

examined), not to include Ijon, which, moreover, is concealed by higher ground in Galilee.

My remarks as to the view from Jebel Osh'a are from notes and sketches made on the spot. (See *Quarterly Statement*, 1882, and "Heth and Moab.")

ON THE PRESSURE OF THE ATMOSPHERE AT JERUSALEM.

By JAMES GLAISHER, F.R.S.

JERUSALEM is situated in latitude $31^{\circ} 46' 40''$ N. and longitude $35^{\circ} 13' 30''$ E., and is about 2,500 feet above the level of the Mediterranean Sea. The observations of atmospheric pressure were begun in the year 1861 by Dr. Chaplin, and continued by him till the end of the year 1881. The results of Dr. Chaplin's observations were published in the *Quarterly Statement* for January, 1883. From 1882 the observations have been under the superintendence of the Palestine Exploration Fund. They were forwarded at the end of each year to the Society, but remained unreduced for some years; recently they have been sent to me at the end of each year. The results from 1882 to 1896 have been published in the *Quarterly Statements* between July, 1893, and January, 1898. So far as I can learn, the barometer has never been moved since 1861. By extracting from these published results the highest barometer reading in each month the following table has been formed:—

TABLE I.—Showing the highest reading of the barometer, corrected to 32° Fahrenheit, in every month in the 15 years 1882 to 1896. Observations taken at 9 A.M.

Months.	YEARS.															Means of 15 years.
	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	
January... ..	ins. 27·721	ins. 27·542	ins. 27·668	ins. 27·616	ins. 27·537	ins. 27·708	ins. 27·602	ins. 27·561	ins. 27·613	ins. 27·599	ins. 27·604	ins. 27·538	ins. 27·563	ins. 27·637	ins. 27·598	ins. 27·620
February	27·593	27·574	27·630	27·552	27·582	27·709	27·600	27·621	27·546	27·574	27·521	27·569	27·528	27·509	27·620	27·589
March	27·618	27·609	27·619	27·557	27·573	27·557	27·627	27·562	27·489	27·555	27·495	27·512	27·578	27·455	27·438	27·556
April	27·625	27·527	27·510	27·506	27·502	27·551	27·491	27·519	27·485	27·557	27·458	27·531	27·512	27·537	27·594	27·517
May	27·504	27·467	27·434	27·416	27·594	27·635	27·472	27·523	27·407	27·424	27·522	27·448	27·435	27·551	27·481	27·490
June	27·472	27·463	27·460	27·410	27·431	27·430	27·396	27·466	27·423	27·435	27·421	27·480	27·420	27·478	27·443	27·439
July	27·358	27·346	27·443	27·403	27·345	27·315	27·329	27·381	27·292	27·475	27·317	27·296	27·378	27·343	27·375	27·360
August	27·399	27·400	27·378	27·364	27·368	27·321	27·372	27·356	27·349	27·374	27·342	27·420	27·395	27·325	27·439	27·374
September	27·560	27·530	27·453	27·513	27·501	27·536	27·486	27·469	27·496	27·462	27·463	27·402	27·472	27·493	27·491	27·492
October	27·537	27·530	27·509	27·375	27·513	27·578	27·558	27·626	27·598	27·591	27·544	27·556	27·607	27·508	27·589	27·561
November	27·573	27·580	27·631	27·582	27·623	27·573	27·300	27·016	27·577	27·619	27·537	27·668	27·499	27·632	27·656	27·532
December	27·617	27·613	27·637	27·616	27·656	27·615	27·734	27·673	27·533	27·737	27·617	27·583	27·526	27·647	27·671	27·631
Means	27·556	27·511	27·538	27·512	27·523	27·548	27·522	27·531	27·484	27·528	27·487	27·509	27·493	27·519	27·533	27·520

The highest reading of the barometer was above 27·500 inches in every January, February, October, and December, 14 times in November, 12 in April, 11 in March, 6 in May, and 5 in September; it was below 27·500 inches in every June, July, and August. The highest reading in the 15 years was 27·737 inches, in December, 1891.

By taking out of Table I the extreme readings in each month, the highest readings have varied—

	ins.		ins.
In January	from 27·721 in 1882	to 27·538 in 1893
February	27·709 ,, 1887	27·509 ,, 1895
March	27·627 ,, 1888	27·438 ,, 1896
April	27·625 ,, 1882	27·458 ,, 1892
May	27·635 ,, 1887	27·407 ,, 1890
June	27·480 ,, 1893	27·396 ,, 1888
July	27·475 ,, 1891	27·292 ,, 1890
August	27·439 ,, 1896	27·321 ,, 1887
September	27·586 ,, 1887	27·402 ,, 1893
October	27·626 ,, 1889	27·501 ,, 1891
November	27·692 ,, 1895	27·499 ,, 1894
December	27·737 ,, 1891	27·526 ,, 1894

The differences of readings in each month for 15 years were small, the largest was 0·228 inch, in May, the next in order was 0·211 inch, in December; the smallest was 0·084 inch, in June, and the next in order was 0·118 inch, in August.

By extracting from Table I the extreme readings in each year it is found that the highest readings have varied—

	ins.		ins.
In 1882, from	27·721	in January	to 27·358 in July.
1883	27·613	December	27·346 ,, July.
1884	27·668	January	27·378 ,, August.
1885	27·616	Jan. & Dec.	27·364 ,, August.
1886	27·656	December	27·345 ,, July.
1887	27·709	February	27·315 ,, July.
1888	27·734	December	27·329 ,, July.
1889	27·673	December	27·356 ,, August.
1890	27·613	January	27·292 ,, July.
1891	27·737	December	27·374 ,, August.
1892	27·617	December	27·317 ,, July.
1893	27·668	November	27·296 ,, July.
1894	27·607	October	27·378 ,, July.
1895	27·692	November	27·325 ,, August.
1896	27·671	December	27·375 ,, July.

The difference between the highest reading in July or August and the highest reading in the same year, was the greatest in the year 1888,

when it was 0·405 inch ; the next in order was 0·394 inch, in the year 1887 ; the smallest was 0·229 inch, in 1894 ; and the next in order was 0·252 inch, in 1885.

The highest reading for the year in the 15 years has occurred in—

January, four times, viz., in 1882, 1884, 1885, and 1890 ; the highest was 27·721 inches, in 1882.

February, once ; 27·709 inches, in 1887.

October, once ; 27·607 inches, in 1894.

November, twice, in 1893 and 1895 ; the highest was 27·692 inches, in 1895.

December, eight times, in 1883, 1885, 1886, 1888, 1889, 1891, 1892, and 1896 ; the highest was 27·737 inches, in 1891.

In the year 1885 the highest readings in January and December were alike.

The numbers at the foot of the columns in Table I give the mean of the highest monthly readings in each year ; the highest was 27·556 inches, in 1882 ; and the lowest was 27·484 inches, in 1890.

The numbers in the last column of Table I show the mean of the 15 readings. The highest was 27·631 inches, in December ; and the next in order 27·620 inches in January ; then decreasing month by month to the lowest, 27·360 inches, in July ; and then increasing month by month to December. The mean of all the maximum readings was 27·520 inches.

By selecting from the published results the lowest barometer reading in each month, the following table was formed :—

TABLE II.—Showing the lowest reading of the barometer, corrected to 32° Fahrenheit, in every month in the 15 years, 1882 to 1896. Observations taken at 9 A.M.

Months.	YEARS.															Means of 15 years.
	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	
January...	ins. 27·314	ins. 27·122	ins. 27·137	ins. 27·134	ins. 27·182	ins. 26·978	ins. 27·174	ins. 27·268	ins. 27·133	ins. 27·096	ins. 27·132	ins. 27·102	ins. 27·268	ins. 27·236	ins. 27·036	ins. 27·154
February...	27·177	27·122	27·217	27·221	27·103	27·231	27·046	27·563	27·116	27·025	27·100	27·279	27·060	27·163	27·152	27·152
March...	27·182	27·198	27·110	26·990	27·086	26·995	27·194	27·047	27·127	27·233	27·158	27·060	27·071	27·018	26·970	27·099
April...	27·108	27·172	26·997	27·043	27·146	27·078	27·169	27·246	27·085	27·271	27·192	27·162	27·033	27·079	27·126	27·124
May...	27·118	27·198	27·193	27·245	27·301	27·253	27·259	27·207	27·226	27·164	27·130	27·093	27·223	27·252	27·120	27·199
June...	27·202	27·259	27·298	27·211	27·189	27·246	27·220	27·207	27·218	27·231	27·224	27·195	27·242	27·260	27·220	27·229
July...	27·161	27·189	27·182	27·191	27·149	27·186	27·189	27·099	27·127	27·169	27·125	27·167	27·173	27·161	27·153	27·161
August...	27·191	27·260	27·234	27·155	27·103	27·174	27·210	27·190	27·180	27·200	27·211	27·220	27·192	27·162	27·212	27·192
September...	27·298	27·236	27·234	27·268	27·264	27·263	27·280	27·224	27·321	27·273	27·246	27·265	27·297	27·245	27·266	27·265
October...	27·323	27·370	27·311	27·360	27·210	27·377	27·353	27·389	27·329	27·323	27·286	27·313	27·395	27·313	27·357	27·341
November...	27·320	27·217	27·359	27·348	27·331	27·239	27·090	27·353	27·271	27·174	27·271	27·393	27·303	27·237	27·282	27·287
December...	27·213	27·238	27·360	27·275	27·280	27·263	27·020	27·257	27·170	27·252	27·126	27·026	27·282	27·173	27·226	27·211
Means...	27·217	27·215	27·219	27·203	27·204	27·197	27·183	27·229	27·192	27·207	27·183	27·190	27·212	27·191	27·177	27·201

The reading of the barometer during the 15 years was below 27 inches, three times in March, and once in both January and April; there was no reading so low as 27 inches in the months of February, May, June, July, August, September, October, November, and December. The lowest reading in the 15 years was 26·970 inches, in March, 1896.

Selecting from Table II the extreme readings in each month, the lowest readings have varied—

		ins.		ins.
In January	....	from 26·978	in 1887 to	27·314 in 1882
February	....	27·025	1891	27·279 1893
March	....	26·970	1896	27·283 1891
April	....	26·997	1884	27·271 1891
May	....	27·093	1893	27·301 1886
June	....	27·189	1886	27·298 1884
July	....	27·099	1889	27·191 1885
August	....	27·103	1886	27·260 1883
September	....	27·224	1889	27·321 1890
October	....	27·286	1892	27·395 1894
November	....	27·090	1888	27·393 1893
December	....	27·020	1888	27·360 1884

The largest difference between these readings was 0·340 inch, in December; and the next in order was 0·336 inch, in January. The smallest were 0·092 inch, in July, and 0·097 inch, in September.

By selecting the extreme readings in each year, the lowest readings have varied—

	ins.		ins.
In 1882, from	27·108	in April	to 27·323 in October.
1863	27·122	Jan. & Feb.	27·370 October.
1884	26·997	April	27·360 December.
1885	26·990	March	27·360 October.
1886	27·086	March	27·331 November.
1887	26·978	January	27·377 October.
1888	27·020	December	27·353 October.
1889	27·047	March	27·389 October.
1890	27·085	April	27·329 October.
1891	27·025	February	27·323 October.
1892	27·100	February	27·286 October.
1893	27·026	December	27·393 November.
1894	27·033	April	27·395 October.
1895	27·018	March	27·313 October.
1896	26·970	March	27·357 October.

The difference between the lowest reading in the month of October, November, or December and the lowest reading in the same year, was the largest in the year 1887, when it was 0·399 inch; the next in order

being 0·357 inch, in 1896 ; and the smallest, 0·186 inch, in 1892 ; the next in order being 0·215 inch, in 1882.

The lowest reading for the year occurred in—

January, twice, viz., in 1883 and 1887 ; the lowest was 26·978 inches, in 1887.

February, three times, in 1883, 1891, and 1892 ; the lowest was 27·025 inches, in 1891.

March, five times, in 1885, 1886, 1889, 1895, and 1896 ; the lowest was 26·970 inches, in 1896.

April, four times, in 1882, 1884, 1890, and 1894 ; the lowest was 26·997 inches, in 1884.

December, twice, in 1888 and 1893 ; the lowest was 27·020 inches, in 1888.

In the year 1883, the lowest reading, viz., 27·122 inches, occurred in both January and February.

The numbers at the foot of the columns in Table II give the mean of the lowest monthly readings in each year. The lowest was 27·177 inches, in 1896 ; and the highest, 27·229 inches, in 1889.

The numbers in the last column of Table II show the mean of the 15 readings. The lowest was 27·099 inches, in March, increasing month by month to 27·229 inches, in June ; the mean for July was 27·161 inches, then increasing month by month to 27·341 inches, in October, and decreasing again to the lowest in March.

By taking the differences between the numbers in Table I and Table II the next table is formed :—

TABLE III.—Showing the range of barometer readings in every month in the 15 years, 1882 to 1896. Observations taken at 9 A.M.

Months.	YEARS.															Means of 15 years.
	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	
January ...	in. 0·407	in. 0·420	in. 0·531	in. 0·482	in. 0·405	in. 0·730	in. 0·428	in. 0·293	in. 0·480	in. 0·503	in. 0·472	in. 0·436	in. 0·295	in. 0·461	in. 0·562	in. 0·466
February ...	0·516	0·452	0·413	0·331	0·479	0·478	0·554	0·359	0·430	0·549	0·421	0·290	0·468	0·316	0·468	0·437
March ...	0·436	0·411	0·509	0·567	0·487	0·562	0·433	0·515	0·362	0·272	0·338	0·552	0·307	0·437	0·468	0·457
April ...	0·517	0·355	0·513	0·463	0·356	0·473	0·322	0·273	0·400	0·286	0·266	0·369	0·479	0·458	0·468	0·400
May ...	0·386	0·269	0·241	0·201	0·293	0·382	0·213	0·316	0·181	0·260	0·392	0·356	0·2·2	0·299	0·361	0·291
June ...	0·270	0·144	0·162	0·199	0·245	0·184	0·176	0·259	0·205	0·204	0·197	0·285	0·178	0·218	0·223	0·210
July ...	0·197	0·157	0·261	0·212	0·196	0·129	0·140	0·282	0·165	0·306	0·192	0·129	0·205	0·194	0·222	0·198
August ...	0·208	0·149	0·144	0·209	0·265	0·147	0·172	0·166	0·169	0·174	0·131	0·200	0·203	0·163	0·227	0·182
September ...	0·262	0·297	0·219	0·247	0·237	0·333	0·206	0·245	0·175	0·189	0·217	0·137	0·175	0·248	0·225	0·227
October ...	0·214	0·160	0·288	0·215	0·203	0·201	0·205	0·237	0·269	0·178	0·258	0·243	0·212	0·195	0·232	0·221
November ...	0·253	0·363	0·272	0·234	0·292	0·237	0·510	0·263	0·306	0·445	0·266	0·275	0·196	0·455	0·374	0·316
December ...	0·404	0·375	0·277	0·340	0·376	0·352	0·714	0·416	0·363	0·485	0·491	0·557	0·244	0·474	0·445	0·421
Means...	0·340	0·296	0·319	0·308	0·319	0·351	0·339	0·302	0·292	0·321	0·303	0·319	0·281	0·327	0·356	0·318

The greatest ranges appear in the winter and spring months, and the least in the summer and autumn months. The greatest monthly range in the 15 years was 0·730 inch, in January, 1887; and the next in order was 0·714 inch, in December, 1888; the least range was 0·129 inch, in July, 1887 and 1893; and the next in order was 0·131 inch, in August, 1892.

By selecting from Table III the smallest and largest ranges in each month, the range of readings have varied—

		in.		in.
In January	....	from 0·293	in 1889 to	0·730 in 1887
February	....	„ 0·290	„ 1893 „	0·554 „ 1888
March	....	„ 0·272	„ 1891 „	0·567 „ 1885
April	....	„ 0·266	„ 1892 „	0·517 „ 1882
May	....	„ 0·181	„ 1890 „	0·386 „ 1882
June	....	„ 0·144	„ 1883 „	0·285 „ 1893
July	....	„ 0·129	„ 1887 &	
			1893 „	0·306 „ 1891
August	....	„ 0·131	„ 1892 „	0·265 „ 1886
September	....	„ 0·137	„ 1893 „	0·333 „ 1887
October	....	„ 0·160	„ 1883 „	0·288 „ 1884
November	....	„ 0·196	„ 1894 „	0·510 „ 1888
December	....	„ 0·244	„ 1894 „	0·714 „ 1888

The greatest difference of range was 0·470 inch, in December; the next in order was 0·437 inch, in January. The smallest difference was 0·128 inch, in October; the next in order was 0·134 inch, in August.

In like manner the monthly range of pressure has varied—

	in.		in.
In 1882, from	0·197	in July	to 0·517 in April.
1883	„ 0·144	„ June	„ 0·452 „ February.
1884	„ 0·144	„ August	„ 0·531 „ January.
1885	„ 0·199	„ June	„ 0·567 „ March.
1886	„ 0·196	„ July	„ 0·487 „ March.
1887	„ 0·129	„ July	„ 0·730 „ January.
1888	„ 0·140	„ July	„ 0·714 „ December.
1889	„ 0·166	„ August	„ 0·515 „ March.
1890	„ 0·165	„ July	„ 0·480 „ January.
1891	„ 0·174	„ August	„ 0·549 „ February.
1892	„ 0·131	„ August	„ 0·491 „ December.
1893	„ 0·129	„ July	„ 0·557 „ December.
1894	„ 0·175	„ September	„ 0·507 „ March.
1895	„ 0·163	„ August	„ 0·474 „ December.
1896	„ 0·222	„ July	„ 0·562 „ January.

The greatest monthly range in the year has occurred in—

January, four times, viz., in 1884, 1887, 1890, and 1896; the greatest was 0·730 inch, in 1887.

February, twice, in 1883 and 1891; the greatest was 0·549 inch, in 1891.

March, four times, in 1885, 1886, 1889, and 1894; the greatest was 0·567 inch, in 1885.

April, once; 0·517 inch, in 1882.

December, four times, in 1888, 1892, 1893, and 1895; the greatest was 0·714 inch, in 1888.

The least monthly range in the year has occurred in—

June, twice, in 1883 and 1885; the least was 0·144 inch, in 1883.

July, seven times, in 1882, 1886, 1887, 1888, 1890, 1893, and 1896; the least was 0·129 inch, in 1887 and 1893.

August, five times, in 1884, 1889, 1891, 1892, and 1895; the least was 0·131 inch, in 1892.

September, once; 0·175 inch, in 1894.

The numbers at the foot of the columns in Table III give the mean monthly range in each year. The largest was 0·356 inch, in 1896; and the smallest was 0·281 inch, in 1894.

The numbers in the last column of Table III show the mean range in each month. The largest was 0·466 inch, in January; and the next in order, 0·457 inch, in March, decreasing month by month to the smallest, 0·182 inch, in August, then increasing month by month to January. The mean monthly range for the 15 years was 0·318 inch.

By selecting in each year from Table I the highest reading in the year, and from Table II the lowest reading, the range of readings in the year is found as follows:—

			Highest.	Lowest.	Annual Range.
			ins.	ins.	in.
In 1882	....	....	27·721	27·108	0·613
1883	....	....	27·613	27·122	0·491
1884	....	....	27·668	26·997	0·671
1885	....	....	27·616	26·990	0·626
1886	....	....	27·656	27·086	0·570
1887	....	....	27·709	26·978	0·731
1888	....	....	27·734	27·020	0·714
1889	....	....	27·673	27·047	0·626
1890	....	....	27·613	27·085	0·528
1891	....	....	27·737	27·025	0·712
1892	....	....	27·617	27·100	0·517
1893	....	....	27·668	27·026	0·642
1894	....	....	27·607	27·033	0·574
1895	....	....	27·692	27·018	0·674
1896	....	....	27·671	26·970	0·701

(To face p. 131.)

TABLE IV.—Showing the mean reading of the Barometer corrected for temperature in every month, at Jerusalem, from 1861 to 1896. Observations taken daily at 9 A.M.

Months.	YEARS.																																Mean for 36 years.				
	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892		1893	1894	1895	1896
January	ins. 27·405	ins. 27·448	ins. 27·480	ins. 27·472	ins. 27·431	ins. 27·435	ins. 27·466	ins. 27·456	ins. 27·447	ins. 27·464	ins. 27·481	ins. 27·450	ins. 27·512	ins. 27·436	ins. 27·468	ins. 27·519	ins. 27·448	ins. 27·469	ins. 27·487	ins. 27·497	ins. 27·505	ins. 27·516	ins. 27·380	ins. 27·442	ins. 27·394	ins. 27·435	ins. 27·375	ins. 27·420	ins. 27·431	ins. 27·436	ins. 27·415	ins. 27·432	ins. 27·298	ins. 27·336	ins. 27·465	ins. 27·365	ins. 27·442
February	27·566	27·443	27·488	27·430	27·332	27·437	27·507	27·383	27·464	27·456	27·454	27·448	27·426	27·426	27·368	27·426	27·439	27·442	27·489	27·429	27·329	27·460	27·419	27·386	27·442	27·356	27·455	27·368	27·441	27·380	27·387	27·369	27·447	27·347	27·379	27·450	27·424
March	27·406	27·452	—	27·411	27·393	27·400	27·317	27·363	27·324	27·399	27·416	27·379	27·315	27·371	27·335	27·353	27·458	27·420	27·388	27·378	27·419	27·445	27·406	27·381	27·369	27·366	27·416	27·424	27·399	27·331	27·417	27·372	27·330	27·342	27·308	27·300	27·378
April	27·420	27·420	27·341	27·306	27·412	27·357	27·339	27·361	27·404	27·389	27·347	27·355	27·397	27·402	27·418	27·396	27·346	27·344	27·415	27·349	27·369	27·333	27·336	27·348	27·319	27·379	27·338	27·332	27·388	27·309	27·398	27·320	27·378	27·339	27·331	27·380	27·376
May	27·421	27·474	27·470	27·468	27·353	27·374	27·345	27·395	27·378	27·411	27·379	27·378	27·384	27·417	27·401	27·383	27·417	27·352	27·404	27·370	27·371	27·358	27·354	27·355	27·365	27·423	27·398	27·359	27·329	27·365	27·299	27·325	27·341	27·362	27·405	27·345	27·381
June	27·397	27·400	27·405	27·323	27·466	27·317	27·345	27·308	27·387	27·331	27·319	27·376	27·373	27·354	27·319	27·386	27·397	27·326	27·301	27·331	27·382	27·346	27·321	27·287	27·332	27·323	27·319	27·326	27·329	27·322	27·364	27·310	27·434	27·338	27·361	27·334	27·350
July	27·333	27·379	27·360	27·279	27·289	27·267	27·276	27·282	27·306	27·255	27·256	27·281	27·262	27·242	27·276	27·282	27·328	27·188	27·268	27·284	27·296	27·272	27·282	27·285	27·286	27·251	27·254	27·275	27·236	27·217	27·268	27·250	27·239	27·264	27·277	27·289	27·276
August	27·349	27·378	27·399	27·300	27·277	27·281	27·295	27·306	27·319	27·279	27·292	27·281	27·314	27·301	27·321	27·308	27·356	27·271	27·285	27·317	27·281	27·304	27·314	27·297	27·257	27·263	27·248	27·289	27·260	27·262	27·306	27·280	27·309	27·284	27·247	27·303	27·298
September	27·428	27·445	27·471	27·384	27·388	27·351	27·354	27·394	27·368	27·401	27·373	27·350	27·378	27·385	27·409	27·383	27·420	27·322	27·385	27·398	27·374	27·402	27·413	27·373	27·371	27·391	27·371	27·381	27·348	27·398	27·387	27·357	27·334	27·371	27·389	27·355	27·383
October	27·511	27·499	27·530	27·454	27·486	27·437	27·447	27·457	27·505	27·447	27·403	27·441	27·456	27·457	27·462	27·427	27·450	27·425	27·480	27·488	27·456	27·432	27·490	27·449	27·467	27·442	27·478	27·441	27·469	27·465	27·407	27·419	27·416	27·465	27·395	27·453	27·455
November	27·549	27·442	27·502	27·428	27·435	27·427	27·476	27·459	27·499	27·543	27·461	27·464	27·432	27·458	27·428	27·449	27·462	27·539	27·493	27·493	27·441	27·456	27·448	27·470	27·448	27·452	27·462	27·420	27·489	27·439	27·472	27·405	27·515	27·398	27·455	27·482	27·464
December	27·421	27·482	27·413	27·448	27·444	27·468	27·402	27·473	27·523	27·492	27·483	27·470	27·467	27·490	27·471	27·511	27·453	27·523	27·459	27·426	27·451	27·447	27·442	27·486	27·452	27·504	27·452	27·463	27·454	27·386	27·463	27·463	27·389	27·416	27·429	27·494	27·458
Means...	27·434	27·438	27·442	27·392	27·392	27·379	27·380	27·386	27·410	27·405	27·388	27·389	27·393	27·394	27·388	27·401	27·413	27·385	27·400	27·396	27·389	27·398	27·384	27·380	27·374	27·385	27·381	27·375	27·381	27·359	27·382	27·358	27·369	27·357	27·370	27·379	27·390

The highest reading in the 15 years was 27·737 inches, in December, 1891; the lowest was 26·970 inches, in December, 1896. The extreme range in the 15 years was 0·767 inch.

The monthly mean reading of the barometer from the year 1861 to 1881 in Table IV has been copied from Dr. Chaplin's paper on the "Climate of Jerusalem," published in the *Quarterly Statement* for January, 1883, and those from 1882 to 1896 have been taken from my reports published in the *Quarterly Statements* between July, 1893, and January, 1898.

From Table IV it will be seen that the highest monthly mean reading in the 36 years was 27·566 inches, in February, 1861; and the next in order were 27·549 inches, in November of the same year, and 27·543 inches, in November, 1870. The lowest mean monthly reading was 27·188 inches, in July, 1878; and the next in order were 27·217 inches, in July, 1890, and 27·236 inches, in July, 1889.

The monthly mean reading varied—

		ins.		ins.
In January	....	from 27·298	in 1893	to 27·519 in 1876
February	....	" 27·329	" 1881	" 27·566 " 1861
March	....	" 27·300	" 1896	" 27·458 " 1877
April	....	" 27·306	" 1864	" 27·420 " 1861 & 1862
May	....	" 27·299	" 1891	" 27·474 " 1862
June	....	" 27·287	" 1884	" 27·466 " 1865
July	....	" 27·188	" 1878	" 27·379 " 1862
August	....	" 27·247	" 1895	" 27·399 " 1863
September	....	" 27·322	" 1878	" 27·471 " 1863
October	....	" 27·395	" 1895	" 27·530 " 1863
November	....	" 27·398	" 1894	" 27·549 " 1861
December	....	" 27·386	" 1890	" 27·523 " 1878

These differences of mean monthly readings were small; the least difference was 0·114 inch, in April; the next in order was 0·135 inch, in October. The largest was 0·237 inch, in February; and the next in order was 0·221 inch, in January.

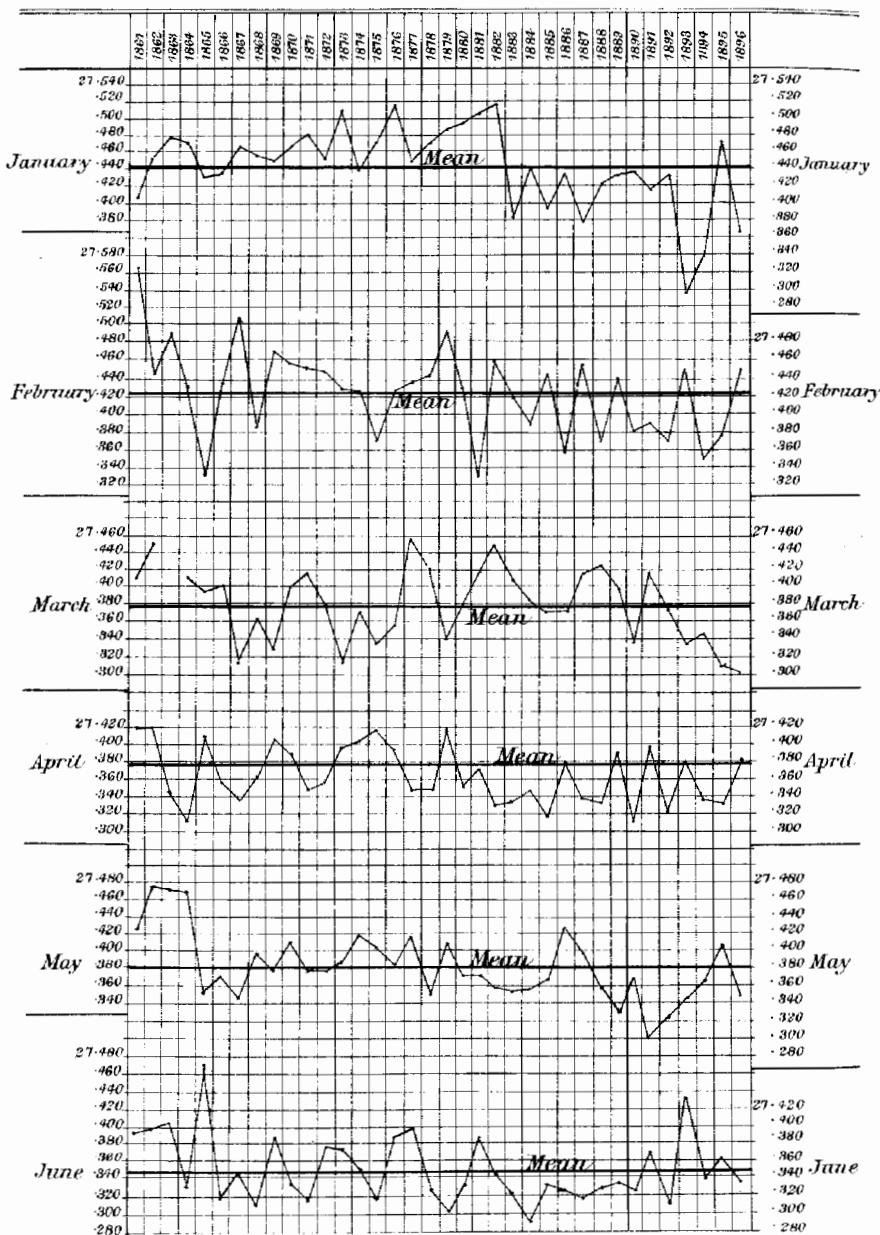
By extracting from Table IV the highest and lowest mean reading in every year, the monthly mean has varied :—

	ins.		ins.	
In 1861	from 27·566	in February	to 27·333	in July.
1862	„ 27·499	October	27·378	August.
1863	„ 27·530	October	27·360	July.
1864	„ 27·472	January	27·279	July.
1865	„ 27·486	October	27·277	August.
1866	„ 27·468	December	27·267	July.
1867	„ 27·507	February	27·276	July.
1868	„ 27·473	December	27·282	July.
1869	„ 27·523	December	27·306	July.
1870	„ 27·543	November	27·255	July.
1871	„ 27·483	December	27·256	July.
1872	„ 27·470	December	27·281	July and August.
1873	„ 27·512	January	27·262	July.
1874	„ 27·490	December	27·242	July.
1875	„ 27·471	December	27·276	July.
1876	„ 27·519	January	27·282	July.
1877	„ 27·458	March	27·328	July.
1878	„ 27·539	November	27·188	July.
1879	„ 27·493	November	27·268	July.
1880	„ 27·497	January	27·284	July.
1881	„ 27·505	January	27·181	August.
1882	„ 27·516	January	27·272	July.
1883	„ 27·490	October	27·282	July.
1884	„ 27·486	December	27·285	July.
1885	„ 27·467	October	27·257	August.
1886	„ 27·504	December	27·251	July.
1887	„ 27·462	November	27·248	August.
1888	„ 27·463	December	27·275	July.
1889	„ 27·489	November	27·236	July.
1890	„ 27·465	October	27·217	July.
1891	„ 27·472	November	27·268	July.
1892	„ 27·463	December	27·250	July.
1893	„ 27·515	November	27·239	July.
1894	„ 27·485	October	27·264	July.
1895	„ 27·465	January	27·247	August.
1896	„ 27·494	December	27·289	July.

The smallest difference between the highest and lowest means in the same year was 0·121 inch, in 1862; the next in order was 0·130 inch, in 1877. The largest difference was 0·351 inch, in 1878; and the next in order was 0·288 inch, in 1870.

The highest monthly reading of the barometer in the year has occurred in—

DIAGRAMS SHOWING THE MEAN READING OF THE BAROMETER IN EVERY MONTH AND YEAR AND THE DEPARTURE ABOVE OR BELOW THE MEAN. FROM THE YEAR 1861 TO 1896.



DIAGRAMS SHOWING THE MEAN READING OF THE BAROMETER IN EVERY MONTH AND YEAR AND THE DEPARTURE ABOVE OR BELOW THE MEAN. FROM THE YEAR 1861 TO 1896.

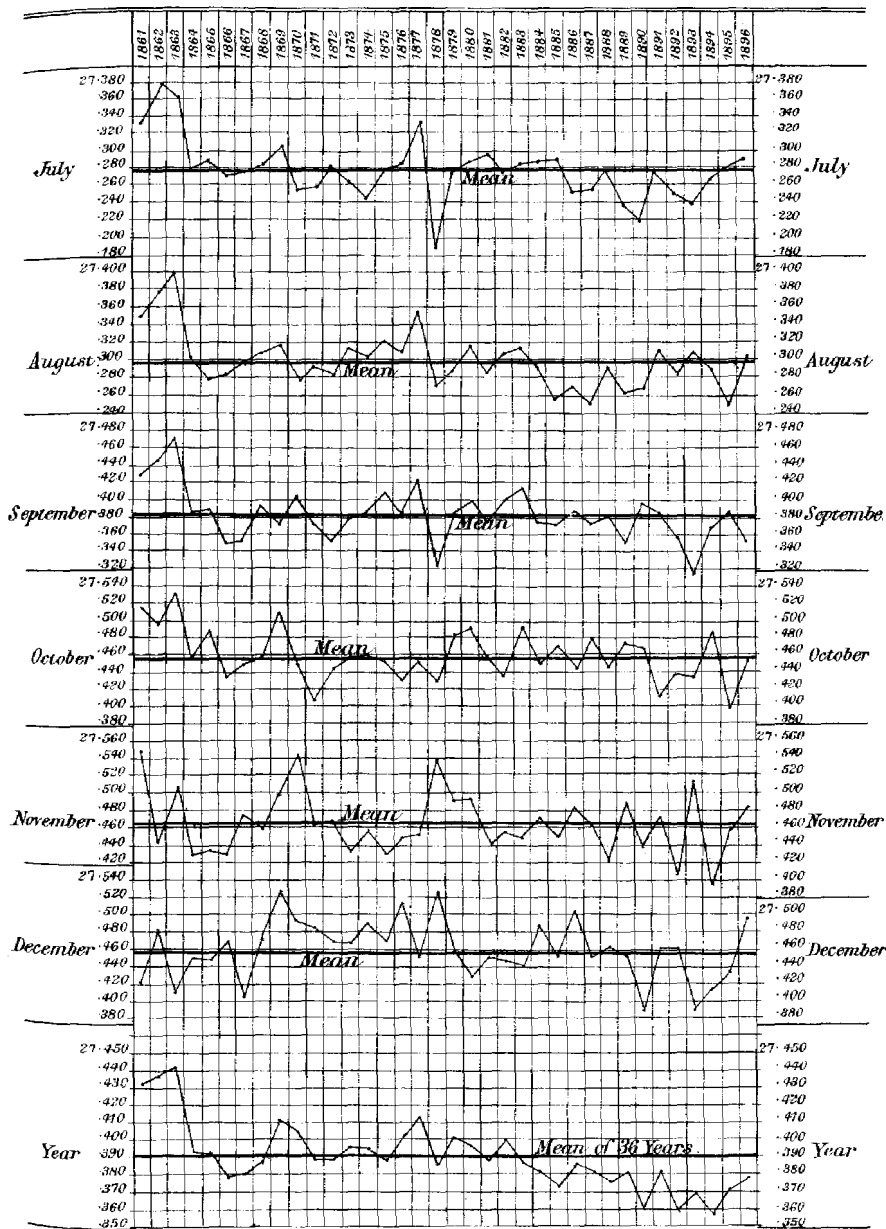


TABLE V.—Showing the departure of the mean reading of the barometer in every month above or below its mean for 36 years.

Months.	YEARS.																																			
	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896
January ...	in. - '037	in. + '006	in. + '038	in. + '030	in. - '011	in. - '007	in. + '024	in. + '014	in. + '005	in. + '022	in. + '039	in. + '008	in. + '070	in. - '006	in. + '026	in. + '077	in. + '006	in. + '027	in. + '043	in. + '035	in. + '063	in. + '074	in. - '062	in. '000	in. - '048	in. - '007	in. - '067	in. - '022	in. - '011	in. - '006	in. - '027	in. - '010	in. - '144	in. - '106	in. + '023	in. - '077
February ...	+ '142	+ '019	+ '064	+ '006	- '086	+ '013	+ '093	- '041	+ '040	+ '032	+ '030	+ '024	+ '002	+ '002	- '056	+ '002	+ '015	+ '018	+ '065	+ '005	- '095	+ '042	- '005	- '038	+ '018	- '068	+ '031	- '056	+ '017	- '044	- '037	- '055	+ '023	- '077	- '045	+ '026
March ...	+ '028	+ '074	—	+ '033	+ '015	+ '022	- '061	- '015	- '054	+ '021	+ '038	+ '001	- '063	- '007	- '043	- '025	+ '080	+ '042	- '040	'000	+ '041	+ '067	+ '028	+ '003	- '009	- '012	+ '038	+ '046	+ '021	- '047	+ '039	- '006	- '048	- '036	- '070	- '078
April ...	+ '044	+ '044	- '035	- '070	+ '036	- '019	- '037	- '015	+ '028	+ '013	- '029	- '021	+ '021	+ '026	+ '042	+ '020	- '030	- '032	+ '039	- '027	- '007	- '043	- '040	- '028	- '057	+ '003	- '038	- '044	+ '012	- '067	+ '022	- '056	+ '002	- '037	- '045	+ '004
May ...	+ '040	+ '093	+ '089	+ '087	- '028	- '007	- '036	+ '014	- '003	+ '030	- '002	- '003	+ '003	+ '036	+ '020	+ '002	+ '036	- '029	+ '023	- '011	- '010	- '023	- '027	- '026	- '016	+ '042	+ '017	- '022	- '052	- '016	- '082	- '056	- '040	- '019	+ '024	- '036
June ...	+ '047	+ '050	+ '055	- '022	+ '116	- '033	- '005	- '042	+ '037	- '019	- '031	+ '026	+ '023	+ '004	- '031	+ '036	+ '047	- '024	- '049	- '019	+ '032	- '004	- '029	- '063	- '018	- '027	- '031	- '024	- '021	- '028	+ '014	- '010	+ '084	- '012	+ '011	- '016
July ...	+ '057	+ '103	+ '084	+ '003	+ '013	- '009	'000	+ '006	+ '030	- '021	- '020	+ '005	- '014	- '034	'000	+ '006	+ '052	- '088	- '008	+ '008	+ '020	- '004	+ '006	+ '009	+ '010	- '025	- '022	- '001	- '040	- '039	- '008	- '026	- '037	- '012	+ '001	+ '013
August ...	+ '051	+ '080	+ '101	+ '002	- '021	- '017	- '003	+ '008	+ '021	- '019	- '006	- '017	+ '016	+ '003	+ '023	+ '010	+ '058	- '027	- '013	+ '019	- '017	+ '006	+ '016	- '001	- '041	- '030	- '050	- '009	- '038	- '036	+ '008	- '018	+ '011	- '014	- '051	+ '005
September ...	+ '045	+ '062	+ '088	+ '001	+ '005	- '032	- '029	+ '011	- '015	+ '018	- '010	- '033	- '005	+ '002	+ '025	'000	+ '037	- '061	+ '002	+ '015	- '009	+ '019	+ '030	- '010	- '012	+ '008	- '012	- '002	- '035	+ '015	+ '004	- '026	- '049	- '012	+ '006	- '028
October ...	+ '056	+ '044	+ '075	- '001	+ '031	- '018	- '008	+ '002	+ '050	- '008	- '052	- '014	+ '001	+ '002	- '003	- '028	- '005	- '030	+ '025	+ '033	+ '001	- '023	+ '035	- '006	+ '012	- '013	+ '023	- '014	+ '014	+ '010	- '048	- '036	- '039	+ '030	- '060	- '002
November ...	+ '035	- '022	+ '038	- '036	- '029	- '037	+ '013	- '005	+ '035	+ '079	- '003	'000	- '032	- '006	- '036	- '015	- '012	+ '075	+ '029	+ '029	- '023	- '008	- '016	+ '006	- '016	+ '018	- '002	- '044	+ '025	- '025	+ '008	- '059	+ '051	- '066	- '009	+ '018
December ...	- '037	+ '024	- '045	- '010	- '014	+ '010	- '056	+ '015	+ '065	+ '034	+ '025	+ '012	+ '009	+ '032	+ '013	+ '053	- '005	+ '065	+ '001	- '032	- '007	- '011	- '016	+ '028	- '006	+ '046	- '006	+ '065	- '004	- '072	+ '005	+ '005	- '069	- '042	- '029	+ '036
Means...	+ '043	+ '048	+ '050	+ '002	+ '002	- '011	- '010	- '004	+ '020	+ '015	- '002	- '001	+ '003	+ '004	- '002	+ '011	+ '023	- '005	+ '010	+ '006	- '001	+ '008	- '007	- '010	- '016	- '005	- '010	- '016	- '009	- '031	- '009	- '032	- '021	- '034	- '020	- '011

The sign + indicates above the mean, and the sign - below the mean.

January, seven times, viz., in 1864, 1873, 1876, 1880, 1881, 1882, and 1895; the highest was 27·519 inches, in 1876.

February, twice, in 1861 and 1867; the highest was 27·566 inches, in 1861.

March, once; 27·458 inches, in 1877.

October, seven times, in 1862, 1863, 1865, 1883, 1885, 1890, and 1894; the highest was 27·530 inches, in 1863.

November, seven times, in 1870, 1878, 1879, 1887, 1889, 1891, and 1893; the highest was 27·543 inches, in 1870.

December, twelve times, in 1866, 1868, 1869, 1871, 1872, 1874, 1875, 1884, 1886, 1888, 1892, and 1896; the highest was 27·523 inches, in 1869.

The highest readings have, therefore, always been during the rainy season.

The lowest monthly mean reading in the year has occurred—

Once in both July and August, viz., in the year 1872, the reading being 27·281 inches.

In August in six years, viz., 1862, 1865, 1881, 1885, 1887, and 1895; the lowest was 27·247 inches, in 1865.

And in July in all other years; the lowest was 27·188 inches, in 1878.

The lowest readings of the barometer have thus always been in the rainless season.

The numbers at the foot of the columns in Table IV give the mean reading of the barometer for each year. The highest was 27·442 inches, in 1863; and the lowest, 27·357 inches, in 1894.

The three highest consecutive means are in the first three years, viz., 1861, 1862, and 1863, and their mean is 27·438 inches. The three lowest consecutive means are nearly at the end of the series, viz., in 1892, 1893, and 1894, and their mean is 27·361 inches. The mean of the first 12 years is 27·403 inches; of the second, 27·393 inches; and of the third is 27·373 inches, indicating a decreasing pressure.

The numbers in the last column of Table IV show the mean of the 36 monthly means. The highest was 27·464 inches, in November; and the lowest, 27·276 inches, in July. The mean atmospheric pressure for the 36 years was 27·390 inches.

By taking the difference between the numbers in the last column of Table IV and every reading in this table, the next table is formed.

In Table V there are six instances when the mean of the month has been the same as its average, viz., in January, 1884; March, 1880; July, 1867 and 1875; September, 1876; and November, 1872.

The greatest number of differences with plus (+) sign appear at the beginning of the table, and those with the minus (−) sign towards the end of the table.

The largest number with a + sign is 0·142 inch, in February, 1861;

and the next in order are 0.116 inch, in June, 1865; 0.103 inch, in July, 1862; 0.101 inch, in August, 1863; and 0.093 inch, in May, 1862, and February, 1865. All the remainder of + signs are below 0.090 inch.

The largest number with a - sign is 0.144 inch in January, 1893; the next in order are 0.106 inch, in January, 1894, and 0.095 inch, in February, 1881. All the remainder are less than 0.090 inch.

In the year 1861, 10 of the months have the + sign; in 1862, 11; in 1863 and 1869, each have 9; there are 8 in the years 1870, 1873, 1874, 1876, 1877, and 1879; and there are only four other years with so many as 7, viz., 1864, 1868, 1880, and 1891.

In the years 1892 and 1894, 11 of the months are affected with the - sign; in the years 1888 and 1890, there are 10; in 1866 and 1885, 9; in the years 1867, 1871, and 1887, 8; and there are 7 in the years 1878, 1881, 1882, 1883, 1884, 1886, 1889, 1893, and 1895.

In the bottom line of Table V it will be seen that the mean pressure for the year was above its average in the first 5 years, and was above in 9 years between 1866 and 1882; at or slightly below its average in 8 of these 17 years, and below in every year from 1883 to 1896, indicating a decreasing atmospheric pressure.

By laying down on diagrams every reading in Table IV, the departure from the mean in every month and the year is shown.

From the diagrams it will be seen that the atmospheric pressure, in the months from January to June, excepting March, was generally above its average for the first 20 years of the series, and chiefly below afterwards. In March it was above till the year 1891, and mostly below from 1892. In the months of July, August, and September the pressure was generally above till the year 1883, and below from the year 1884. In the months of October and November the excesses above, and deficiencies below their means nearly balanced each other, and in December the atmospheric pressure was generally above its average between the years 1868 and 1888, and mostly below from 1861 to 1867 and from 1889.

The diagram for the year shows that at the beginning of the series the atmospheric pressure was most above the mean, and that towards the end of the series it was most below; that it was at, above, or near the mean between the years 1866 and 1882, and below in every year from 1883.
