

the year was 4·64 inches, in November, and the next in order, 4·03 inches, in February. The total fall for the year was 18·75 inches. At Jerusalem the total fall for the year was 32·90 inches.

RESULTS OF METEOROLOGICAL OBSERVATIONS TAKEN AT JERUSALEM IN THE YEAR 1896.

By JAMES GLAISHER, F.R.S.

THE numbers in column 1 of this table show the highest reading of the barometer in each month; of these the highest, as usual, are in the winter, and the lowest in the summer months; the maximum for the year was 27·671 inches, in December, and the next in order, 27·656 inches, in November. The highest reading in the preceding 35 years, viz., 1861 to 1895 inclusive, was 27·816 inches, in December, 1879.

In column 2 the lowest reading of the barometer in each month is shown; the minimum for the year was 26·970 inches, in March, and the next in order, 27·036 inches, in January. The lowest reading in the preceding 35 years was 26·972 inches, in April, 1863, and February, 1865.

The numbers in the 3rd column show the extreme range of readings in each month; the smallest was 0·232 inch, in July, and the next in order, 0·223 inch, in June; the largest was 0·562 inch, in January; and the next in order, 0·468 inch, in each of the months of February, March, and April. The mean monthly range for the year was 0·356 inch. The mean for the preceding 35 years was 0·309 inch.

The range of barometer readings in the year was 0·701 inch. The largest range in the preceding 35 years was 0·742 inch, in 1872; and the smallest, 0·491 inch, in 1833.

The numbers in the 4th column show the mean monthly pressure of the atmosphere; the highest was 27·494 inches, in December, and the next in order, 27·482 inches, in November; the lowest was 27·289 inches, in July, and the next in order, 27·300 inches, in March. The mean yearly pressure was 27·379 inches. The highest mean yearly pressure in the preceding 35 years was 27·443 inches, in 1861, and the lowest, 27·357 inches, in 1894. The mean for the 35 years was 27·389 inches.

The temperature of the air reached 90° on June 4th, and there were 3 other days in June when the temperature reached or exceeded 90°. In the preceding 14 years the earliest day in the year the temperature was 90° was March 25th in the year 1888; in July it reached or exceeded 90° on 6 days; in August, on 17 days; and in September, on 2 days, the 29th being the last day in the year of a temperature as high as 90°. In the preceding 14 years the latest day in the year this temperature reached 90° was October 23rd, 1887. The temperature reached or exceeded 90° on 29 days during the year. In the year 1892

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MONTHLY METEOROLOGICAL TABLE

Deduced from observations taken at Jerusalem, by JOSEPH GAMEL, in a garden, well within the city, about 2,500 feet above the level of the Mediterranean Sea, open on all sides.
Latitude, 31° 46' 40" N., Longitude, 35° 13' 30" E.

Months.	Pressure of atmosphere in month— Corrected to 32° Fahrenheit.				Temperature of the air at 9 a.m.							Mean reading at 9 a.m.			Vapour at 9 a.m.			Degree of humidity.	Weight of a cubic foot of air.	Wind. Relative proportions of.								Mean amount of cloud.	Rain.						
	Highest.	Lowest.	Range.	Mean.	Highest.	Lowest.	Range.	Mean of all highest.	Mean of all lowest.	Mean daily range.	Mean.	Dry bulb.	Wet bulb.	Dew point.	Elastic force of vapour.	Weight in a cubic foot of air.	Additional weight required for saturation.			N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.		Number of days on which it fell.	Amount collected.					
																															°				
1896.	in.	in.	in.	in.	°	°	°	°	°	°	°	°	°	in.	grs.	grs.	°	grs.																	in.
January	27·598	27·036	0·562	27·365	57·0	28·0	29·0	49·8	37·9	11·9	43·8	45·0	43·6	42·0	·266	3·1	0·4	89	502	0	4	2	3	1	15	3	3	7·4	19	9·61					
February	27·620	27·152	0·468	27·450	68·0	30·0	38·0	52·0	38·6	13·4	45·8	48·0	45·0	41·7	·263	3·0	0·8	79	491	1	3	3	1	0	7	3	11	6·4	12	8·65					
March	27·438	26·970	0·468	27·300	68·0	36·0	32·0	58·0	42·2	15·8	50·1	52·1	49·3	46·4	·316	3·6	0·8	81	494	2	1	1	4	1	5	6	11	7·1	14	5·60					
April	27·594	27·126	0·468	27·380	85·0	36·0	49·0	66·4	49·1	17·8	57·8	60·7	54·5	49·1	·349	3·9	2·1	66	487	0	5	1	5	0	2	4	13	5·9	6	2·14					
May	27·481	27·120	0·361	27·345	89·0	47·0	42·0	76·8	57·5	19·3	67·2	69·1	58·0	49·3	·352	3·9	3·9	50	478	1	3	1	8	0	2	7	9	5·3	3	0·42					
June	27·443	27·220	0·223	27·334	98·2	52·0	46·2	82·4	61·3	21·1	71·9	75·6	61·0	50·5	·369	3·9	5·6	42	472	2	5	0	2	9	0	4	17	0·3	0	0·00					
July	27·376	27·153	0·222	27·289	97·8	59·0	38·8	86·7	65·4	21·3	76·0	78·4	64·1	54·2	·421	4·5	5·9	43	469	1	1	1	2	0	5	4	17	1·1	0	0·00					
August	27·439	27·212	0·227	27·303	103·0	62·5	40·5	91·3	69·5	21·8	80·4	81·8	67·9	58·5	·493	5·3	6·3	45	466	1	1	2	0	0	0	3	24	1·0	0	0·00					
September	27·491	27·266	0·225	27·365	91·8	56·0	35·8	84·5	63·5	21·0	74·0	75·1	65·2	58·1	·484	5·3	4·2	55	482	1	1	1	0	0	6	3	18	2·1	0	0·00					
October	27·589	27·357	0·232	27·453	89·0	56·0	33·0	81·0	63·1	17·9	72·0	73·8	59·3	48·7	·368	4·0	5·0	44	476	3	9	4	1	0	2	1	11	2·3	2	0·04					
November	27·656	27·282	0·374	27·482	77·8	47·0	39·8	67·7	54·0	13·7	60·8	62·9	54·4	47·1	·374	3·6	2·3	60	486	0	11	4	2	0	4	1	8	3·8	9	2·08					
December	27·671	27·226	0·445	27·494	72·0	39·5	32·5	61·3	49·7	11·6	55·5	56·6	49·6	43·1	·280	3·2	2·0	61	493	0	12	4	2	1	5	2	5	4·3	6	4·46					
Means	27·533	27·177	0·366	27·379	83·1	45·8	37·3	71·5	54·3	17·2	62·9	64·9	56·0	49·1	·357	3·9	3·3	60	483	sum. 12	sum. 56	sum. 24	sum. 30	sum. 3	sum. 53	sum. 41	sum. 147	3·9	sum. 71	sum. 32·90					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30					

the number of days of this high temperature was 23, and in 1887 was 73; the average of the 14 years was 39. The highest temperature in the year was 103°, on August 14th; the highest in the preceding 14 years, viz., 1882 to 1895, was 108°, in June, 1894.

The temperature of the air was as low as 28° on January 31st, and was as low or lower than 40° on 20 other nights in January; in February on 20 nights; in March on 15 nights; in April on 4 nights; and in December on 1 night. Thus the temperature was as low or lower than 40° on 61 nights during the year. In the year 1892 the number of nights of this low temperature was 19, and in 1894 was 113; the average for the 14 years was 55.

The highest temperature of the air in each month is shown in column 5. In January it was 57°, being the lowest in the year, and 3°·6 below the mean of the 14 high day temperatures in January. The high day temperature was also below its average in March, May, September, and October, and above in the remaining months. The mean for the year was 83°·1, being 0°·9 below the average of 14 years.

The lowest temperature of the air in each month is shown in column 6. In January it was 28°, being the lowest in the year, and 3°·5 below the average. The low night temperature was also below its average in February, April, and June, and above in the remaining months. The mean for the year was 45°·8, being 1°·5 above the average of 14 years.

The range of temperature in each month is shown in column 7; the numbers vary from 29° in January to 49° in April. The mean range for the year was 37°·3, being 2°·4 less than the average of 14 years.

The range of temperature in the year was 75°. The largest in the preceding 14 years was 81°, in 1894; and the smallest, 63°·5, in the year 1885.

The mean of all the high day temperatures in each month is shown in column 8. The lowest was 49°·8, in January, being 1°·3 lower than the average. The highest was 91°·3, in August, being 2°·1 higher than the average. The mean for the year was 71°·5, being 0°·7 below the average of 14 years.

The mean of all the low night temperatures in each month is shown in column 9. The lowest was 37°·9, in January, being 0°·3 lower than the average; the highest was 69°·5, in August, being 6° higher than the average. The mean for the year was 54°·3, or 2°·1 above the average of 14 years.

In column 10 the mean daily range of temperature in each month is shown; the smallest was 11°·6, in December; and the next in order, 11°·9, in January; the greatest was 21°·8, in August, and the next in order 21°·3, in July. The mean for the year was 17°·2, being 2°·8 less than the average. The smallest ranges in the preceding 14 years were 9°·3, in January, 1883, and 9°·7, in December, 1890; the greatest were 33°·8, in August, 1886; and 30°·1, in the same month of 1887. The smallest mean for the year was 17°·8, in 1883; and the greatest, 24°·3, in 1886.

The mean temperature of the air, as found from the maximum and

minimum temperatures only, is shown in each month in column 11; the lowest was $43^{\circ}8$, in January; and the next in order, $45^{\circ}3$, in February; the highest was $80^{\circ}4$, in August; and the next in order, 76° , in July. The mean for the year was $62^{\circ}9$, being $0^{\circ}7$ above the average of 14 years. The lowest mean temperatures in the preceding 14 years were $39^{\circ}8$, in January, 1890; and 42° , in December, 1886; the highest were $81^{\circ}2$, in August, 1890, and $81^{\circ}1$, in July, 1888. The highest mean for the year was $63^{\circ}7$, in 1885, and the lowest, 60° , in 1894.

January was the coldest month of the year, and was below its average both by day and night.

The numbers in column 12 are the mean readings of a dry-bulb thermometer. If those in column 12 be compared with those in column 11, it will be seen that those in column 12 are a little higher in every month, the difference of the means for the year being $2^{\circ}0$; the mean difference between the mean temperature of the air and that at 9 a.m. for the 14 years was $3^{\circ}5$.

For a few days in the winter months the dry and wet-bulb thermometers read alike, or nearly so, but in the months from May to October the difference between the readings often exceeded 15° , and was as large as 29° on May 8th.

In column 13 the mean monthly readings of the wet-bulb are shown; the smallest differences between these and those of the dry-bulb were $1^{\circ}4$, in January, and $2^{\circ}8$, in March; the largest were $14^{\circ}6$, in June, and $14^{\circ}5$, in October. The mean for the year was $56^{\circ}0$, and that of the dry-bulb $64^{\circ}9$; the mean difference was $8^{\circ}9$.

The numbers in column 14 are the mean temperature of the dew point, or that temperature at which the air would be saturated by the quantity of vapour mixed with it; the smallest difference between these numbers and those in column 12, were 3° , in January, and $5^{\circ}7$, in March; and the largest were $25^{\circ}1$, in both June and October, and $24^{\circ}2$, in July. The mean temperature of the dew point for the year was $49^{\circ}1$; the mean for the 13 years was $50^{\circ}3$.

The numbers in column 15 show the elastic force of vapour, or the length of a column of mercury in inches corresponding to the pressure of vapour; the smallest was $0\cdot263$ inch, in February; and the largest $0\cdot493$ inch, in August. The mean for the year was $0\cdot357$ inch; the average of the 14 years was $0\cdot377$ inch.

In column 16 the weight in grains of the water present in a cubic foot of air is shown; it was as small as 3 grains in February, and as large as 5.3 grains in both August and September. The mean for the year was 3.9 grains; the average of 14 years was 4.2 grains.

In column 17 the additional quantity of water required to saturate a cubic foot of air is shown; it was as small as $0\cdot4$ grain in January, and as large as 6.3 grains in August. The mean for the year was 3.3 grains, the average of 14 years being of the same value.

The numbers in column 18 show the degree of humidity, saturation being represented by 100; the largest numbers appear in January,

February, March, April, November, and December, and the smallest from May to October ; the smallest of all was 42 in June. The mean for the year was 60 ; that of the 14 years was 59.

The numbers in column 19 show the weight in grains of a cubic foot of air, under its mean atmospheric pressure, temperature, and humidity. The largest number was in January, decreasing to the smallest in August, then increasing to December. The mean for the year was 483 grains ; that of the 14 years was 482 grains.

The most prevalent wind in January was S.W., and the least prevalent was N. ; the most prevalent in February were N.W. and S.W., and the least was S. ; the most prevalent in March was N.W., and the least prevalent were N.E., E., and S. ; the most prevalent in April was N.W., and the least were N. and S. ; the most prevalent in May were N.W., S.E., and W., and the least was S. ; the most prevalent in June was N.W., and the least were E., S., and S.W. ; the most prevalent in July was N.W., and the least was S. ; the most prevalent in August was N.W., and the least were S.E., S., and S.W. ; the most prevalent in September was N.W., and the least were S.E. and S. ; the most prevalent in October were N.W. and N.E., and the least was S. ; the most prevalent in November were N.E. and N.W., and the least were N. and S. ; the most prevalent in December was N.E., and the least was S. The most prevalent wind in the year was N.W., which occurred on 147 times, of which 24 were in August, 18 in September, and 17 in both June and July, and the least prevalent wind was S., which occurred on only 3 times during the year, viz., once in each of the months of January, March, and December.

The total number of times of each wind are shown in the last line of columns 20 to 27 ; the S.W. wind was of the same value as the average ; those winds less in number than the average of the preceding 14 years were—

N.	by	16
E.	"	6
S.	"	7
W.	"	25

and those winds greater in number than the average of 14 years were—

N.E.	by	15
S.E.	"	5
N.W.	"	34

The numbers in column 28 show the mean amount of cloud in each month ; the month with the smallest amount is June, and the largest January. Of the cumulus or fine weather cloud there were 12 instances ; of the nimbus or rain cloud there were 30 instances, of which 9 were in January, 6 in February, and 5 in March ; of the cirrus 12 instances ; of the cirro cumulus 80 instances ; of the cirro stratus 11 instances ; of the cumulus stratus 58 instances ; of the stratus 3 instances ; and

160 instances of cloudless skies, of which 29 were in June, 25 in July, and 23 in August, and 2 only in January.

The largest fall of rain for the month in the year was 9·61 inches, in January, of which 2·15 inches fell on the 16th, 1·82 inch on the 28th, and 1·75 inch on the 1st. The next largest fall for the month was 8·65 inches, in February, of which 2·40 inches fell on the 19th, 1·73 inch on the 20th, and 1·26 inch on the 3rd. No rain fell from May 21st till October 16th, making a period of 147 consecutive days without rain. The total fall of rain for the year was 32·90 inches, being 7·28 inches above the average of 35 years, viz., 1861 to 1895. The number of days on which rain fell was 71, being 16 more than the average.

ERRATUM.

A subscriber writes that in Mr. Brown's article on the "Construction of the Tabernacle," in the *Quarterly Statement* for July, 1897, there is an inaccuracy, which, however, does not in the least detract from the force of his argument. He says, page 155 :—"Each of the 96 boards of the Tabernacle rested on a silver socket weighing a talent." A reference to Exodus xxvi, 15-23, will show wherein the error consists.