

due, the chastisement of a jealous God avenging the profanation of His House.

C. CLERMONT-GANNEAU.

The above was in the hands of the Committee of the Palestine Exploration Fund for some time, but was withheld from publication in the hopes that M. Ganneau would acquire the head. In this he has been disappointed, the Archimandrite having bought it for a larger sum than M. Ganneau was authorised to offer. Drawings and photographs by M. Lecomte were sent to England with the memoir, and are now in the office of the Fund. Mr. Vaux writes on the subject:—"I have great pleasure in confirming M. Ganneau's judgment so far as I can, from the only available document before me, at present—his photograph. The characteristics of Hadrian's physiognomy are the crisp beard, the straight nose, the curved eyelids, and the curved if not curled, moustachios, &c. All these are here. The work appears to be rough, and the material coarse, but I have no doubt that the head is that of Hadrian, in spite of some doubtful points."

ON THE METEOROLOGY OF VARIOUS PLACES IN
PALESTINE,

AT WHICH OBSERVATIONS WERE TAKEN BY THE ROYAL ENGINEERS.
BY JAMES GLAISHER, Esq., F.R.S., ETC.

THE observations on which this paper is based were recorded by the survey party under the command of Lieutenant Claude R. Conder, R.E., and were taken at various places spread over the area comprised between latitudes 31 deg. 56 min. and 32 deg. 49 min. north, and longitude 34 deg. 50 min. and 35 deg. 15 min. east. The periods of time at the different stations during which observations were registered were very varying in length, and therefore the results given below can only be regarded as approximate; thus, at Caiffa the approximate mean temperature is deduced from 79 days' observations, but at Shayk Abrayk from 15 days' only. The local times of observation were 7 or 7.30 a.m., 9 a.m., and 3 p.m.

In the accompanying table the name of the station, with its latitude and longitude, and height above sea-level, is given with the length of the period of observation. These are followed by columns giving respectively the highest and lowest barometer readings and the mean value for the period, all reduced to 32 deg. Fahrenheit, but not to sea-level. Then follows the absolute maximum and minimum temperatures of the air, with the range in the period; the means of the maxima and minima and the mean daily range. Next in succession are the mean

values of dry and wet bulb thermometers and the hygrometrical deductions therefrom.

The *approximate mean temperature* is deduced from the means of all the maxima and minima temperatures uncorrected. The mean readings of a solar radiation thermometer are given for some of the stations, but at Jenin Lieutenant Conder remarks: "The maximum thermometer in rays of sun was broken on 13th September, the bulb being then open to the air. It was mended with sealing-wax covered with lime, the thermometer being immersed for some time (reversed) in boiling water to obtain the nearest possible approach to a vacuum. It has, however, read considerably lower since the 18th when mended, though not so low as whilst remaining broken." Readings after the 13th September are therefore of little value. The minimum radiation values are also wanting from 1872, June 6, to 1873, Feb. 10, the thermometer having been broken. The remaining columns are occupied by the average strength of the wind, the number of days in which it blew from different points and on which the air was calm, the mean amount of cloud, the number of days on which rain fell, and the amount collected.

I hope in future *Quarterly* journals to give papers on the results of longer-continued series of observations at Nazareth, Jaffa, and Gaza.

Yazûr, 1872, April 4 to 23.—During the whole period the weather was fine, though occasionally somewhat cloudy. Showers of rain fell on the 10th, 15th, and 16th. The air was generally calm. The readings of the barometer decreased from about 30·0 in. on the 5th to 29·7 in. on the 14th, increased to 30·0 in. again by the 19th, and was 29·7 in. at the end of the period. The highest reading of a thermometer in the sun's rays was 148·7 deg. on the 8th, and the lowest on the grass at night, 36·1 deg. on the 11th.

Khirbatha ibn Harith, April 25 to May 10.—Rain fell heavily between 7 and 9 a.m. on May 3rd, and again on the 4th, but with these exceptions the period was rainless. Light clouds were generally present except on the above-mentioned days, when they were much denser and larger in amount. A fall in the barometric column was registered previous to the rainy days, reaching its minimum, about 28·5 in., on the 2nd, but by the 6th had increased to 28·8 in. The wind blew briskly from the south-west on the 3rd and 4th, the directions on the remaining days being variable. The maximum radiation thermometer registered 157·7 deg. on the 1st May, and the minimum 46·0 deg. on the 29th April.

Ain Sinia, May 11 to 30.—The weather throughout was generally fine, and with the exception of a slight shower on the 22nd no rain fell. Thunder was heard, but lightning was not seen, on the 22nd and 24th. Southerly winds were prevalent from the 11th to the 18th, but with light pressures; during the same time the sky was generally cloudy. On the 29th, observations were taken at 3 p.m., local time, the results being:—Barometer, 27·7 in.; and dry and wet bulb thermometers, 92·9 deg. and 67·1 deg. respectively. The maximum reading in the sun's rays was 158·7 deg. on the 22nd, and the lowest on the grass, 42·5 deg. on the 16th.

Kuzah, May 31 to June 17.—At this station the barometric changes were very small, the absolute range of reading amounting to but 0.2 in. In the early morning the air was usually calm, but fresh breezes sprung up in the afternoon. The weather was very fine and rainless throughout. Highest reading in sun's rays, 168.5 deg.

Nablus, June 18 to August 16.—The camp at Nablus was not very well situated for ascertaining the direction of the wind accurately, the results therefore are only approximate. The sky was very free from cloud, but fog was prevalent on the morning of the 22nd of July. Very small barometric changes were recorded. The pressure of the wind was light but very continuous. The highest reading in the sun's rays was 180.5 deg. on the 12th July.

Jeba, August 17 to 30.—Several oscillations of the barometer were recorded, the principal being an increase to 28.7 in. on the 19th, a decrease to 28.5 in. on the 21st, an increase to 28.8 in. by the next morning, followed by a decrease to 28.5 in. by the afternoon of the 23rd, and an increase to 28.8 in. again in the early morning of the 24th; this again being followed by a decrease to 28.5 in. by the afternoon of the 25th. Tolerably brisk westerly winds were prevalent, and light clouds generally present in the early portion of each day. The highest reading in the sun's rays was 173.5 deg. on the 17th. No rain fell.

Jenin, August 31 to September 28.—In the whole period the range in barometric readings amounted to but 0.2 in. The weather was somewhat variable at times, the sky being very cloudy, but no rain fell. Strong breezes were occasionally experienced, but the direction of the wind was changeable.

Umm el Fahm, September 29 to October 19.—Barometric changes inconsiderable. The air throughout was generally calm. A shower of rain fell on the evening of the 3rd October. Lightning, not accompanied by thunder, seen on the same and following evenings, and thunder (without lightning) was heard on the 7th, also accompanied by a slight shower. The amount of rain measured was only 0.002 in.

Mujaydel, October 20 to November 8.—The weather very variable throughout. Thunderstorms were experienced on the 21st, 22nd, 23rd, and 24th, with at times heavy rain, and on the 20th hail in a very small quantity. The Sirocco blew on the 26th October and 2nd November.

Nazareth, November 9 to 26.—From the 9th to the 13th showery weather with thunderstorms was prevalent, followed by a fine period till the 26th. An increase in the barometric readings was recorded till the 21st, when 29.0 in. was reached; a decrease till the end of the period then occurred. Easterly and north-easterly winds were prevalent from the 19th onwards, with light pressures.

Shaykh Abruik, November 27 to December 11.—A shower of meteors was observed throughout the night of the 27th. The sky was generally cloudless till the 9th December; on the 10th it was showery all day. A thunderstorm occurred during the night of the 9th. The air was calm throughout.

Cuiffa, December 12, 1872, to February 26, 1874.—The principal barometric changes were:—

	In.			In.	
An increase to	30.1	on the	17th Dec.	A decrease to	29.9 on the 15th Dec.
„	30.1	„	27th „	„	29.5 „ 20th „
„	30.3	„	2nd Jan.	„	29.9 „ 29th „
„	30.2	„	10th „	„	29.9 „ 7th Jan.
„	30.3	„	16th „	„	30.1 „ 12th „
„	30.1	„	22nd „	„	29.9 „ 19th „
„	30.0	„	1st Feb.	„	29.7 „ 30th „
„	30.2	„	5th „	„	29.8 „ 3rd Feb.
„	30.2	„	9th „	„	29.9 „ 7th „
„	29.9	„	13th „	„	29.8 „ 12th „
„	30.3	„	23rd „	„	29.8 „ 17th „

From the 12th to the 14th December the weather was very fine; from the 15th to the 28th showers of rain fell, accompanied by a thunderstorm on the night of the 24th. Another period of fine rainless weather occurred from the 29th to the 11th January, followed by a few unsettled days, and then again very fine till the end of January. A thunderstorm prevailed during the night of the 12th. During February it was very variable; rain fell frequently, accompanied at times by thunder and lightning, and by hailshowers on the 17th and 19th. The afternoon of the 14th was foggy, but on the following day the sirocco was experienced. During the latter part of the period it was very squally.

Jeba, near Athlit, February 27 to March 21.—The barometer readings decreased from 29.9 in. on the 9th to 29.4 in. on the 13th, then increased again to 29.9 in. by the 20th. The period was generally fine, though rain fell occasionally. Thunderstorms were prevalent on the 16th and 18th.

Kannir, March 22 to April 8.—Several oscillations of the barometer were experienced during the latter portion of March, accompanied by gales and heavy showers. A thunderstorm occurred on the 25th. The remainder of the period was fine, broken, however, by one stormy afternoon, viz., that of the 5th April.

Zayta, April 9 to 25.—A somewhat unsettled period prevailed from the 14th to the 17th, with thunderstorms, but otherwise it was very fine throughout.

Mukhalid, April 26th to May 7; *Kejr Zebad*, May 8 to 23.—Very fine generally. The 9th and 23rd were squally, with sirocco, and on the 17th and 18th thunder unaccompanied by lightning was heard.

NAME OF STATION.	Height above Sea.	Period of Observation, 1877.	BAROMETER.				TEMPERATURE OF AIR IN PERIOD.						Local Times of Observation.	MEANS.					MEAN READING OF THERMOMETER.		WIND.					RAIN.					
			Highest.	Lowest.	Range.	Mean reduced to 32° Fahr.	Highest.	Lowest.	Range.	Mean				Dry.	Wet.	Hygrometrical Deductions.			Approximate Mean Temperature from Max. and Min.	Maximum in Days of Sun.	Minimum on Grass.	Estimated Strength.	Relative Proportion of at 7 a.m.					Mean Amount of Cloud.	Number of Days it fell.	Amount Collected.	
										Of all Highest.	Of all Lowest.	Daily Range.				Dew-point.	Elastic Force of Vapour.	Degree of Humidity.					Saturation=100	N.	E.	S.	W.				Calm.
Yagur. Lat. 32° 1' N. Lon. 34° 50' E.	63 feet	April 3 to April 23	29.980	29.707	0.273	29.843	98.0	41.0	57.0	74.7	48.2	26.5	7 a.m. 9 a.m.	59.4 68.5	56.4 61.8	53.7 56.6	414 458	82 65	61.5	141.5	43.3	0.8	0	1	3	3	13	2.0	3	0.36	
Khirbetha ibn Harith. Lat. 31° 50' N. Lon. 35° 4' E.	1250 feet	April 25 to May 10	28.841	28.532	0.309	28.697	87.1	51.0	36.1	75.6	55.2	20.4	7 a.m. 9 a.m.	62.7 65.6	56.8 60.1	51.8 55.6	386 443	68 71	65.4	146.7	50.0	0.8	1	6	4	3	2	2.5	2	1.15	
Aln Sinia. Lat. 31° 58' N. Lon. 35° 14' E.	2060 feet	May 11 to May 30	27.911	27.686	0.225	27.827	95.7	45.0	50.7	79.7	53.8	25.9	7 a.m. 9 a.m.	64.7 70.7	58.2 61.2	52.8 53.9	400 417	65 56	66.8	150.2	48.1	1.0	2	3	6	3	6	2.2	0	0.00	
Kuyah. Lat. 32° 0' N. Lon. 35° 15' E.	1040 feet	May 31 to June 17	28.409	28.209	0.200	28.296	100.9	53.8	47.1	88.0	61.1	26.9	5 1/2 a.m. 7 a.m. 9 a.m. 3 p.m.	66.9 71.0 76.0 88.3	55.8 61.3 62.3 66.7	51.2 53.9 52.7 53.0	377 417 398 402	58 54 44 30	74.6	154.0	..	..	..	..	..	..	..	1.3	0	0.00
Nablus. Lat. 32° 13' N. Lon. 35° 15' E.	1050 feet	June 17 to Aug. 16.	27.973	27.741	0.232	27.848	94.1	56.0	38.1	84.8	64.1	20.7	7 a.m. 9 a.m. 3 p.m.	70.3 75.6 82.5	64.9 66.3 69.7	60.7 59.7 61.1	534 512 539	71 57 49	74.5	170.8	..	1.1	6	11	21	9	3	1.4	0	0.00	

NOTE.—Barometer reading Oct. 3rd, 9 a.m., 29.961 in. altered to 28.961 in.

NAME OF STATION.	Height above Sea. feet.	Period of Observation, 1872.	BAROMETER.				TEMPERATURE OF AIR IN PERIOD.						Local Times of Observation.	MEANS.					MEAN READING OF THERMOMETER.			WIND.					RAIN.				
			Highest.	Lowest.	Range.	Mean reduced to 32° Fahr.	Highest.	Lowest.	Range.	Mean.				Dry.	Wet.	Hygrometrical Deductions.			Approximate Mean Temperature from Max. and Min.	Maximum in Rays of Sun.	Minimum on Grass.	Estimated Strength.	Relative Proportion of at 0 a.m.					Mean Amount of Cloud.	Number of Days it fell.	Amount Collected.	
										Of all Highest.	Of all Lowest.	Daily Range.				Dew-point.	Elastic Force of Vapour.	Degree of Humidity (100)					N.	E.	S.	W.	Caln.				
																															deg.
Jeba. Lat. 32° 20' N. Lon. 35° 14' E.	1300	Aug. 17 to Aug. 30	28·824	28·451	0·373	28·571	90·0	63·2	26·8	86·8	68·0	18·8	7 a.m. 9 a.m. 3 p.m.	71·4 77·2 83·5	68·8 69·9 71·9	66·8 64·8 64·2	358 614 601	85 66 52	77·4	164·0	..	..	..	..	..	..	..	1·2	0	0·00
Jenin. Lat. 32° 27' N. Lon. 35° 18' E.	640	Aug. 31 to Sept. 28	29·411	29·215	0·196	29·301	102·7	65·5	37·2	92·5	69·8	22·7	7 a.m. 9 a.m. 3 p.m.	75·8 81·5 90·2	71·3 72·6 73·0	68·0 66·6 62·3	688 653 560	77 61 40	81·2	162·4	..	1·4	1	1	6	13	8	1·9	0	0·00	
Umm-el-Fahm. Lat. 32° 9' N. Lon. 35° 9' E.	1260	Sept. 29 to Oct. 19	28·890	28·671	0·219	28·805	101·4	58·6	42·8	84·9	64·2	20·7	7 a.m. 9 a.m. 3 p.m.	68·0 76·9 80·7	64·0 65·6 65·8	60·1 57·7 55·7	520 477 430	73 51 42	74·5	138·9	..	0·6	4	2	2	1	12	1·9	0	0·00	
Mujaydel. Lat. 32° 41' N. Lon. 35° 14' E.	770	Oct. 20 to Nov. 8	29·527	29·318	0·209	29·416	95·9	56·3	39·6	82·5	61·6	20·9	7.30 a.m. 9 a.m. 3 p.m.	67·0 72·5 75·3	61·2 65·3 66·9	56·5 59·9 60·9	459 518 535	69 64 61	72·1	134·1	..	0·7	1	2	2	1	14	4·7	4	1·41	
Nazareth. Lat. 32° 42' N. Lon. 35° 16' E.	1330	Nov. 9 to Nov. 26	29·018	28·675	0·343	28·818	76·2	57·3	18·9	70·4	60·1	10·3	7.30 a.m. 9 a.m. 3 p.m.	61·0 64·2 69·9	55·0 55·0 58·0	49·8 47·4 48·9	358 326 346	67 54 47	65·3	116·9	..	1·2	3	7	5	1	2	2·3	4	2·19	
Shaykh Abrayk. Lat. 32° 42' N. Lon. 35° 7' E.	530	Nov. 27 to Dec. 11	29·650	29·354	0·305	29·472	75·6	43·8	31·8	72·7	47·4	25·3	7.30 a.m. 9 a.m. 3 p.m.	50·9 53·4 69·4	47·3 52·6 60·0	43·5 47·4 52·7	284 328 398	76 67 55	60·1	..	..	0·0	0	0	0	0	15	1·9	2	0·53

NAME OF STATION.	Height above Sea.	Period of Observation, 1872-3	BAROMETER.				TEMPERATURE OF AIR IN PERIOD.						Local Times of Observation.	MEANS.					MEAN READING OF THERMOMETER.		WIND.				RAIN.					
			Highest.	Lowest.	Range.	Mean reduced to 32° Fahr.	Highest.	Lowest.	Range.	Mean.				Dry.	Wet.	Hygrometrical Deductions.			Maximum in Rays of Sun.	Minimum on Grass.	Estimated Strength.	Relative Proportion of, at 9 a.m.				Mean amount of Cloud.	Number of Days it fell.	Amount Collected.		
										Of all Highest.	Of all Lowest.	Daily Range.				Dew-point.	Elastic Force of Vapour.	Degree of Humidity.				Saturation—100	N.	E.	S.				W.	Calm.
Caiffa. Lat. 32° 49' N. Lon. 34° 50' E.	50	Dec. 12 to 1873, Feb. 26	30·321	29·499	0·822	30·002	83·2	41·3	41·9	64·2	49·8	14·4	9 a.m. 3 p.m.	56·3 63·7	51·0 56·7	46·1 50·9	313 372	68 63	57·0	...	1·7	4	28	29	4	3	3·9	28	6·67	
Jeba, near Athlit. Lat. 32° 32' N. Lon. 35° 1 E.	345	Feb. 27 to Mar. 21	29·988	29·468	0·520	29·802	82·9	40·8	33·1	68·6	53·3	15·3	7·30 a.m. 9 a.m. 3 p.m.	58·2 59·4 66·2	55·0 57·3 61·9	52·1 55·5 58·5	890 440 490	80 89 77	61·0	...	53·0	1·3	1	4	9	4	5	4·0	9	3·31
Kannir. Lat. 32° 32' N. Lon. 35° 1 E.	345	Mar. 22 to April 8	29·855	29·366	0·489	29·582	88·0	39·2	48·8	73·6	49·5	24·1	7·30 a.m. 9 a.m. 3 p.m.	61·0 66·1 69·0	56·9 60·0 61·7	53·3 433 449	77 68 63	61·5	...	46·4	1·6	1	6	4	6	1	5·8	7	0·73	
Zayta. Lat. 32° 23' N. Lon. 35° 3' E.	360	April 9 to April 25	29·762	29·435	0·327	29·572	89·1	47·6	51·5	83·0	55·3	27·7	7·30 a.m. 9 a.m. 3 p.m.	66·0 77·5 79·9	59·3 61·2 64·9	53·8 49·8 54·7	414 359 428	65 38 41	69·1	...	51·5	0·9	1	7	4	3	2	3·3	1	0·36
Mukhalid. Lat. 32° 30' N. Lon. 34° 52' E.	70	April 26 to May 7	30·055	29·612	0·443	29·880	93·7	44·1	49·6	82·2	55·8	26·4	7·30 a.m. 9 a.m. 3 p.m.	68·1 73·2 78·3	62·5 66·1 67·5	58·1 60·9 60·1	485 534 520	70 66 54	69·0	...	52·8	1·2	3	2	1	3	3	4·0	1	0·01
Kefr Zebad. Lat. 32° 13' N. Lon. 35° 4' E.	380	May 8 to May 23	29·114	28·876	0·238	28·958	94·9	56·2	38·7	84·7	63·7	21·0	7·30 a.m. 9 a.m. 3 p.m.	71·6 80·2 82·8	63·6 64·3 66·5	57·6 53·4 55·6	476 410 444	61 39 39	74·2	...	60·6	0·9	1	1	2	2	10	3·1	1	0·24