..	$\frac{0}{22} \frac{9}{9}$	$\frac{0}{23} \frac{1}{1}$	$\frac{0}{23} \frac{8}{8}$	$\frac{0}{23} \frac{1}{1}$	$\frac{0}{26} \frac{5}{5}$	$\frac{0}{27} \frac{3}{3}$	$\frac{0}{27} \frac{8}{8}$	$\frac{0}{28} \frac{5}{5}$	$\frac{0}{26} \frac{5}{5}$	$\frac{0}{21} \frac{1}{1}$	$\frac{0}{14} \frac{8}{8}$
April .. ..	$\frac{0}{20} \frac{8}{8}$	$\frac{0}{20} \frac{5}{5}$	$\frac{0}{22} \frac{4}{4}$	$\frac{0}{23} \frac{3}{3}$	$\frac{0}{24} \frac{7}{7}$	$\frac{0}{22} \frac{4}{4}$	$\frac{0}{24} \frac{3}{3}$	$\frac{0}{23} \frac{3}{3}$	$\frac{0}{22} \frac{2}{2}$	$\frac{0}{18} \frac{2}{2}$	$\frac{0}{14} \frac{3}{3}$
May .. ..	$\frac{0}{18} \frac{7}{7}$	$\frac{0}{18} \frac{2}{2}$	$\frac{0}{20} \frac{8}{8}$	$\frac{0}{22} \frac{1}{1}$	$\frac{0}{21} \frac{6}{6}$	$\frac{0}{21} \frac{5}{5}$	$\frac{0}{20} \frac{4}{4}$	$\frac{0}{19} \frac{4}{4}$	$\frac{0}{20} \frac{1}{1}$	$\frac{0}{16} \frac{5}{5}$	$\frac{0}{9} \frac{0}{0}$
June .. ..	$\frac{0}{21} \frac{4}{4}$	$\frac{0}{20} \frac{7}{7}$	$\frac{0}{21} \frac{2}{2}$	$\frac{0}{21} \frac{0}{0}$	$\frac{0}{24} \frac{9}{9}$	$\frac{0}{24} \frac{6}{6}$	$\frac{0}{21} \frac{9}{9}$	$\frac{0}{19} \frac{4}{4}$	$\frac{0}{20} \frac{5}{5}$	$\frac{0}{15} \frac{7}{7}$	$\frac{0}{10} \frac{3}{3}$
July .. ..	$\frac{0}{22} \frac{4}{4}$	$\frac{0}{22} \frac{9}{9}$	$\frac{0}{25} \frac{5}{5}$	$\frac{0}{23} \frac{5}{5}$	$\frac{0}{23} \frac{5}{5}$	$\frac{0}{25} \frac{5}{5}$	$\frac{0}{25} \frac{5}{5}$	$\frac{0}{25} \frac{8}{8}$	$\frac{0}{26} \frac{0}{0}$	$\frac{0}{17} \frac{0}{0}$	$\frac{0}{11} \frac{9}{9}$
August .. ..	$\frac{0}{20} \frac{4}{4}$	$\frac{0}{21} \frac{9}{9}$	$\frac{0}{23} \frac{0}{0}$	$\frac{0}{23} \frac{7}{7}$	$\frac{0}{28} \frac{9}{9}$	$\frac{0}{30} \frac{2}{2}$	$\frac{0}{28} \frac{8}{8}$	$\frac{0}{23} \frac{4}{4}$	$\frac{0}{22} \frac{7}{7}$	$\frac{0}{17} \frac{8}{8}$	$\frac{0}{11} \frac{8}{8}$
September ..	$\frac{0}{23} \frac{4}{4}$	$\frac{0}{23} \frac{2}{2}$	$\frac{0}{21} \frac{2}{2}$	$\frac{0}{24} \frac{5}{5}$	$\frac{0}{26} \frac{2}{2}$	$\frac{0}{24} \frac{2}{2}$	$\frac{0}{25} \frac{7}{7}$	$\frac{0}{25} \frac{9}{9}$	$\frac{0}{24} \frac{5}{5}$	$\frac{0}{18} \frac{8}{8}$	$\frac{0}{13} \frac{1}{1}$
October ..	$\frac{0}{26} \frac{8}{8}$	$\frac{0}{26} \frac{0}{0}$	$\frac{0}{27} \frac{0}{0}$	$\frac{0}{30} \frac{9}{9}$	$\frac{0}{32} \frac{2}{2}$	$\frac{0}{29} \frac{1}{1}$	$\frac{0}{27} \frac{5}{5}$	$\frac{0}{26} \frac{8}{8}$	$\frac{0}{26} \frac{0}{0}$	$\frac{0}{23} \frac{9}{9}$	$\frac{0}{17} \frac{5}{5}$
November ..	$\frac{0}{28} \frac{0}{0}$	$\frac{0}{26} \frac{5}{5}$	$\frac{0}{27} \frac{0}{0}$	$\frac{0}{30} \frac{9}{9}$	$\frac{0}{32} \frac{8}{8}$	$\frac{0}{31} \frac{3}{3}$	$\frac{0}{32} \frac{3}{3}$	$\frac{0}{31} \frac{8}{8}$	$\frac{0}{31} \frac{4}{4}$	$\frac{0}{29} \frac{9}{9}$	$\frac{0}{20} \frac{4}{4}$
December ..	$\frac{0}{23} \frac{1}{1}$	$\frac{0}{24} \frac{2}{2}$	$\frac{0}{24} \frac{1}{1}$	$\frac{0}{30} \frac{1}{1}$	$\frac{0}{30} \frac{4}{4}$	$\frac{0}{34} \frac{2}{2}$	$\frac{0}{32} \frac{4}{4}$	$\frac{0}{32} \frac{2}{2}$	$\frac{0}{30} \frac{4}{4}$	$\frac{0}{30} \frac{0}{0}$	$\frac{0}{23} \frac{9}{9}$
Year .. ..	$\frac{0}{23} \frac{84}{84}$	$\frac{0}{23} \frac{96}{96}$	$\frac{0}{25} \frac{08}{08}$	$\frac{0}{26} \frac{52}{52}$	$\frac{0}{28} \frac{58}{58}$	$\frac{0}{28} \frac{09}{09}$	$\frac{0}{27} \frac{56}{56}$	$\frac{0}{26} \frac{70}{70}$	$\frac{0}{26} \frac{22}{22}$	$\frac{0}{21} \frac{91}{91}$	$\frac{0}{15} \frac{86}{86}$
Dec.-Feb. ..	$\frac{0}{27} \frac{10}{10}$	$\frac{0}{28} \frac{17}{17}$	$\frac{0}{29} \frac{67}{67}$	$\frac{0}{31} \frac{73}{73}$	$\frac{0}{33} \frac{87}{87}$	$\frac{0}{33} \frac{67}{67}$	$\frac{0}{32} \frac{17}{17}$	$\frac{0}{32} \frac{03}{03}$	$\frac{0}{31} \frac{57}{57}$	$\frac{0}{28} \frac{00}{00}$	$\frac{0}{22} \frac{40}{40}$
Mar.-May ..	$\frac{0}{20} \frac{80}{80}$	$\frac{0}{20} \frac{60}{60}$	$\frac{0}{22} \frac{33}{33}$	$\frac{0}{22} \frac{83}{83}$	$\frac{0}{24} \frac{27}{27}$	$\frac{0}{23} \frac{73}{73}$	$\frac{0}{24} \frac{17}{17}$	$\frac{0}{23} \frac{73}{73}$	$\frac{0}{22} \frac{93}{93}$	$\frac{0}{18} \frac{60}{60}$	$\frac{0}{12} \frac{70}{70}$
June-Aug. ..	$\frac{0}{21} \frac{40}{40}$	$\frac{0}{21} \frac{83}{83}$	$\frac{0}{23} \frac{23}{23}$	$\frac{0}{22} \frac{73}{73}$	$\frac{0}{25} \frac{77}{77}$	$\frac{0}{26} \frac{77}{77}$	$\frac{0}{25} \frac{40}{40}$	$\frac{0}{22} \frac{87}{87}$	$\frac{0}{23} \frac{07}{07}$	$\frac{0}{16} \frac{83}{83}$	$\frac{0}{11} \frac{33}{33}$
Sept.-Nov. ..	$\frac{0}{26} \frac{07}{07}$	$\frac{0}{25} \frac{23}{23}$	$\frac{0}{25} \frac{07}{07}$	$\frac{0}{28} \frac{77}{77}$	$\frac{0}{30} \frac{40}{40}$	$\frac{0}{28} \frac{20}{20}$	$\frac{0}{28} \frac{50}{50}$	$\frac{0}{28} \frac{17}{17}$	$\frac{0}{27} \frac{30}{30}$	$\frac{0}{24} \frac{20}{20}$	$\frac{0}{17} \frac{00}{00}$

## ARMAGH.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
January ..	$\frac{0}{13} \frac{0}{0}$	$\frac{0}{12} \frac{6}{6}$	$\frac{0}{14} \frac{2}{2}$	$\frac{0}{13} \frac{0}{0}$	$\frac{0}{12} \frac{2}{2}$	$\frac{0}{12} \frac{0}{0}$	$\frac{0}{14} \frac{4}{4}$	$\frac{0}{13} \frac{8}{8}$	$\frac{0}{10} \frac{8}{8}$	$\frac{0}{14} \frac{2}{2}$	$\frac{0}{11} \frac{4}{4}$
February ..	$\frac{0}{11} \frac{3}{3}$	$\frac{0}{13} \frac{4}{4}$	$\frac{0}{14} \frac{8}{8}$	$\frac{0}{12} \frac{5}{5}$	$\frac{0}{12} \frac{6}{6}$	$\frac{0}{12} \frac{3}{3}$	$\frac{0}{12} \frac{5}{5}$	$\frac{0}{11} \frac{5}{5}$	$\frac{0}{12} \frac{3}{3}$	$\frac{0}{15} \frac{5}{5}$	$\frac{0}{9} \frac{6}{6}$
March.. ..	$\frac{0}{10} \frac{1}{1}$	$\frac{0}{10} \frac{6}{6}$	$\frac{0}{11} \frac{3}{3}$	$\frac{0}{11} \frac{3}{3}$	$\frac{0}{10} \frac{6}{6}$	$\frac{0}{10} \frac{3}{3}$	$\frac{0}{12} \frac{4}{4}$	$\frac{0}{14} \frac{3}{3}$	$\frac{0}{16} \frac{0}{0}$	$\frac{0}{17} \frac{2}{2}$	$\frac{0}{11} \frac{8}{8}$
April .. ..	$\frac{0}{10} \frac{4}{4}$	$\frac{0}{12} \frac{8}{8}$	$\frac{0}{11} \frac{4}{4}$	$\frac{0}{12} \frac{2}{2}$	$\frac{0}{10} \frac{7}{7}$	$\frac{0}{10} \frac{9}{9}$	$\frac{0}{13} \frac{3}{3}$	$\frac{0}{14} \frac{1}{1}$	$\frac{0}{11} \frac{7}{7}$	$\frac{0}{12} \frac{1}{1}$	$\frac{0}{9} \frac{9}{9}$
May .. ..	$\frac{0}{9} \frac{8}{8}$	$\frac{0}{10} \frac{8}{8}$	$\frac{0}{11} \frac{4}{4}$	$\frac{0}{12} \frac{1}{1}$	$\frac{0}{13} \frac{1}{1}$	$\frac{0}{11} \frac{1}{1}$	$\frac{0}{12} \frac{1}{1}$	$\frac{0}{10} \frac{4}{4}$	$\frac{0}{9} \frac{0}{0}$	$\frac{0}{13} \frac{1}{1}$	$\frac{0}{12} \frac{7}{7}$
June .. ..	$\frac{0}{10} \frac{9}{9}$	$\frac{0}{10} \frac{6}{6}$	$\frac{0}{10} \frac{2}{2}$	$\frac{0}{10} \frac{9}{9}$	$\frac{0}{11} \frac{6}{6}$	$\frac{0}{9} \frac{7}{7}$	$\frac{0}{10} \frac{1}{1}$	$\frac{0}{10} \frac{6}{6}$	$\frac{0}{9} \frac{4}{4}$	$\frac{0}{11} \frac{1}{1}$	$\frac{0}{9} \frac{4}{4}$
July .. ..	$\frac{0}{8} \frac{8}{8}$	$\frac{0}{11} \frac{0}{0}$	$\frac{0}{10} \frac{6}{6}$	$\frac{0}{11} \frac{5}{5}$	$\frac{0}{12} \frac{3}{3}$	$\frac{0}{12} \frac{1}{1}$	$\frac{0}{12} \frac{9}{9}$	$\frac{0}{10} \frac{5}{5}$	$\frac{0}{11} \frac{6}{6}$	$\frac{0}{12} \frac{3}{3}$	$\frac{0}{12} \frac{1}{1}$
August .. ..	$\frac{0}{11} \frac{7}{7}$	$\frac{0}{10} \frac{0}{0}$	$\frac{0}{10} \frac{0}{0}$	$\frac{0}{9} \frac{8}{8}$	$\frac{0}{10} \frac{7}{7}$	$\frac{0}{11} \frac{9}{9}$	$\frac{0}{12} \frac{0}{0}$	$\frac{0}{9} \frac{8}{8}$	$\frac{0}{9} \frac{6}{6}$	$\frac{0}{14} \frac{5}{5}$	$\frac{0}{10} \frac{5}{5}$
September ..	$\frac{0}{12} \frac{1}{1}$	$\frac{0}{12} \frac{8}{8}$	$\frac{0}{15} \frac{0}{0}$	$\frac{0}{15} \frac{2}{2}$	$\frac{0}{16} \frac{3}{3}$	$\frac{0}{14} \frac{0}{0}$	$\frac{0}{13} \frac{3}{3}$	$\frac{0}{12} \frac{5}{5}$	$\frac{0}{12} \frac{0}{0}$	$\frac{0}{11} \frac{1}{1}$	$\frac{0}{10} \frac{3}{3}$
October ..	$\frac{0}{14} \frac{4}{4}$	$\frac{0}{15} \frac{0}{0}$	$\frac{0}{14} \frac{9}{9}$	$\frac{0}{15} \frac{4}{4}$	$\frac{0}{15} \frac{0}{0}$	$\frac{0}{15} \frac{0}{0}$	$\frac{0}{15} \frac{4}{4}$	$\frac{0}{15} \frac{7}{7}$	$\frac{0}{15} \frac{8}{8}$	$\frac{0}{14} \frac{5}{5}$	$\frac{0}{12} \frac{4}{4}$
November ..	$\frac{0}{12} \frac{3}{3}$	$\frac{0}{15} \frac{4}{4}$	$\frac{0}{13} \frac{1}{1}$	$\frac{0}{13} \frac{8}{8}$	$\frac{0}{14} \frac{7}{7}$	$\frac{0}{16} \frac{3}{3}$	$\frac{0}{17} \frac{5}{5}$	$\frac{0}{14} \frac{8}{8}$	$\frac{0}{14} \frac{7}{7}$	$\frac{0}{15} \frac{7}{7}$	$\frac{0}{14} \frac{3}{3}$
December ..	$\frac{0}{13} \frac{8}{8}$	$\frac{0}{13} \frac{5}{5}$	$\frac{0}{14} \frac{2}{2}$	$\frac{0}{13} \frac{6}{6}$	$\frac{0}{14} \frac{4}{4}$	$\frac{0}{12} \frac{1}{1}$	$\frac{0}{12} \frac{9}{9}$	$\frac{0}{12} \frac{5}{5}$	$\frac{0}{12} \frac{1}{1}$	$\frac{0}{13} \frac{1}{1}$	$\frac{0}{13} \frac{5}{5}$
Year .. ..	$\frac{0}{11} \frac{55}{55}$	$\frac{0}{12} \frac{38}{38}$	$\frac{0}{12} \frac{59}{59}$	$\frac{0}{12} \frac{61}{61}$	$\frac{0}{12} \frac{85}{85}$	$\frac{0}{12} \frac{36}{36}$	$\frac{0}{13} \frac{23}{23}$	$\frac{0}{12} \frac{54}{54}$	$\frac{0}{12} \frac{08}{08}$	$\frac{0}{13} \frac{70}{70}$	$\frac{0}{11} \frac{49}{49}$
Dec.-Feb. ..	$\frac{0}{12} \frac{70}{70}$	$\frac{0}{13} \frac{17}{17}$	$\frac{0}{14} \frac{40}{40}$	$\frac{0}{13} \frac{03}{03}$	$\frac{0}{13} \frac{07}{07}$	$\frac{0}{12} \frac{33}{33}$	$\frac{0}{13} \frac{27}{27}$	$\frac{0}{12} \frac{60}{60}$	$\frac{0}{11} \frac{73}{73}$	$\frac{0}{14} \frac{27}{27}$	$\frac{0}{11} \frac{50}{50}$
Mar.-May ..	$\frac{0}{10} \frac{10}{10}$	$\frac{0}{11} \frac{40}{40}$	$\frac{0}{11} \frac{37}{37}$	$\frac{0}{11} \frac{87}{87}$	$\frac{0}{11} \frac{47}{47}$	$\frac{0}{10} \frac{77}{77}$	$\frac{0}{12} \frac{60}{60}$	$\frac{0}{12} \frac{93}{93}$	$\frac{0}{12} \frac{23}{23}$	$\frac{0}{14} \frac{13}{13}$	$\frac{0}{11} \frac{47}{47}$
June-Aug. ..	$\frac{0}{10} \frac{47}{47}$	$\frac{0}{10} \frac{53}{53}$	$\frac{0}{10} \frac{27}{27}$	$\frac{0}{10} \frac{73}{73}$	$\frac{0}{11} \frac{53}{53}$	$\frac{0}{11} \frac{23}{23}$	$\frac{0}{11} \frac{67}{67}$	$\frac{0}{10} \frac{30}{30}$	$\frac{0}{10} \frac{20}{20}$	$\frac{0}{12} \frac{63}{63}$	$\frac{0}{10} \frac{67}{67}$
Sept.-Nov. ..	$\frac{0}{12} \frac{93}{93}$	$\frac{0}{14} \frac{40}{40}$	$\frac{0}{14} \frac{33}{33}$	$\frac{0}{14} \frac{80}{80}$	$\frac{0}{15} \frac{33}{33}$	$\frac{0}{15} \frac{10}{10}$	$\frac{0}{15} \frac{40}{40}$	$\frac{0}{14} \frac{33}{33}$	$\frac{0}{14} \frac{17}{17}$	$\frac{0}{13} \frac{77}{77}$	$\frac{0}{12} \frac{33}{33}$

## V.

during the TWENTY YEARS 1871-1890.  
(100 = Continuous Rain).

## VALENCIA.

VALENCIA.													Midt.
Noon.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.		
$\frac{0}{21} \frac{3}{3}$	$\frac{0}{23} \frac{6}{6}$	$\frac{0}{26} \frac{9}{9}$	$\frac{0}{23} \frac{9}{9}$	$\frac{0}{24} \frac{1}{1}$	$\frac{0}{23} \frac{8}{8}$	$\frac{0}{26} \frac{0}{0}$	$\frac{0}{29} \frac{4}{4}$	$\frac{0}{28} \frac{7}{7}$	$\frac{0}{30} \frac{6}{6}$	$\frac{0}{29} \frac{8}{8}$	$\frac{0}{28} \frac{4}{4}$	$\frac{0}{29} \frac{8}{8}$	
21'2	21'6	21'8	23'2	23'6	23'4	23'6	26'6	27'6	25'2	28'2	30'6	30'8	
13'9	17'0	19'7	17'0	18'4	15'5	17'7	18'2	20'0	20'2	21'3	20'4	20'0	
12'3	12'9	15'2	12'7	15'2	17'3	17'3	16'8	20'5	19'8	18'7	19'8	17'6	
12'3	13'5	14'3	11'6	12'6	12'9	12'6	11'1	16'2	14'7	15'5	13'6	18'2	
9'3	9'8	9'9	10'9	9'6	12'6	11'8	12'3	15'2	14'3	16'5	18'2	20'0	
13'5	14'9	16'2	13'1	15'7	14'8	16'1	14'8	17'5	18'8	20'9	20'3	20'8	
14'2	13'9	12'4	11'4	12'9	14'5	16'3	16'3	15'5	17'5	18'5	16'5	19'0	
13'8	13'4	14'6	14'1	14'5	16'3	18'3	21'2	19'0	20'2	20'7	19'7	20'5	
18'6	19'4	17'0	19'1	20'1	22'9	22'4	21'9	24'2	23'0	25'2	27'1	25'7	
17'9	21'8	20'9	22'5	23'1	25'3	25'8	25'0	24'3	25'5	26'5	28'2	27'2	
22'6	23'1	24'1	26'0	23'4	24'5	26'4	27'5	26'2	26'2	27'2	26'5	24'7	
15'91	17'08	17'75	17'13	17'77	18'65	19'53	20'09	21'24	21'33	22'42	22'44	22'86	
21'70	22'77	24'27	24'37	23'70	23'90	25'33	27'83	27'50	27'33	28'40	28'50	28'43	
12'83	14'47	16'40	13'77	15'40	15'23	15'87	15'37	18'90	18'23	18'50	17'93	18'60	
12'33	12'87	12'83	11'80	12'73	13'97	14'73	14'47	16'07	16'87	18'63	18'33	19'93	
16'77	18'20	17'50	18'57	19'23	21'50	22'17	22'70	22'50	22'90	24'13	25'00	24'47	



TABLE V.—  
FREQUENCY of the OCCURRENCE of RAIN  
Expressed in Percentages.—

## GLASGOW.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
January ..	21 <sup>0</sup> / <sub>7</sub>	19 <sup>0</sup> / <sub>7</sub>	21 <sup>0</sup> / <sub>0</sub>	21 <sup>0</sup> / <sub>7</sub>	20 <sup>0</sup> / <sub>8</sub>	20 <sup>0</sup> / <sub>6</sub>	22 <sup>0</sup> / <sub>3</sub>	19 <sup>0</sup> / <sub>7</sub>	18 <sup>0</sup> / <sub>7</sub>	21 <sup>0</sup> / <sub>7</sub>	13 <sup>0</sup> / <sub>7</sub>
February ..	17 <sup>2</sup> / <sub>2</sub>	14 <sup>1</sup> / <sub>1</sub>	15 <sup>4</sup> / <sub>4</sub>	16 <sup>2</sup> / <sub>2</sub>	18 <sup>6</sup> / <sub>6</sub>	17 <sup>6</sup> / <sub>6</sub>	17 <sup>2</sup> / <sub>2</sub>	17 <sup>0</sup> / <sub>0</sub>	17 <sup>4</sup> / <sub>4</sub>	19 <sup>1</sup> / <sub>1</sub>	11 <sup>5</sup> / <sub>5</sub>
March.. ..	13 <sup>2</sup> / <sub>2</sub>	16 <sup>2</sup> / <sub>2</sub>	16 <sup>9</sup> / <sub>9</sub>	15 <sup>4</sup> / <sub>4</sub>	14 <sup>9</sup> / <sub>9</sub>	16 <sup>5</sup> / <sub>5</sub>	14 <sup>5</sup> / <sub>5</sub>	13 <sup>6</sup> / <sub>6</sub>	15 <sup>6</sup> / <sub>6</sub>	17 <sup>1</sup> / <sub>1</sub>	11 <sup>5</sup> / <sub>5</sub>
April .. ..	10 <sup>9</sup> / <sub>9</sub>	11 <sup>8</sup> / <sub>8</sub>	13 <sup>6</sup> / <sub>6</sub>	13 <sup>8</sup> / <sub>8</sub>	13 <sup>5</sup> / <sub>5</sub>	11 <sup>8</sup> / <sub>8</sub>	10 <sup>8</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>1</sub>	11 <sup>3</sup> / <sub>3</sub>	12 <sup>6</sup> / <sub>6</sub>	7 <sup>1</sup> / <sub>1</sub>
May .. .. .	11 <sup>9</sup> / <sub>9</sub>	12 <sup>1</sup> / <sub>1</sub>	10 <sup>6</sup> / <sub>6</sub>	11 <sup>4</sup> / <sub>4</sub>	12 <sup>4</sup> / <sub>4</sub>	15 <sup>0</sup> / <sub>0</sub>	12 <sup>1</sup> / <sub>1</sub>	10 <sup>9</sup> / <sub>9</sub>	14 <sup>1</sup> / <sub>1</sub>	13 <sup>3</sup> / <sub>3</sub>	10 <sup>4</sup> / <sub>4</sub>
June .. .. .	12 <sup>0</sup> / <sub>0</sub>	12 <sup>9</sup> / <sub>9</sub>	12 <sup>5</sup> / <sub>5</sub>	12 <sup>7</sup> / <sub>7</sub>	11 <sup>7</sup> / <sub>7</sub>	12 <sup>9</sup> / <sub>9</sub>	13 <sup>4</sup> / <sub>4</sub>	9 <sup>5</sup> / <sub>5</sub>	8 <sup>3</sup> / <sub>3</sub>	9 <sup>5</sup> / <sub>5</sub>	7 <sup>1</sup> / <sub>1</sub>
July .. .. .	15 <sup>5</sup> / <sub>5</sub>	16 <sup>7</sup> / <sub>7</sub>	17 <sup>9</sup> / <sub>9</sub>	17 <sup>0</sup> / <sub>0</sub>	16 <sup>0</sup> / <sub>0</sub>	14 <sup>7</sup> / <sub>7</sub>	15 <sup>2</sup> / <sub>2</sub>	13 <sup>6</sup> / <sub>6</sub>	13 <sup>1</sup> / <sub>1</sub>	16 <sup>5</sup> / <sub>5</sub>	11 <sup>8</sup> / <sub>8</sub>
August .. ..	12 <sup>9</sup> / <sub>9</sub>	13 <sup>2</sup> / <sub>2</sub>	16 <sup>0</sup> / <sub>0</sub>	16 <sup>3</sup> / <sub>3</sub>	15 <sup>5</sup> / <sub>5</sub>	14 <sup>5</sup> / <sub>5</sub>	13 <sup>1</sup> / <sub>1</sub>	13 <sup>6</sup> / <sub>6</sub>	12 <sup>9</sup> / <sub>9</sub>	15 <sup>5</sup> / <sub>5</sub>	9 <sup>4</sup> / <sub>4</sub>
September ..	15 <sup>5</sup> / <sub>5</sub>	18 <sup>3</sup> / <sub>3</sub>	19 <sup>4</sup> / <sub>4</sub>	17 <sup>5</sup> / <sub>5</sub>	18 <sup>7</sup> / <sub>7</sub>	15 <sup>0</sup> / <sub>0</sub>	14 <sup>6</sup> / <sub>6</sub>	14 <sup>3</sup> / <sub>3</sub>	12 <sup>9</sup> / <sub>9</sub>	15 <sup>3</sup> / <sub>3</sub>	9 <sup>9</sup> / <sub>9</sub>
October .. .	18 <sup>2</sup> / <sub>2</sub>	18 <sup>2</sup> / <sub>2</sub>	18 <sup>8</sup> / <sub>8</sub>	18 <sup>8</sup> / <sub>8</sub>	18 <sup>8</sup> / <sub>8</sub>	20 <sup>3</sup> / <sub>3</sub>	19 <sup>6</sup> / <sub>6</sub>	17 <sup>5</sup> / <sub>5</sub>	14 <sup>9</sup> / <sub>9</sub>	18 <sup>0</sup> / <sub>0</sub>	10 <sup>9</sup> / <sub>9</sub>
November ..	17 <sup>4</sup> / <sub>4</sub>	16 <sup>5</sup> / <sub>5</sub>	17 <sup>2</sup> / <sub>2</sub>	19 <sup>8</sup> / <sub>8</sub>	19 <sup>4</sup> / <sub>4</sub>	19 <sup>1</sup> / <sub>1</sub>	15 <sup>6</sup> / <sub>6</sub>	15 <sup>8</sup> / <sub>8</sub>	16 <sup>8</sup> / <sub>8</sub>	18 <sup>2</sup> / <sub>2</sub>	12 <sup>5</sup> / <sub>5</sub>
December ..	15 <sup>9</sup> / <sub>9</sub>	17 <sup>8</sup> / <sub>8</sub>	16 <sup>6</sup> / <sub>6</sub>	15 <sup>7</sup> / <sub>7</sub>	16 <sup>2</sup> / <sub>2</sub>	16 <sup>1</sup> / <sub>1</sub>	16 <sup>8</sup> / <sub>8</sub>	15 <sup>6</sup> / <sub>6</sub>	16 <sup>2</sup> / <sub>2</sub>	19 <sup>0</sup> / <sub>0</sub>	12 <sup>5</sup> / <sub>5</sub>
Year .. .. .	15 <sup>19</sup> / <sub>19</sub>	15 <sup>63</sup> / <sub>63</sub>	16 <sup>33</sup> / <sub>33</sub>	16 <sup>36</sup> / <sub>36</sub>	16 <sup>38</sup> / <sub>38</sub>	16 <sup>18</sup> / <sub>18</sub>	15 <sup>43</sup> / <sub>43</sub>	14 <sup>35</sup> / <sub>35</sub>	14 <sup>35</sup> / <sub>35</sub>	16 <sup>32</sup> / <sub>32</sub>	10 <sup>69</sup> / <sub>69</sub>
Dec.-Feb. ..	18 <sup>27</sup> / <sub>27</sub>	17 <sup>20</sup> / <sub>20</sub>	17 <sup>67</sup> / <sub>67</sub>	17 <sup>87</sup> / <sub>87</sub>	18 <sup>53</sup> / <sub>53</sub>	18 <sup>10</sup> / <sub>10</sub>	18 <sup>77</sup> / <sub>77</sub>	17 <sup>43</sup> / <sub>43</sub>	17 <sup>43</sup> / <sub>43</sub>	19 <sup>93</sup> / <sub>93</sub>	12 <sup>57</sup> / <sub>57</sub>
Mar.-May ..	12 <sup>00</sup> / <sub>00</sub>	13 <sup>37</sup> / <sub>37</sub>	13 <sup>70</sup> / <sub>70</sub>	13 <sup>53</sup> / <sub>53</sub>	13 <sup>60</sup> / <sub>60</sub>	14 <sup>43</sup> / <sub>43</sub>	12 <sup>47</sup> / <sub>47</sub>	11 <sup>87</sup> / <sub>87</sub>	13 <sup>67</sup> / <sub>67</sub>	14 <sup>33</sup> / <sub>33</sub>	9 <sup>67</sup> / <sub>67</sub>
June-Aug. ..	13 <sup>47</sup> / <sub>47</sub>	14 <sup>27</sup> / <sub>27</sub>	15 <sup>47</sup> / <sub>47</sub>	15 <sup>33</sup> / <sub>33</sub>	14 <sup>40</sup> / <sub>40</sub>	14 <sup>03</sup> / <sub>03</sub>	13 <sup>90</sup> / <sub>90</sub>	12 <sup>23</sup> / <sub>23</sub>	11 <sup>43</sup> / <sub>43</sub>	13 <sup>83</sup> / <sub>83</sub>	9 <sup>43</sup> / <sub>43</sub>
Sept.-Nov. ..	17 <sup>03</sup> / <sub>03</sub>	17 <sup>67</sup> / <sub>67</sub>	18 <sup>47</sup> / <sub>47</sub>	18 <sup>70</sup> / <sub>70</sub>	18 <sup>97</sup> / <sub>97</sub>	18 <sup>13</sup> / <sub>13</sub>	16 <sup>60</sup> / <sub>60</sub>	15 <sup>87</sup> / <sub>87</sub>	14 <sup>87</sup> / <sub>87</sub>	17 <sup>17</sup> / <sub>17</sub>	11 <sup>10</sup> / <sub>10</sub>

## ABERDEEN.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
January ..	7 <sup>5</sup> / <sub>5</sub>	7 <sup>7</sup> / <sub>7</sub>	8 <sup>4</sup> / <sub>4</sub>	10 <sup>3</sup> / <sub>3</sub>	11 <sup>2</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>3</sub>	12 <sup>8</sup> / <sub>8</sub>	11 <sup>8</sup> / <sub>8</sub>	11 <sup>8</sup> / <sub>8</sub>	12 <sup>1</sup> / <sub>1</sub>	10 <sup>5</sup> / <sub>5</sub>
February ..	15 <sup>2</sup> / <sub>2</sub>	14 <sup>3</sup> / <sub>3</sub>	14 <sup>3</sup> / <sub>3</sub>	13 <sup>8</sup> / <sub>8</sub>	13 <sup>5</sup> / <sub>5</sub>	13 <sup>5</sup> / <sub>5</sub>	12 <sup>6</sup> / <sub>6</sub>	12 <sup>0</sup> / <sub>0</sub>	14 <sup>3</sup> / <sub>3</sub>	14 <sup>3</sup> / <sub>3</sub>	12 <sup>0</sup> / <sub>0</sub>
March.. ..	11 <sup>7</sup> / <sub>7</sub>	11 <sup>9</sup> / <sub>9</sub>	9 <sup>6</sup> / <sub>6</sub>	10 <sup>9</sup> / <sub>9</sub>	12 <sup>9</sup> / <sub>9</sub>	10 <sup>9</sup> / <sub>9</sub>	12 <sup>9</sup> / <sub>9</sub>	9 <sup>6</sup> / <sub>6</sub>	13 <sup>2</sup> / <sub>2</sub>	15 <sup>0</sup> / <sub>0</sub>	8 <sup>4</sup> / <sub>4</sub>
April .. ..	13 <sup>7</sup> / <sub>7</sub>	12 <sup>0</sup> / <sub>0</sub>	15 <sup>9</sup> / <sub>9</sub>	17 <sup>6</sup> / <sub>6</sub>	16 <sup>9</sup> / <sub>9</sub>	15 <sup>6</sup> / <sub>6</sub>	16 <sup>7</sup> / <sub>7</sub>	16 <sup>7</sup> / <sub>7</sub>	13 <sup>9</sup> / <sub>9</sub>	13 <sup>9</sup> / <sub>9</sub>	10 <sup>4</sup> / <sub>4</sub>
May .. .. .	10 <sup>5</sup> / <sub>5</sub>	8 <sup>6</sup> / <sub>6</sub>	8 <sup>7</sup> / <sub>7</sub>	11 <sup>7</sup> / <sub>7</sub>	10 <sup>0</sup> / <sub>0</sub>	11 <sup>0</sup> / <sub>0</sub>	10 <sup>7</sup> / <sub>7</sub>	9 <sup>4</sup> / <sub>4</sub>	10 <sup>2</sup> / <sub>2</sub>	7 <sup>4</sup> / <sub>4</sub>	8 <sup>3</sup> / <sub>3</sub>
June .. .. .	8 <sup>7</sup> / <sub>7</sub>	8 <sup>5</sup> / <sub>5</sub>	7 <sup>4</sup> / <sub>4</sub>	8 <sup>4</sup> / <sub>4</sub>	9 <sup>7</sup> / <sub>7</sub>	10 <sup>9</sup> / <sub>9</sub>	8 <sup>5</sup> / <sub>5</sub>	8 <sup>9</sup> / <sub>9</sub>	8 <sup>4</sup> / <sub>4</sub>	8 <sup>9</sup> / <sub>9</sub>	7 <sup>0</sup> / <sub>0</sub>
July .. .. .	11 <sup>7</sup> / <sub>7</sub>	11 <sup>3</sup> / <sub>3</sub>	12 <sup>2</sup> / <sub>2</sub>	11 <sup>7</sup> / <sub>7</sub>	13 <sup>3</sup> / <sub>3</sub>	12 <sup>8</sup> / <sub>8</sub>	10 <sup>7</sup> / <sub>7</sub>	9 <sup>7</sup> / <sub>7</sub>	9 <sup>2</sup> / <sub>2</sub>	11 <sup>0</sup> / <sub>0</sub>	9 <sup>7</sup> / <sub>7</sub>
August .. .	10 <sup>5</sup> / <sub>5</sub>	10 <sup>5</sup> / <sub>5</sub>	11 <sup>8</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>1</sub>	13 <sup>6</sup> / <sub>6</sub>	12 <sup>8</sup> / <sub>8</sub>	11 <sup>6</sup> / <sub>6</sub>	11 <sup>5</sup> / <sub>5</sub>	10 <sup>8</sup> / <sub>8</sub>	9 <sup>5</sup> / <sub>5</sub>	8 <sup>4</sup> / <sub>4</sub>
September ..	10 <sup>4</sup> / <sub>4</sub>	12 <sup>2</sup> / <sub>2</sub>	11 <sup>2</sup> / <sub>2</sub>	14 <sup>2</sup> / <sub>2</sub>	14 <sup>4</sup> / <sub>4</sub>	15 <sup>2</sup> / <sub>2</sub>	15 <sup>2</sup> / <sub>2</sub>	12 <sup>7</sup> / <sub>7</sub>	13 <sup>0</sup> / <sub>0</sub>	11 <sup>7</sup> / <sub>7</sub>	10 <sup>4</sup> / <sub>4</sub>
October .. .	13 <sup>7</sup> / <sub>7</sub>	15 <sup>3</sup> / <sub>3</sub>	16 <sup>8</sup> / <sub>8</sub>	17 <sup>8</sup> / <sub>8</sub>	19 <sup>0</sup> / <sub>0</sub>	20 <sup>0</sup> / <sub>0</sub>	21 <sup>5</sup> / <sub>5</sub>	18 <sup>0</sup> / <sub>0</sub>	18 <sup>0</sup> / <sub>0</sub>	16 <sup>7</sup> / <sub>7</sub>	10 <sup>4</sup> / <sub>4</sub>
November ..	17 <sup>3</sup> / <sub>3</sub>	17 <sup>3</sup> / <sub>3</sub>	18 <sup>4</sup> / <sub>4</sub>	19 <sup>6</sup> / <sub>6</sub>	18 <sup>7</sup> / <sub>7</sub>	18 <sup>6</sup> / <sub>6</sub>	19 <sup>8</sup> / <sub>8</sub>	15 <sup>6</sup> / <sub>6</sub>	16 <sup>1</sup> / <sub>1</sub>	18 <sup>4</sup> / <sub>4</sub>	13 <sup>0</sup> / <sub>0</sub>
December ..	10 <sup>0</sup> / <sub>0</sub>	10 <sup>5</sup> / <sub>5</sub>	12 <sup>5</sup> / <sub>5</sub>	12 <sup>0</sup> / <sub>0</sub>	13 <sup>5</sup> / <sub>5</sub>	12 <sup>5</sup> / <sub>5</sub>	15 <sup>8</sup> / <sub>8</sub>	15 <sup>5</sup> / <sub>5</sub>	15 <sup>0</sup> / <sub>0</sub>	16 <sup>8</sup> / <sub>8</sub>	12 <sup>0</sup> / <sub>0</sub>
Year .. .. .	11 <sup>74</sup> / <sub>74</sub>	11 <sup>68</sup> / <sub>68</sub>	12 <sup>27</sup> / <sub>27</sub>	13 <sup>26</sup> / <sub>26</sub>	13 <sup>89</sup> / <sub>89</sub>	13 <sup>84</sup> / <sub>84</sub>	14 <sup>07</sup> / <sub>07</sub>	12 <sup>62</sup> / <sub>62</sub>	12 <sup>83</sup> / <sub>83</sub>	12 <sup>98</sup> / <sub>98</sub>	10 <sup>04</sup> / <sub>04</sub>
Dec.-Feb. ..	10 <sup>90</sup> / <sub>90</sub>	10 <sup>83</sup> / <sub>83</sub>	11 <sup>73</sup> / <sub>73</sub>	12 <sup>03</sup> / <sub>03</sub>	12 <sup>73</sup> / <sub>73</sub>	12 <sup>77</sup> / <sub>77</sub>	13 <sup>73</sup> / <sub>73</sub>	13 <sup>10</sup> / <sub>10</sub>	13 <sup>70</sup> / <sub>70</sub>	14 <sup>40</sup> / <sub>40</sub>	11 <sup>50</sup> / <sub>50</sub>
Mar.-May ..	11 <sup>97</sup> / <sub>97</sub>	10 <sup>83</sup> / <sub>83</sub>	11 <sup>40</sup> / <sub>40</sub>	13 <sup>40</sup> / <sub>40</sub>	13 <sup>27</sup> / <sub>27</sub>	12 <sup>50</sup> / <sub>50</sub>	13 <sup>43</sup> / <sub>43</sub>	11 <sup>90</sup> / <sub>90</sub>	12 <sup>43</sup> / <sub>43</sub>	12 <sup>10</sup> / <sub>10</sub>	9 <sup>03</sup> / <sub>03</sub>
June-Aug. ..	10 <sup>30</sup> / <sub>30</sub>	10 <sup>10</sup> / <sub>10</sub>	10 <sup>47</sup> / <sub>47</sub>	10 <sup>40</sup> / <sub>40</sub>	12 <sup>20</sup> / <sub>20</sub>	12 <sup>17</sup> / <sub>17</sub>	10 <sup>27</sup> / <sub>27</sub>	10 <sup>03</sup> / <sub>03</sub>	9 <sup>47</sup> / <sub>47</sub>	9 <sup>80</sup> / <sub>80</sub>	8 <sup>37</sup> / <sub>37</sub>
Sept.-Nov. ..	13 <sup>80</sup> / <sub>80</sub>	14 <sup>93</sup> / <sub>93</sub>	15 <sup>47</sup> / <sub>47</sub>	17 <sup>20</sup> / <sub>20</sub>	17 <sup>37</sup> / <sub>37</sub>	17 <sup>93</sup> / <sub>93</sub>	18 <sup>83</sup> / <sub>83</sub>	15 <sup>43</sup> / <sub>43</sub>	15 <sup>70</sup> / <sub>70</sub>	15 <sup>60</sup> / <sub>60</sub>	11 <sup>27</sup> / <sub>27</sub>

continued.

during the TWENTY YEARS 1871-1890—continued.  
(100 = Continuous Rain).

## GLASGOW.

Noon.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Midt.
$\frac{0}{13}^9$	$\frac{0}{16}^7$	$\frac{0}{17}^1$	$\frac{0}{19}^3$	$\frac{0}{22}^3$	$\frac{0}{20}^2$	$\frac{0}{19}^5$	$\frac{0}{18}^9$	$\frac{0}{19}^9$	$\frac{0}{19}^5$	$\frac{0}{17}^3$	$\frac{0}{19}^7$	$\frac{0}{21}^3$
9'4	11'5	12'1	13'9	12'5	13'9	13'9	13'9	16'8	14'8	14'1	13'3	18'2
12'1	13'0	13'2	14'1	15'1	13'4	14'7	14'9	13'4	12'8	13'6	12'3	17'1
8'4	8'4	9'9	9'6	10'8	10'8	10'8	10'4	12'3	12'1	12'3	10'3	11'9
9'4	10'2	10'2	10'9	10'4	10'1	9'2	11'1	9'9	12'3	10'4	10'9	12'1
8'0	11'8	12'7	13'7	12'7	14'0	14'7	12'5	11'2	12'5	12'0	12'4	12'7
11'1	12'3	12'4	10'4	12'1	12'4	13'8	15'7	15'5	15'2	12'9	13'3	17'2
11'8	12'9	13'7	13'2	14'4	14'9	13'4	13'2	10'5	12'1	12'4	12'4	13'6
12'0	12'2	12'9	14'6	13'4	12'9	15'0	15'9	13'1	16'1	13'4	14'5	18'9
14'3	13'8	14'9	15'2	14'6	15'6	15'9	15'7	16'0	16'9	15'6	16'2	19'8
14'1	15'5	16'5	19'2	18'6	18'9	18'9	16'7	15'8	17'7	17'0	16'8	20'1
13'2	15'7	16'4	16'4	18'1	17'9	16'2	18'1	18'8	18'6	17'6	14'9	19'8
11'48	12'83	13'50	14'21	14'58	14'58	14'67	14'75	14'43	15'05	14'05	13'92	16'89
12'17	14'63	15'20	16'53	17'63	17'33	16'53	16'97	18'50	17'63	16'33	15'97	19'77
9'97	10'53	11'10	11'53	12'10	11'43	11'57	12'13	11'87	12'40	12'10	11'17	13'70
10'30	12'33	12'93	12'43	13'07	13'77	13'97	13'80	12'40	13'27	12'43	12'70	14'50
13'47	13'83	14'77	16'33	15'53	15'80	16'60	16'10	14'97	16'90	15'33	15'83	19'60



TABLE V.—  
FREQUENCY of the OCCURRENCE OF RAIN  
Expressed in Percentages.—

## FALMOUTH.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
January ..	23'2	25'0	24'3	22'7	21'2	24'0	23'0	23'0	24'1	23'9	18'8
February ..	17'9	21'6	22'2	22'4	20'9	18'0	20'9	23'1	19'2	20'7	16'7
March ..	16'0	16'4	17'6	18'8	17'7	16'0	15'0	15'0	15'3	13'3	13'9
April ..	15'6	16'0	16'3	16'6	17'0	15'3	16'0	16'5	15'6	16'1	12'1
May ..	11'5	12'0	14'1	13'5	11'9	12'7	12'5	12'8	11'7	10'9	9'4
June ..	12'0	15'6	16'4	15'1	13'9	14'4	13'5	12'7	11'7	12'9	7'6
July ..	16'6	14'8	17'8	17'9	17'1	16'6	14'8	13'8	13'4	13'8	9'6
August ..	13'8	15'1	14'3	15'1	14'2	14'5	14'2	13'4	13'0	13'0	8'8
September ..	16'3	19'2	20'2	19'5	17'6	18'1	18'0	17'3	14'4	18'5	9'8
October ..	22'7	24'5	26'1	26'8	25'7	23'5	23'0	24'8	21'7	23'0	15'2
November ..	23'5	25'3	26'5	26'2	24'5	25'3	23'0	24'7	22'7	21'1	20'3
December ..	21'0	25'3	23'8	23'7	22'2	22'7	22'2	21'5	19'4	22'7	17'0
Year ..	17'51	19'23	19'97	19'86	18'66	18'43	18'01	18'27	16'85	17'49	13'27
Dec.-Feb. ..	20'70	23'97	23'43	22'93	21'43	21'57	22'03	22'73	20'90	22'43	17'50
Mar.-May ..	14'37	14'80	16'00	16'30	15'53	14'67	14'50	14'77	14'20	13'43	11'80
June-Aug. ..	14'13	15'17	16'17	16'03	15'07	15'17	14'17	13'30	12'70	13'23	8'67
Sept.-Nov. ..	20'83	23'00	24'27	24'17	22'60	22'30	21'33	22'27	19'60	20'87	15'10

## STONYHURST.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
January ..	15'0	17'0	17'0	19'6	19'6	22'0	22'7	20'7	20'0	20'5	13'7
February ..	16'3	16'0	18'7	19'8	19'1	18'7	22'8	18'5	20'4	18'3	11'3
March ..	13'3	15'1	15'6	16'4	16'7	18'0	16'7	18'3	18'9	16'2	8'8
April ..	10'9	10'9	11'9	14'6	15'4	15'7	16'6	17'1	14'2	13'1	8'7
May ..	10'4	10'0	12'0	13'6	14'6	16'9	17'5	15'9	16'4	14'7	9'6
June ..	13'4	12'8	11'6	13'6	14'1	13'4	13'9	13'4	12'6	11'8	9'9
July ..	18'3	19'3	19'5	19'6	20'0	21'4	21'1	18'7	17'4	16'7	11'9
August ..	17'1	18'9	18'6	19'6	19'7	20'2	19'6	18'6	17'3	15'2	13'2
September ..	18'0	18'4	17'9	20'4	21'1	20'2	20'1	18'9	18'5	16'7	10'6
October ..	20'3	22'3	21'1	22'4	20'8	23'3	20'7	20'8	21'8	20'7	12'7
November ..	18'2	19'3	18'5	20'5	19'5	19'2	22'4	20'7	20'7	21'9	13'0
December ..	20'5	20'2	19'6	21'7	20'2	22'1	20'7	20'3	19'8	20'2	12'0
Year ..	15'98	16'68	16'83	18'48	18'40	19'09	19'57	18'49	18'17	17'17	11'28
Dec.-Feb. ..	17'27	17'73	18'43	20'37	19'63	20'93	22'07	19'83	20'67	19'67	12'33
Mar.-May ..	11'53	12'00	13'17	14'87	15'57	16'20	16'93	17'10	16'50	14'67	9'03
June-Aug. ..	16'27	17'00	16'57	17'60	17'93	18'33	18'20	16'90	15'77	14'57	11'67
Sept.-Nov. ..	18'83	20'00	19'17	21'10	20'47	20'90	21'07	20'13	20'33	19'77	12'10

continued.

during the TWENTY YEARS 1871-1890—continued.  
(100 = Continuous Rain).

## FALMOUTH.

Noon.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Midt.
21'0	23'2	21'0	22'7	24'1	23'6	23'0	21'6	22'1	20'8	23'0	22'3	25'4
18'0	18'6	20'5	20'1	19'9	20'7	19'2	19'4	19'7	21'1	19'9	19'2	24'1
13'3	13'4	13'9	15'7	17'0	14'8	14'3	14'6	15'8	15'1	16'5	17'0	21'0
14'3	13'8	12'9	12'8	14'5	13'1	12'8	12'8	12'4	14'1	15'5	13'8	19'2
8'4	9'1	7'5	9'6	9'4	9'9	9'1	10'2	10'4	10'2	11'2	10'6	14'3
9'8	10'3	9'3	9'0	11'2	9'8	9'6	9'0	10'2	9'3	9'6	9'5	13'4
11'7	12'2	12'9	13'0	12'2	12'9	13'0	12'9	12'1	12'7	14'7	14'2	17'1
10'4	10'7	9'4	11'7	11'9	12'2	10'9	12'2	14'7	13'2	10'9	11'7	17'8
13'2	12'0	11'5	12'2	13'1	13'1	13'6	12'5	12'2	12'7	14'1	13'6	18'5
17'8	17'8	17'0	17'6	20'3	20'3	18'5	15'8	17'2	17'8	17'6	17'5	24'7
20'5	21'0	21'8	21'8	24'0	27'9	26'5	26'0	24'0	23'8	25'2	22'7	25'2
20'9	19'9	21'2	23'0	22'7	21'9	21'0	21'7	20'4	22'3	24'5	20'7	25'8
14'99	15'17	14'91	15'77	16'69	16'68	15'96	15'73	15'93	16'09	16'89	16'67	20'54
20'17	20'57	20'90	21'93	22'23	22'07	21'07	20'90	20'73	21'40	22'47	20'73	25'10
12'00	12'10	11'43	12'70	13'63	12'60	12'07	12'53	12'87	13'13	14'40	13'80	18'17
10'63	11'07	10'53	11'23	11'77	11'63	11'17	11'37	12'33	11'73	11'73	11'80	16'10
17'17	16'93	16'77	17'20	19'13	20'43	19'53	18'10	17'80	18'10	18'97	17'93	22'80

## STONYHURST.

Noon.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Midt.
15'3	15'3	14'8	14'6	15'3	16'4	17'1	16'4	14'4	14'6	14'8	14'1	15'1
11'3	11'9	14'2	14'8	15'6	14'8	11'9	13'0	15'4	15'8	15'8	17'3	17'1
11'9	12'4	13'8	13'3	13'1	14'2	16'0	15'5	15'3	15'1	16'2	16'0	15'5
10'4	9'9	10'6	11'4	10'4	10'7	10'7	12'1	10'2	9'5	10'6	9'5	10'7
9'9	9'9	10'0	9'7	10'9	10'0	11'2	10'7	9'9	10'0	8'9	11'0	12'0
11'6	11'4	11'6	13'9	15'1	13'4	14'3	14'1	12'6	11'4	10'9	12'1	13'1
13'6	13'1	13'0	11'9	12'0	12'8	14'6	16'2	16'4	18'5	17'9	17'4	17'9
13'2	13'4	12'9	12'9	13'4	13'4	15'8	13'7	14'4	15'0	14'7	15'5	17'1
13'2	11'0	12'8	12'5	13'8	15'5	14'7	15'5	14'0	16'7	15'5	15'5	16'4
15'0	16'7	15'8	15'9	16'3	16'7	17'9	16'3	16'6	17'9	18'4	18'5	18'7
14'0	13'9	14'4	14'6	14'0	15'1	14'7	15'2	17'6	17'5	18'3	17'3	20'0
14'8	15'6	16'5	16'2	16'7	16'0	17'9	18'1	19'0	16'7	17'5	20'2	20'7
12'85	12'88	13'37	13'48	13'88	14'08	14'73	14'73	14'65	14'89	14'96	15'37	16'19
13'80	14'27	15'17	15'20	15'87	17'73	15'63	15'83	16'27	15'70	16'03	17'20	17'63
10'73	10'73	11'47	11'47	11'47	11'63	12'63	12'77	11'80	11'53	11'90	12'17	12'73
12'80	12'63	12'50	12'90	13'50	13'20	14'90	14'67	14'47	14'97	14'50	15'00	16'03
14'07	13'87	14'33	14'33	14'70	15'77	15'77	15'67	16'07	17'37	17'40	17'10	18'37



TABLE V.  
FREQUENCY of the OCCURRENCE of RAIN  
Expressed in Percentages.—

KEW.

Months.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
January ..	8'6	7'9	9'0	9'8	8'3	10'3	11'6	11'6	10'3	10'1	7'7
February ..	9'8	9'5	8'7	8'1	8'5	8'7	9'3	10'2	9'8	9'8	6'2
March.. ..	6'7	7'4	7'2	9'1	8'2	9'7	8'4	8'2	7'4	7'4	4'0
April .. ..	9'0	8'5	7'6	8'3	8'8	11'0	9'7	9'0	8'7	9'2	7'0
May .. .. .	6'8	6'5	7'8	8'4	8'6	8'1	7'0	7'1	7'3	8'4	6'7
June .. .. .	6'6	5'7	6'2	7'6	8'7	7'6	6'6	6'0	7'4	8'6	6'7
July .. .. .	5'9	6'5	5'6	6'9	7'7	8'5	8'3	6'4	6'7	9'0	8'7
August .. .	8'5	7'2	6'0	7'0	7'7	5'9	6'8	6'0	6'2	6'2	5'2
September ..	8'1	8'6	9'6	9'4	7'9	8'4	7'7	7'7	7'1	8'7	7'1
October .. .	10'9	10'0	10'9	11'4	10'6	10'8	10'8	11'3	10'1	11'3	9'8
November ..	11'4	10'8	12'0	11'2	11'5	11'7	11'2	11'2	10'8	10'8	8'0
December ..	8'3	8'1	8'7	8'1	10'0	9'8	9'8	9'3	7'9	8'5	7'4
Year .. .	8'38	8'06	8'28	8'78	8'88	9'21	8'93	8'67	8'31	9'00	7'04
Dec.-Feb. ..	8'90	8'50	8'80	8'67	8'93	9'60	10'23	10'37	9'33	9'47	7'10
Mar.-May ..	7'50	7'47	7'53	8'60	8'53	9'60	8'37	8'10	7'80	8'33	5'90
June-Aug. ..	7'00	6'47	5'93	7'17	8'03	7'33	7'23	6'13	6'77	7'93	6'87
Sept.-Nov. ..	10'13	9'80	10'83	10'67	10'00	10'30	9'90	10'07	9'33	10'27	8'30

—continued.

during the TWENTY YEARS 1871-1890—continued.  
(100=Continuous Rain).

KEW.

Noon.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Midt.
9'0	10'5	10'7	11'1	11'6	10'3	8'8	9'2	9'0	8'6	8'4	8'4	9'6
7'9	10'0	10'4	8'9	8'7	8'3	9'5	9'5	11'0	9'1	8'5	8'3	8'7
6'3	7'2	6'5	6'3	7'6	6'8	8'7	7'0	8'7	8'2	7'2	7'2	6'7
7'5	10'7	9'8	8'5	10'7	9'2	9'7	7'3	7'5	7'5	8'7	8'5	9'8
8'4	8'6	10'7	10'4	9'3	8'4	8'3	7'3	7'5	6'7	5'5	6'8	8'3
7'6	6'6	6'0	9'9	10'4	9'9	8'9	9'6	9'6	8'7	10'1	7'4	7'6
10'0	10'6	9'5	10'6	10'9	8'5	10'0	8'2	7'4	9'6	6'9	7'0	7'5
7'2	7'8	8'3	9'0	7'3	9'8	10'1	8'1	7'7	9'3	8'1	7'2	8'1
6'6	7'6	7'2	6'4	6'7	9'6	7'9	8'4	8'9	8'2	7'4	7'7	8'1
12'1	13'1	13'4	13'4	13'5	11'7	9'5	10'4	10'0	9'3	8'8	7'7	9'8
9'2	10'7	9'8	12'4	11'2	12'0	11'7	11'2	10'3	11'2	12'2	12'7	12'0
9'3	8'9	9'3	9'1	8'7	8'5	9'3	9'3	9'1	8'5	10'4	9'6	10'0
8'43	9'36	9'30	9'67	9'72	9'42	9'37	8'79	8'89	8'74	8'52	8'21	8'85
8'73	9'80	10'13	9'70	9'67	9'03	9'20	9'33	9'70	8'73	9'10	8'77	9'43
7'40	8'83	9'00	8'40	9'20	8'13	8'90	7'20	7'90	7'47	7'13	7'50	8'27
8'27	8'33	7'93	9'83	9'53	9'40	9'67	8'63	8'23	9'20	8'37	7'20	7'73
9'30	10'47	10'13	10'73	10'47	11'10	9'70	10'00	9'73	9'57	9'47	9'37	9'97



It is these figures which have been used in the discussion, and in each case, as before, the values for the quarters and the year have been made out.—(Plates VIII. to XIV.)

It is noteworthy that in almost every case the curve for the year follows, more or less closely, that for the autumn.

This is apparently due to the fact that, in these islands the autumn is, generally speaking, the wettest quarter of the year, the British Isles being in the region of predominant autumn rains.

The curves exhibit a more general accordance, *inter se*, than do those of Quantity. For all the observatories the dip at 11 h. a.m. is very striking, and several have the daily maximum only one hour earlier. This latter phenomenon is probably, as already explained, due to the change of paper on the gauges at 10 h. a.m., and the consequent entry, at that hour, of any residue of water found in the receiver.

The curves for Valencia have a remarkable course, almost a reversal of the curves of daily thermometer range, with the maximum frequency of fall at the time of the minimum temperature.

It is striking, that the same development of a nocturnal maximum, certainly not to the same extent as at Valencia, appears also at Stonyhurst, but not elsewhere.

These two stations are in closer proximity to hilly country than any of their fellows, so that possibly local vertical circulations, produced by irregularities in ground contour, many have to do with increased frequency of precipitation during the night time.

A cursory examination of nine years records from Fort William, at the foot of Ben Nevis, indicates that there too precipitation at night is more frequent than in the day time.

I shall now proceed to describe the curves for the several observatories in more detail.

*Valencia.*—This is the most characteristic of all, showing the marked excess of precipitation in the early morning hours.

In winter the maximum is at 5 h. a.m., and the minimum at noon, the fall of 9 per cent. in two hours, from 9 h. to 11 h. a.m., producing this result. The ascending branch of the curve in the afternoon exhibits irregularities, and there is a secondary minimum at 1 h. a.m., which in the other quarters falls later.

The spring curve resembles that for winter, but exhibits a temporary rise at 2 h. p.m. and again at 8 h. p.m., while the night minimum is pushed on an hour.

In summer the epoch of the maximum is at 6 h. instead of 5 h. as during the rest of the year, the remainder of the curve is smooth, and the night minimum is very faint.

In autumn the minimum reverts to noon, as in winter, and the night minimum is strongly marked.

The yearly curve agrees most closely with that for autumn.

# VALENCIA FREQUENCY. PERCENTAGE OF RAINY HOURS BASED UPON THE RECORDS OF THE 20 YEARS,—1871—1890.

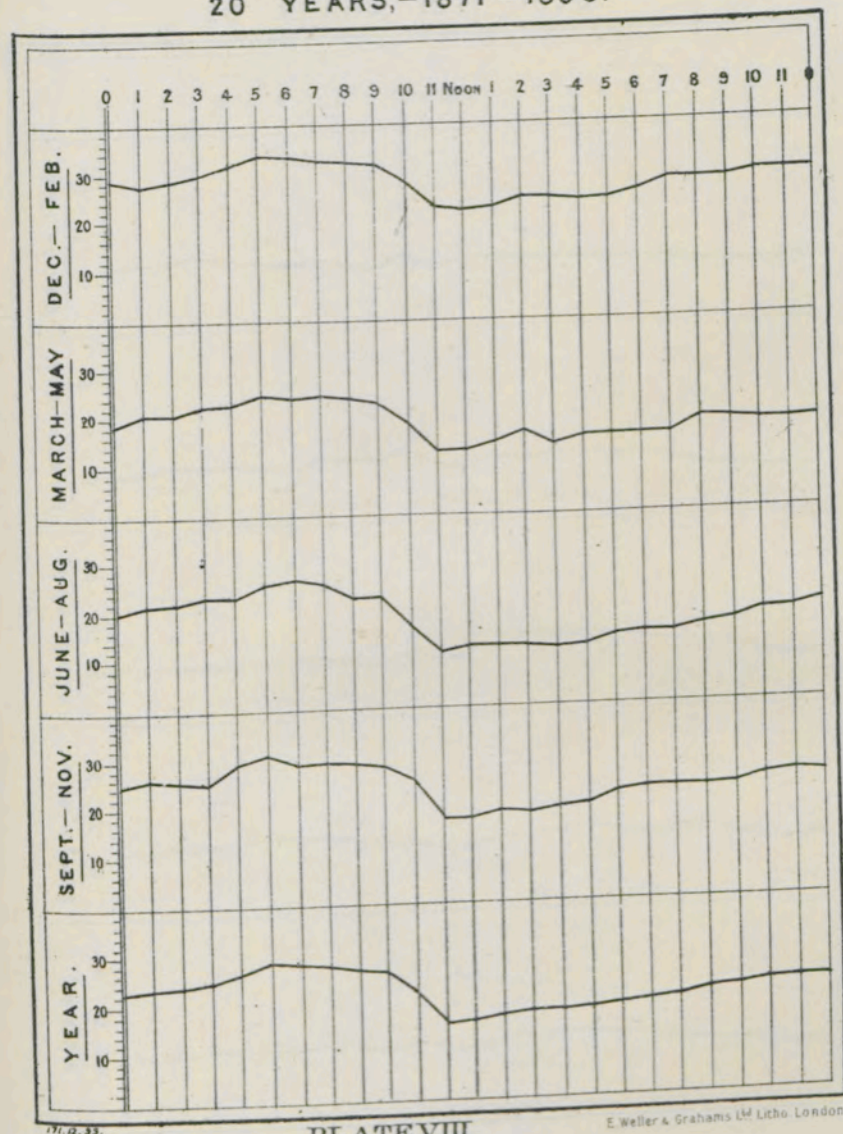


PLATE VIII.

E. Weller & Grahams Ltd. Litho. London.



# ARMAGH FREQUENCY.

PERCENTAGE OF RAINY HOURS

BASED UPON THE RECORDS OF THE

20 YEARS, -1871-1890.

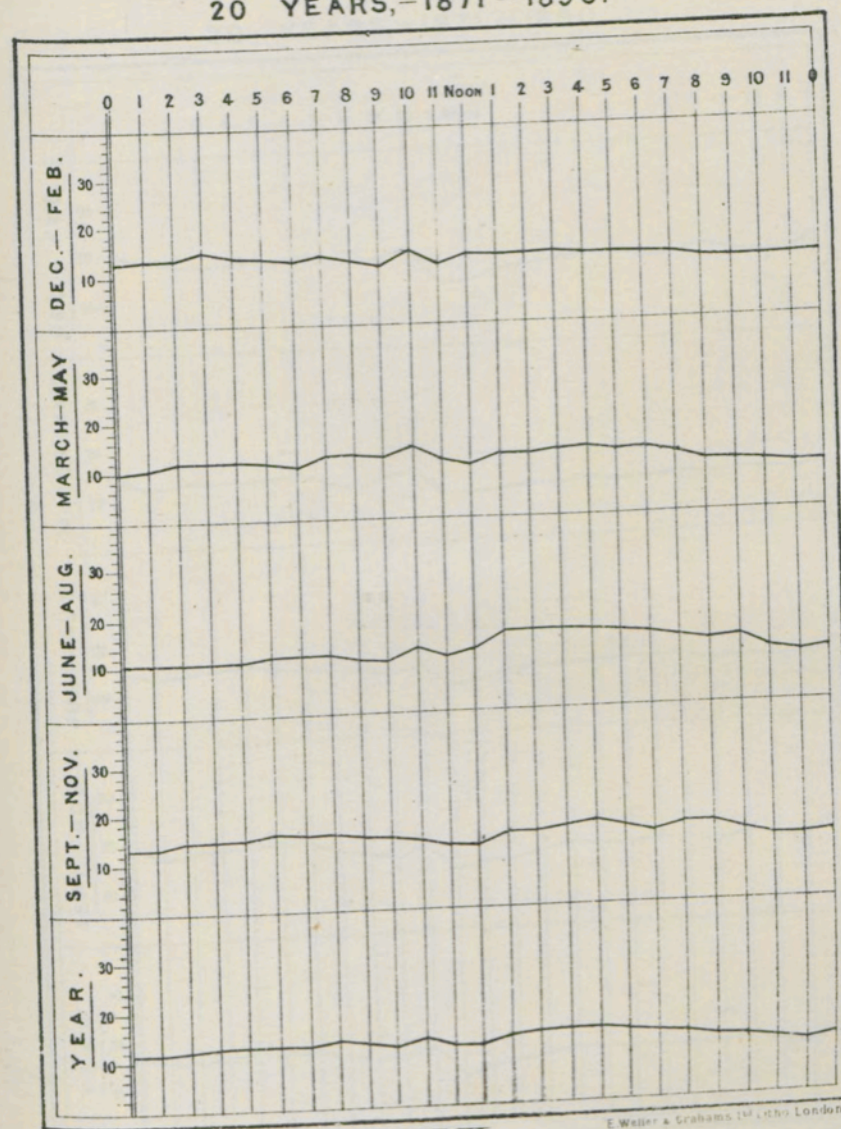


PLATE IX.

E. Webb & Grahams Ltd, 100, London.



GLASGOW FREQUENCY.  
 PERCENTAGE OF RAINY HOURS  
 BASED UPON THE RECORDS OF THE  
 20 YEARS, 1871-1890.



GLASGOW FREQUENCY.  
 PERCENTAGE OF RAINY HOURS  
 BASED UPON THE RECORDS OF THE  
 20 YEARS, 1871-1890.

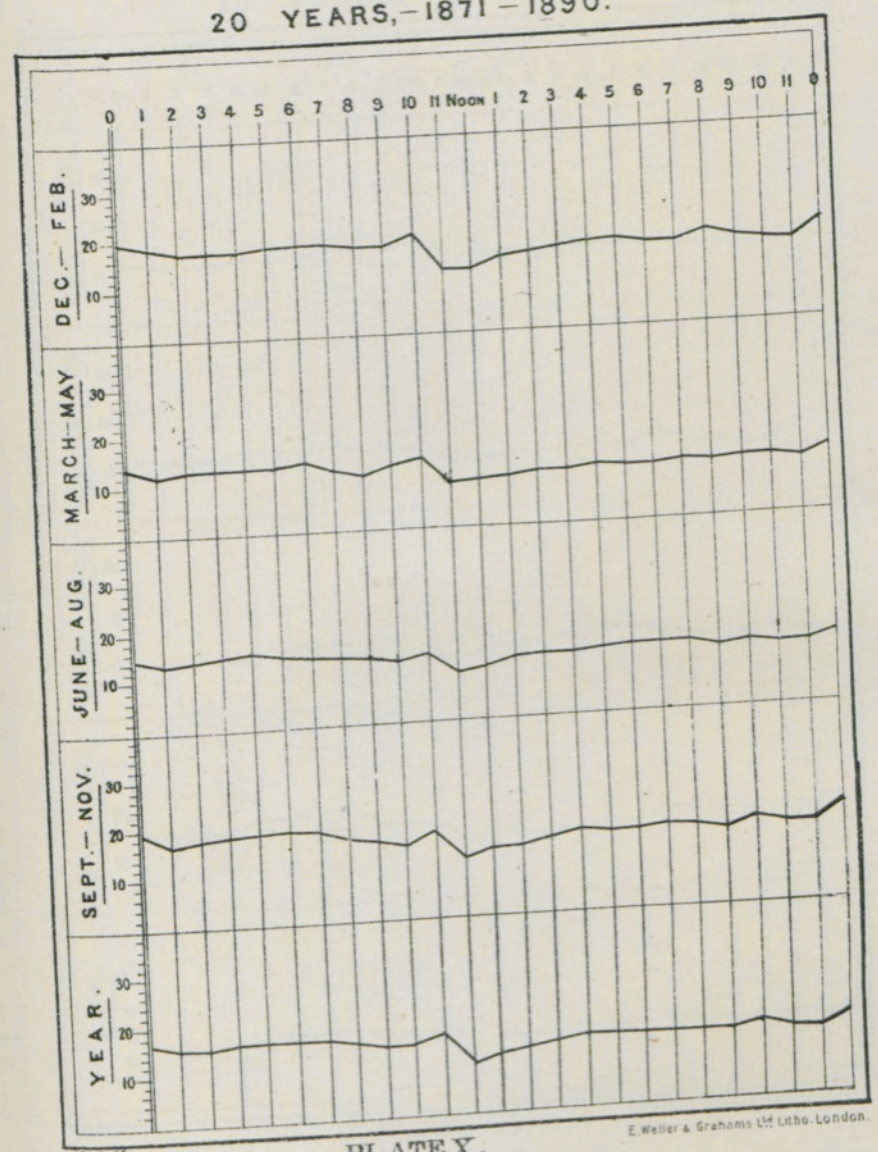


PLATE X.

E. Waller & Grahams Ltd. Litho. London.



# GLASGOW FREQUENCY PERCENTAGE OF RAINY HOURS BASED UPON THE RECORDS OF THE 20 YEARS - 1871-1890

ABERDEEN FREQUENCY.

PERCENTAGE OF RAINY HOURS

BASED UPON THE RECORDS OF THE  
20 YEARS, -1871-1890.

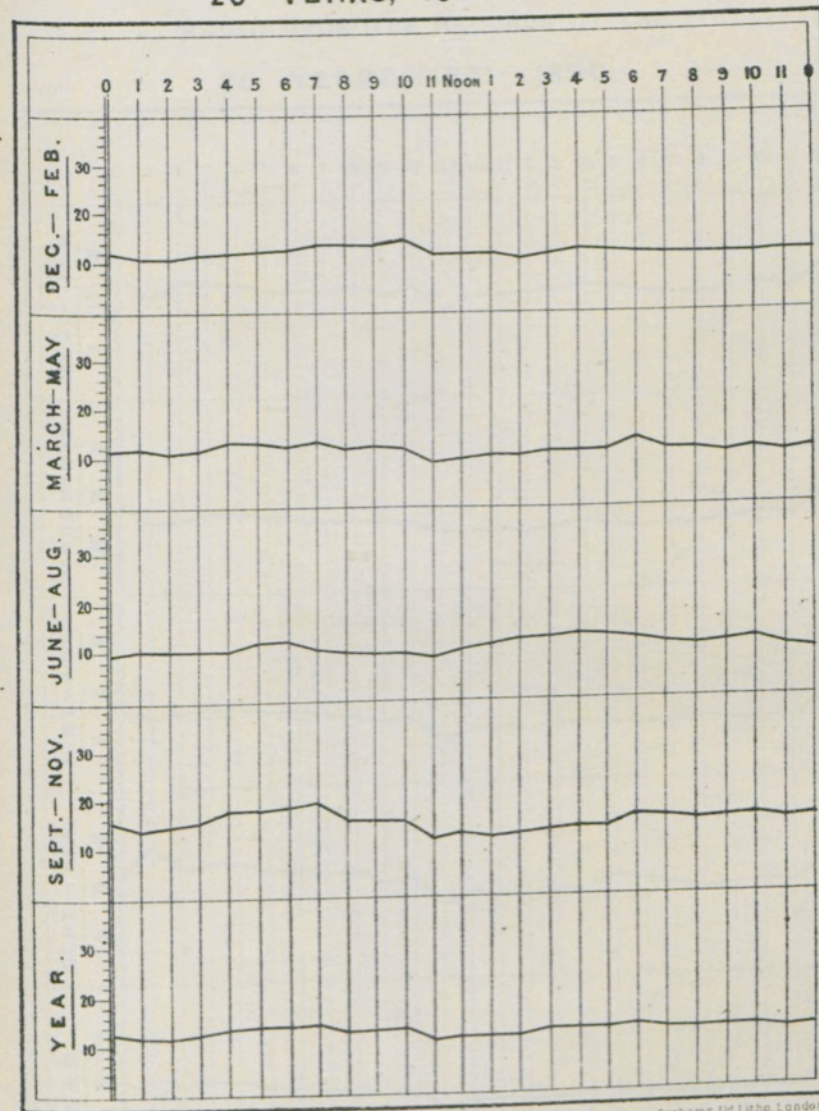


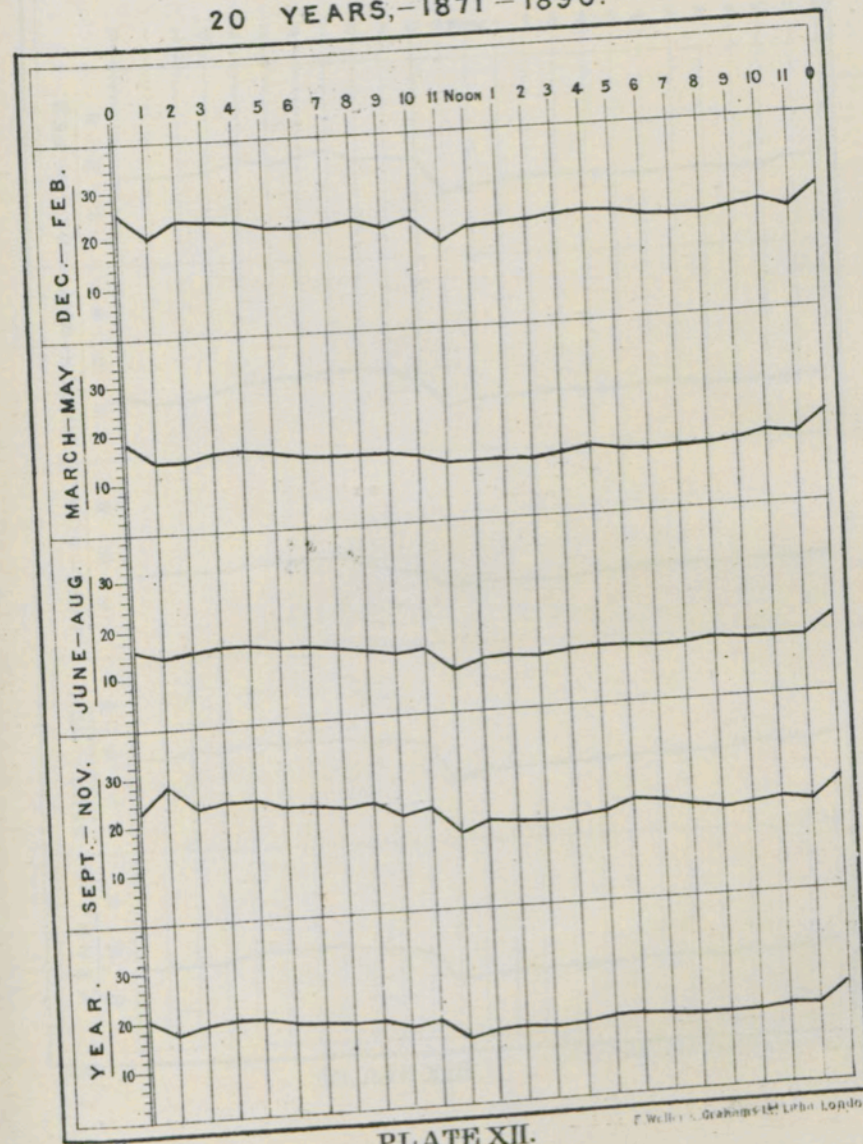
PLATE XI.

Wells & Grahams Ltd Litho London.



# FALMOUTH FREQUENCY.

PERCENTAGE OF RAINY HOURS  
BASED UPON THE RECORDS OF THE  
20 YEARS, -1871-1890.





# STONYHURST FREQUENCY.

PERCENTAGE OF RAINY HOURS

BASED UPON THE RECORDS OF THE

20 YEARS,—1871—1890.

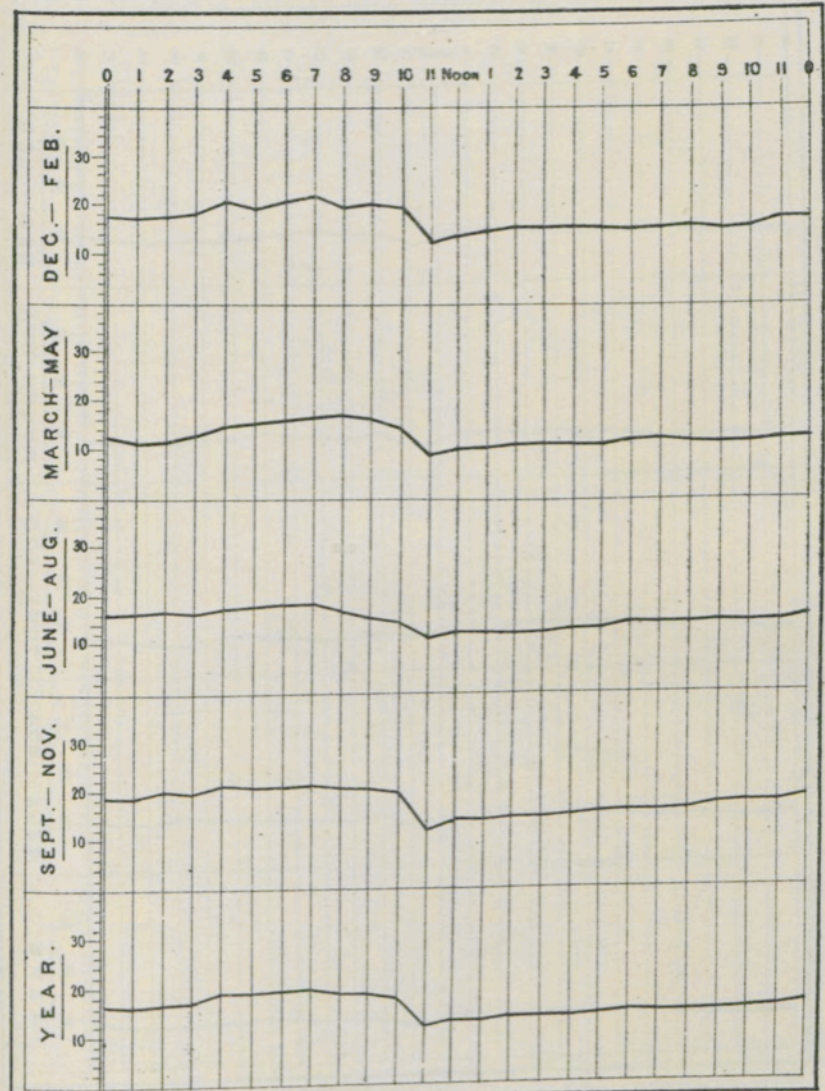


PLATE XIII.

E. Weller & Grahams 14, Litho. London.

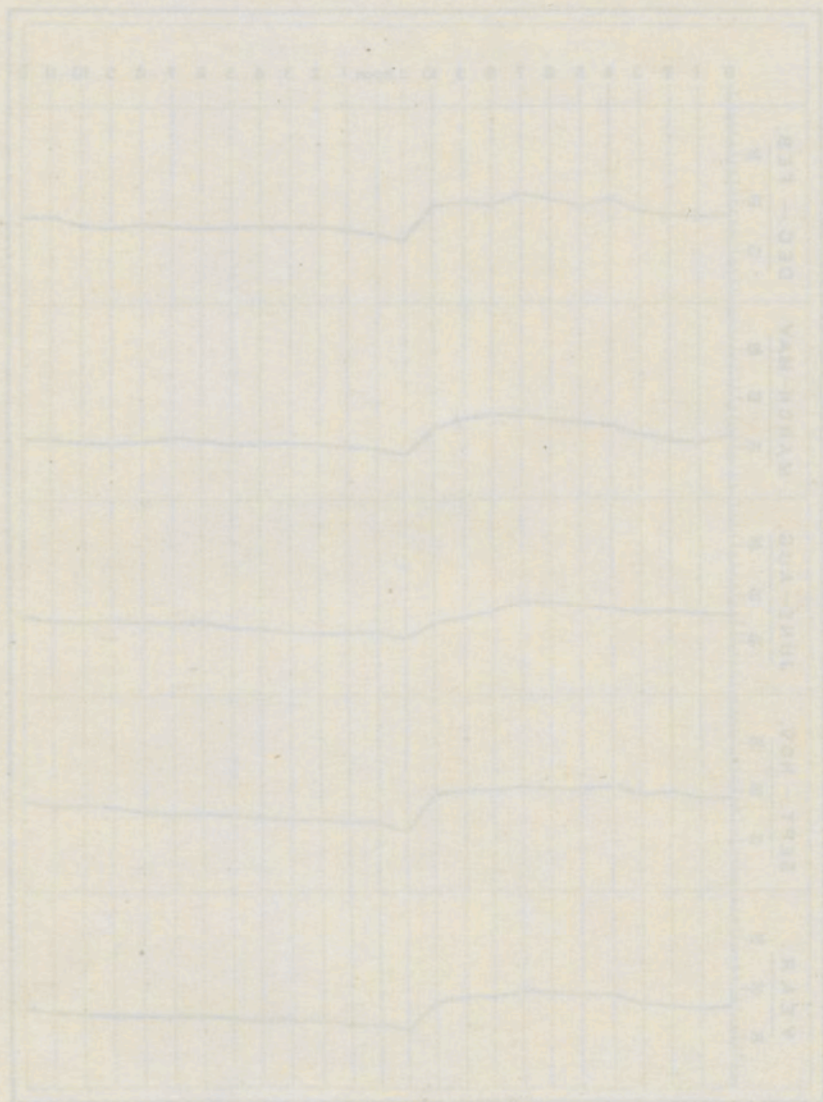


STONYHURST FREQUENCY

PERCENTAGE OF RAINY HOURS

BASED UPON THE RECORDS OF THE

20 YEARS, 1871-1890.

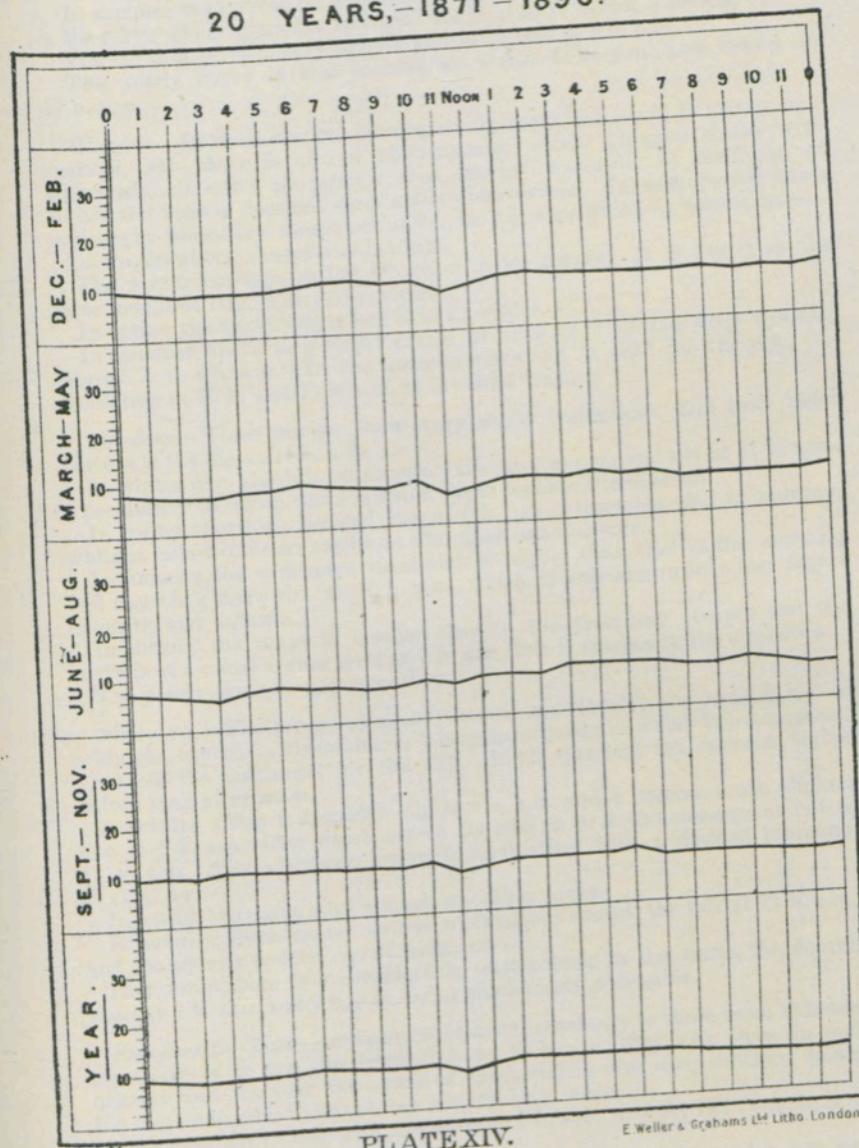


# K E W F R E Q U E N C Y .

PERCENTAGE OF RAINY HOURS

BASED UPON THE RECORDS OF THE

20 YEARS, 1871-1890.



PLATEXIV.

E. Weller & Grahams Litho London.



*Armagh.*—This station presents us with a complete contrast to that just described.

The early morning maximum disappears, except in winter, and the only feature of resemblance is the fall, from 10 h. to 11 h. a.m. The maximum is at 10 h. a.m.

In spring the afternoon maximum of frequency comes out, but the curve is still highest at 10 h. a.m., and the minimum is at 11 h. p.m.

In summer the increased frequency in the afternoon is noticeable, and this is the curve which offers the strongest contrast to those for Valencia.

The autumn curve is very smooth and is highest at 4 h. p.m.

The yearly curve is also highest at about 4 h. p.m. and lowest at 11 h. p.m.

*Glasgow.*—In these curves the irregularity from 10 h. to 11 h. a.m. is very marked, but there is also a phenomenon, which Glasgow shares with Falmouth, viz.—the appearance of a decided maximum at midnight, of which the reason does not seem easily discoverable. In each quarter there is a slight secondary minimum at 8 h. or 9 h. a.m. which is almost imperceptible elsewhere, except at Aberdeen.

The winter curve is rather irregular in its course. It is nearly at the same height at 10 h. a.m. and midnight.

In spring the amplitude is less than in winter.

In summer there is a slight excess of frequency in the early morning hours 3 h. to 4 h. a.m. In the autumn curve and in that for the year, the oscillation at 10 h. and 11 h. a.m. is the chief feature.

*Aberdeen.*—These curves show very slight oscillations, and their chief feature is the dip at 11 h. a.m.

In winter the absolute minimum falls at 2 h. p.m. and not at 11 h. a.m., a peculiarity to which there is also a slight tendency in autumn.

In spring there is a decided rise at 6 h. p.m., traceable also in autumn, while it falls two hours earlier in the other two quarters.

In summer the afternoon maximum is higher than that in the morning and there is a sharp rise at 10 h. p.m., which is only shown in a less degree in spring and autumn.

In autumn the range is greater than in the preceding quarter and the curve is at a much higher level at 7 h. a.m. than it reaches in the afternoon.

The yearly curve is very smooth.

*Falmouth.*—The curves as already mentioned, exhibit the sudden rise at midnight, especially noticeable in winter and spring, in which two quarters it produces the maximum for the day. In all quarters the curve is higher before than after noon.

In winter there is a sudden dip to 1 h. a.m. and a second, much slighter one at 9 h. a.m., after which comes the rise at 10 h. and subsequent fall to 11 h. a.m. The afternoon curve is undulating with a decided minimum at 11 h. p.m.

In spring the curve runs a much smoother course.

In summer there are no serious undulations except the fall at 11 h. a.m., and the equally sudden rise at midnight.

In autumn there is a considerable unsteadiness in the curve, the depressions at 1 h. a.m. and 9 h. a.m. being particularly noticeable.

*Stonyhurst.*—These curves show a general similarity to those from Valencia, especially as to the dip from 10 h. to 11 h. a.m. they also show in each quarter and the year the excess of frequency in the early morning hours, the matter to which allusion has already been made.

In winter the principal maximum is at 7 h. a.m., and the fall from 10 h. to 11 h. is as much as 7 per cent.

In spring there are decided minor oscillations a minimum at 1 h. a.m. and a maximum at 7 h. p.m.

In summer these reappear, but the former a little later, the latter an hour earlier.

The autumn curve exhibits several minor irregularities.



*Key.*—These curves are the smoothest of all, and very little range is perceptible.

In summer there is a slight manifestation of a maximum in the afternoon, from 3 h. to 6 h. p.m.

Thus much comes out of the discussion that everywhere the forenoon hours from about 10 o'clock are drier than the rest of the day, and that although temperature has not then nearly reached its maximum, yet that invalids would be less likely to get wet if they went out in the morning.

It is hoped that the foregoing tables will be found useful, as they cover each month in the year. In Europe it is only in these islands that a continuous rain record can be carried out in winter, owing to the impossibility of registration of snow as it falls.

I must not conclude the paper without expressing my obligations to two of the staff of the Meteorological Office, Mr. John A. Curtis and Mr. Thomas E. Allen who have spared themselves no trouble in carrying out the numerical and graphical work therewith connected.

## LIST OF PUBLICATIONS issued under the Authority of the Meteorological Council.

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- No. 1. Report of the Meteorological Committee for 1867. 1s.
2. Instructions for Meteorological Telegraphy. New Edition, 1891. Prepared for the use of observers exclusively. 6d.
3. Fishery Barometer Manual. (New edition, 1887.) 6d.
4. Charts showing the Surface Temperature of the South Atlantic Ocean in each Month of the Year. 2s. 6d.
5. Report of the Meteorological Committee for 1868. 5d.
6. Report of the Meteorological Committee for 1869. 10d.
7. Quarterly Weather Report for 1869.—Parts I. to IV. 5s. each.
8. Barometer Manual. (Out of print. See Nos. 3, 24, 40, 60, and 61.)
9. Quarterly Weather Report for 1870.—Parts I. to IV. 5s. each.
10. Report of the Meteorological Committee for 1870. 10d.
11. Contributions to our Knowledge of the Meteorology of Cape Horn and the West Coast of South America. 2s. 6d.
12. Currents and Surface Temperature of the North Atlantic Ocean, from the Equator to Lat. 40° N., for each month of the year, with a General Current Chart. 2s. 6d.
13. A Discussion of the Meteorology of that Part of the Atlantic lying North of 30° N., for the Eleven Days ending 8th February, 1870. With Book of Charts, 5s.
14. Quarterly Weather Report for 1871.—Parts I. to IV. 5s. each.
15. Report of the Meteorological Committee for 1871. 10d.
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18. Contributions to our Knowledge of the Meteorology of the Antarctic Regions. 2s.
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20. Charts of Meteorological Data for Square 3. Lat. 0°—10° N., Long. 20°—30° W., and remarks to accompany the Monthly Charts, which show the Best Routes across the Equator for each Month, &c. 20s.
21. Report of the Proceedings of the Meteorological Congress at Vienna. 1873. 1s.
22. Report of the Meteorological Committee for 1873. 4d.
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24. Instructions in the Use of Meteorological Instruments. [Reprinted 1892.] (New edition in course of preparation.) 2s. 6d.
25. Quarterly Weather Report for 1874.—Parts I., II., and IV., 5s. each. Part III., 5s. 9d.
26. Report of the Meteorological Committee for 1874. 6d.
27. Charts of Meteorological Data for the Nine 10° Squares of the Atlantic which lie between 20° N. and 10° S., and extend from 10° to 40° W., with accompanying Remarks, ending with the Best Routes across the Equator. 24s.
28. Contribution to the Meteorology of Japan. By Staff-Commander Thomas H. Tizard, H.M.S. *Challenger*. 1s.
29. Report of the Meteorological Committee for 1875. 4d.
30. Quarterly Weather Report for 1875.—Parts I.—IV. 5s. each.
31. Report of the Meteorological Committee for 1876-7. 3s. 5d.
32. The Meteorology of the North Atlantic during August, 1873, with 31 Synoptic Charts. With Book of Charts. 15s.
33. Quarterly Weather Report for 1876 (New Series).—Part I., 6s.; Parts II., III., and IV., 5s. each.
- \*33A. Meteorological Observations at Stations of the Second Order for the year 1876.
- 33B. Meteorological Observations at Stations of the Second Order for the year 1877.
34. Contributions to our Knowledge of the Meteorology of the Arctic Regions.—Vol. I.: Part I., 2s.; Part II., 10s.; Part III., 6s.; Part IV., 5s.; Part V., 6s.
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45. Meteorological Observations at Stations of the Second Order for the year 1879. 20s.
46. Report on the Storm of October 13-14, 1881. By Robert H. Scott, F.R.S. 1s. 6d.
47. Rainfall Tables of the British Isles for 1866-80. Compiled by G. J. Symons, F.R.S. 7s. 6d.

\* The Observations at Stations of the Second Order for the years 1873-1875 will be found in the Quarterly Weather Reports for the respective years.

## LIST OF PUBLICATIONS—continued.

48. Report of the Meteorological Council for 1881-2. 1s.
49. Quarterly Weather Report for 1879. (New Series.) Parts I., II., and III., 6s. each; Part IV., 5s. 6d. Appendices and Plates. 27s.
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- 51.\* Hourly Readings from the Self-Recording Instruments at the Seven Observatories under the Meteorological Council, 1881. (New Series.) Part I., 10s. 6d. Parts II., III., and IV., 21s. each.
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53. Meteorological Atlas of the British Isles. 5s. 6d.
54. Hourly Readings from the Self-Recording Instruments at the Seven Observatories under the Meteorological Council, 1882. Parts I. and II., 20s. each; Part III., 22s. 6d.; Part IV., 26s.
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61. A Barometer Manual for the Use of Seamen. With an Appendix on the Thermometer, Hygrometer, and Hydrometer. (Third Edition.) 6d. [A new Edition in the Press.]
62. Monthly Weather Reports for 1884. Jan., Feb., March, May—Nov., 1s. 6d. each. April (with 2 Appendices), 2s. 6d. Dec., 1s. 9d.
63. Hourly Readings from the Self-Recording Instruments at the Seven Observatories under the Meteorological Council, 1883. Parts I., II., and III., 21s. each; Part IV., 30s.
64. Report of the Meteorological Council for 1883-4. 1s. 2d.
65. Monthly Weather Reports for 1885. Jan. to Dec., 1s. 6d. each.
66. Meteorological Observations at Stations of the Second Order for the year 1881. 35s.
67. Report of the Meteorological Council for 1884-5. 4s. 4d.
68. Monthly Weather Reports for 1886. Jan. to Dec., 1s. 6d. each.

\* For the years 1874-1880 the Hourly Readings were issued in lithographed form. Price 20s. per annum.



69. Meteorological Observations at Stations of the Second Order for the year 1882. 35s.
70. Hourly Readings from the Self-Recording Instruments at the Four Observatories under the Meteorological Council, 1884. Part I., 12s.; Part II., 10s.; Part III., 10s. 6d.; Part IV., 15s.
71. Synchronous Weather Charts of the North Atlantic and the adjacent Continents. Aug. 1, 1882, to Sept. 3, 1883. Parts I. to IV. (33 sheets each.) 17s. each part.
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75. Report of the Meteorological Council for 1886-87. 8d.
76. Charts showing the Mean Barometric Pressure over the Atlantic, Indian, and Pacific Oceans. 10s. 6d. Supplementary Chart, 6d.
- \*77. Monthly Weather Reports for 1887. January to April, 1s. 6d. each. May to December, in wrapper, 12s.
78. Meteorological Observations at Stations of the Second Order for the year 1884. 32s.
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87. Weekly Weather Report for the year 1890. Vol. VII. Third Series. (For Price, &c., see No. 86.)

\* Publication continued after this year as a Supplement to the Weekly Weather Report.

† The publication of the Weekly Weather Report began in February 1878 Annual Subscription, 1878-1883, 12s. 6d.; 1884-1887, 21s. 2d.

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89. Meteorological Observations made at Sanchez, Samaná Bay, St. Domingo. 1886-88. By the late W. Reid, M.D. 8s. 6d.
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139. Meteorological Observations at Stations of the Second Order for the year 1896. 21s.
140. Report of the Meteorological Council for 1898-99.

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141. Hourly Means of the Readings obtained from the Self-Recording Instruments at the Five Observatories under the Meteorological Council, 1896. (In the Press.)
142. Charts of North Atlantic Weather for the Winter of 1898-9. (In the Press.)

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- No. 1. Report of an Inquiry into the Connexion between Strong Winds and Barometrical Differences.—By Robert H. Scott, Director of the Office. 6d.
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8. Report on Weather Telegraphy and Storm Warnings. Presented to the Meteorological Congress at Vienna. 1873. 6d.
9. Report of the Permanent Committee of the First International Meteorological Congress at Vienna for 1874. Meetings held at Vienna and Utrecht, 1873-1874. 1s. 6d.
10. On the Physical Geography of the part of the Atlantic which lies between 20° N. and 10° S. and extends from 10° to 40° W. A Paper read before the British Association at Bristol, in August, 1875.—By Capt. H. Toynbee, F.R.A.S., F.R.G.S., Marine Superintendent. [Out of Print.]
11. Report of the Permanent Committee of the First International Congress at Vienna. Meeting at London, 1876. With Supplement. 2s.
12. Reports to the Permanent Committee of the First International Meteorological Congress at Vienna on Atmospheric Electricity, Maritime Meteorology, and Weather Telegraphy, 1878. 2s.
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14. Report of the International Meteorological Committee. Meeting at Berne, 1880. 1s.
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