SUPPLEMENT

To the HONGKONG GOVERNMENT GAZETTE of 17th April, 1886.

## GOVERNMENT NOTIFICATION.—No. 134.

The following Annual Weather Report of the Director of the Observatory, for 1885, is published general information.

By Command,

FREDERICK STEWART,
*Acting Colonial Secretary.*

Colonial Secretary's Office, Hongkong, 17th April, 1886.

## ANNUAL WEATHER REPORT FOR 1885.

The year 1885 presented some unusual features here, which were caused by the exceptional strength the S monsoon last summer. The SW monsoon in India was also unusually strong, while the mmer in England was extremely hot and dry. These features will be better understood, when the )bars over the world for last summer are constructed, but there is not much doubt, that the area of gh pressure over the Pacific did not stretch so far westward as usual, in consequence of which, gradients r SW winds were steeper than usual and most of the typhoons passed east of Formosa, the most )portant exception being furnished by the typhoon that passed through the Formosa Channel on the 4th August, but this typhoon had apparently been deflected from the usual path and attracted by ie small typhoon that passed northwards between Hongkong and Macao on the 17th of that month. nd the typhoons appear to have originated farther East of Luzon than in 1884.

During the summer the amount of cloud over this place was excessive and they were unusually low. here was little sunshine, much rain, and the thunderstorms were severe and protracted. The effect of ie S monsoon is very striking on comparing the monthly rainfall at Stone Cutters' Island with the ıean of eight years' rainfall (1878-1885 incl.):—

| Month. | Rainfall. | | Excess |
|---|---|---|---|
| | Mean. | 1885. | above mean. |
| January, ..... | 0.64 | 0.71 | + 0.07 |
| February,..... | 1.75 | 2.54 | + 0.79 |
| March, ..... | 3.95 | 2.16 | — 1.79 |
| April, ..... | 6.99 | 13.72 | + 6.73 |
| May,..... | 11.67 | 5.64 | — 6.03 |
| June, ..... | 14.12 | 26.74 | + 12.62 |
| July,..... | 15.36 | 16.01 | + 0.65 |
| August, ..... | 18.67 | 28.81 | + 10.14 |
| September,..... | 10.54 | 5.97 | — 4.57 |
| October, ..... | 5.74 | 2.59 | — 3.15 |
| November, ..... | 1.24 | 0.45 | — 0.79 |
| December, ..... | 0.34 | 1.03 | + 0.69 |
| Year..... | 91.01 | 106.37 | + 15.36 |

At the Observatory the cisterns of the barograph and the standard barometer are placed 110 feet above Mean Sea Level. The bulbs of the thermometers are placed 109 feet above Mean Sea Level and 4 feet above the ground except the terrestrial radiation thermometer, which is about one inch above the ground. The rim of the pluviograph, which is $11\frac{1}{4}$ inches in diameter, is placed 106 feet above Mean Sea Level and 21 inches above the ground. The cups of the anemograph are 150 feet above Mean Sea Level and 45 feet above the ground.

At Victoria Peak the instruments, except the radiation thermometers and the rain-gauge, are placed in the look-out. The cistern of the barometer is 1819 feet above Mean Sea Level. The bulbs of the thermometers are about 4 feet above the floor, except the maximum thermometer, which is a few inches higher. The radiation thermometers are placed at the same height above the ground as at the Observatory. The rim of the rain-gauge is 8 inches in diameter and is one foot above the ground.

At Stone Cutters' Island the rim of the rain-gauge is 8 inches in diameter and is placed 2 feet inches above the ground and about 15 feet above Sea Level.

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The Monthly Weather Reports are arranged as follows:—

Table I exhibits the hourly readings of the barometer reduced to 32°.0 Fahrenheit, but not t sea level, as measured (at two minutes to the hour named) from the barograms.

Table II exhibits the hourly readings of the temperature of the air round the Observatory a determined by aid of the rotating dry bulb thermometer and the thermograms (at two minutes past th hour named), and also the extreme temperatures during the day.

Table III exhibits the hourly readings of the temperature of evaporation round the observatory a determined by aid of the rotating damp bulb thermometer and the thermograms (at two minutes pas the hour named), and also the solar radiation maximum (black bulb) and terrestrial radiation (grass minimum) temperatures, read at 10 p. and entered for the same day.

The thermometers are rotated round a nearly horizontal axis (which is kept about 4 feet abov the ground) the observer generally walking along facing the wind, so that the bulbs describe screw of small pitch. The diameter of the screw described by the damp is larger than that described by th dry bulb.

Table IV exhibits the mean relative humidity in percentage of saturation (the humidity of ai saturated with moisture being 100) and mean tension of aqueous vapour present in the air expressed i inches of mercury, for every hour in the day and for every day in the month, calculated by aid c Blanford's tables from the data exhibited in Tables II and III.

Table V exhibits the duration of sun-shine expressed in hours as registered by aid of the sun-shin recorder from half an hour before to half an hour after the hour (true time) named.

Table VI exhibits the amount of rain expressed in inches registered from half an hour before t half an hour after the hour named.

Table VII exhibits, for every hour in the day, the velocity of the wind and its direction in number (8=E, 16=S, 24=W, 32=N) as measured from the anemograms. The velocity is the number o miles traversed by the wind, from half an hour before to half an hour after the hour named. Th direction is read off at the hour, except when the wind is very light and changeable, when the averag direction during the hour is estimated, taking into account the velocity from different quarters. Th direction is not noted when the velocity is below 1.5 miles an hour.

Table VIII exhibits, for every hour in the day, the mean velocity of the wind reduced to 4 an also to 2 directions, as well as the mean direction of the wind:—

The number of miles traversed by winds from directions 31, 32 and 1 and half the number o miles from 30 and 2 are termed (N). The number of miles from 3, 4 and 5 and half the number o miles from 2 and 6 are termed (NE), etc. We have then:—

$$N=(N)+(NE)\cos 45^\circ+(NW)\cos 45^\circ.$$
$$E=(E)+(NE)\cos 45^\circ+(SE)\cos 45^\circ.$$
etc.

which are the components exhibited in this table.

Table IX exhibits the direction (to two points) and force (0-12) of the wind at Victoria Peak and sea disturbance (0-9) at Cape d'Aguilar.

Table X exhibits the readings of the barometer reduced to 32°.0 Fahrenheit, but not to sea level and of the thermometers at Victoria Peak.

Table XI exhibits the relative humidity and tension of vapour at 10 a, 4 p. and 10 p. daily at the Observatory and at Victoria Peak.

Table XII exhibits the amount (0-10), name and direction whence coming, of the clouds. Where the names of upper and lower clouds are given, but only one direction, this refers to the lower clouds.

Table XIII exhibits the amount of rain measured at 10 a. and entered to preceding day at different stations and the duration of precipitation at the Observatory.

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The following Annual Report is arranged as follows:—

Table I exhibits the mean height of the barometer at the Observatory and at the Peak expressed in inches, the latter being the mean of the 10 a., 4 p. and 10 p. observations, and the excess of the hourly values at the Observatory above the mean.

At 4 a. the barometer begins to rise. It is at the time comparatively lower in spring, when the atmosphere is nearly saturated with moisture, than later in the year. It attains its mean height about 6 a., perhaps a little later in spring than in autumn and winter. At 10 a. the height attains its forenoon

maximum, which is the absolute maximum. The barometer stands comparatively highest at 10 a. in mid-winter. It then begins to fall and attains again its average value about 1 p., but later in summer than in winter. It reaches its second minimum between 4 p. and 5 p. in summer, but already about 3 p. in winter. At all seasons of the year this is the absolute minimum but comparatively lowest in winter. Thereafter it rises and reaches its third average shortly before 8 p. in winter and shortly after 8 p. in summer. The second maximum occurs about 10 p. This was comparatively highest in August. Then the barometer falls, attains its average value about 1 a. and a minimum about 4 a.

The diurnal range in the different months came out as follows: January, 0.100, February, 0.098, March, 0.095, April, 0.097, May, 0.087, June. 0.070, July, 0.065, August, 0.067, September, 0.074, October, 0.087, November, 0.105, December, 0.108. The average range was 0.088, exactly the same as in the previous year.

The height of the rock on which the look-out at Victoria Peak is placed has been calculated from the mean of the barometric observations made in 1885 to be 1814 feet, and from the mean of those made in 1884 and 1885 to be 1816 feet.

The first column of the following table shows the mean height of the barometer reduced to Mean Sea Level at the Hongkong Observatory. The second column shows the mean excess of the barometer in Shanghai over that in Hongkong, the distance between these stations being about 670 miles. The third column shows the mean excess of the barometer in Hongkong over that in Manila, the distance being about 600 miles. The data in the two last columns have been derived from the telegraphic reports issued at 10 a. from the Harbour Master's Office, Shanghai, and from the Missionary Observatory, Manila, respectively :—

| | | | |
|---|---|---|---|
| 1885.—January, | 30.223 | + 0.094 | + 0.160 |
| February, | .153 | + .122 | + .150 |
| March, | .107 | + .031 | + .093 |
| April, | 29.954 | + .013 | + .021 |
| May, | .877 | − .040 | − .039 |
| June, | .784 | − .041 | − .069 |
| July, | .736 | − .042 | − .122 |
| August, | .727 | − .011 | − .092 |
| September, | .864 | − .006 | − .038 |
| October, | 30.023 | + .017 | + .089 |
| November, | .175 | + .050 | + .196 |
| December, | .154 | + 0.055 | + 0.169 |
| Year, | 29 981 | + 0,020 | + 0.043 |

The comparison of this with the corresponding table in last year's report illustrates the comparative steepness of gradients for SW winds, which evidently was the cause of the typhoons nearly all passing East of Formosa.

In order to reduce the barometric readings to the gravity of latitude 45°, using Colonel Clarke's figures, the following corrections should be applied : Manila : −0.068, Hongkong : −0.055, Shanghai : −0.036 and in consequence + 0,019 should be added to the numbers in the second column and + 0.013 to those in the third.

Table II exhibits the mean temperature in degrees Fahrenheit at the Observatory and at the Peak, the latter being the mean of the 10 a, 10 p, maximum and minimum temperatures, and the excess of the hourly values at the Observatory above the mean. The daily variation is smaller in summer than in winter. The hottest part of the day is between 1 p. and 2 p. and the coldest about 6 a, but the lowest temperature occurs earlier in summer than in winter.

The diurnal ranges of temperature are exhibited in Table XVIII. The daily range of temperature is diminished by the circumstance that the force of the wind is smaller at night. It is on an average greater at the Observatory than at the Peak, the air at the former station having been somewhat longer in contact with the ground, which is heated during the day and cooled during the night through radiation. For this reason the daily range of temperature is greater in low places than in those exposed on prominences, a circumstance of some importance in selecting sites for camps, etc.

The monthly extremes of temperature are exhibited in Tables XVI and XVII. The ranges are much greater in winter than in summer.

Table III exhibits the relative humidity in percentage of saturation at the Observatory and at the Peak, the latter being the mean of the 10 a. 4 p. and 10 p. values, and the excess of the hourly values above the mean at the Observatory. The air is farthest from saturation and therefore feels driest between 1 p. and 2 p. and nearest saturation about 4 a., when it feels dampest. The average relative humidity is registered about 8 a. and 6 p.

Table IV exhibits the tension of vapour expressed in inches of mercury at the Observatory and at the Peak, the latter being the mean of observations made at 10 a,, 4 p. and 10 p., and the excess of the hourly values above the mean at the Observatory. The daily variation, as was to be expected from a coast station, is small, but there is less vapour in the air in the morning than in the evening. In summer the daily variation is nearly insensible.

The monthly extreme ranges in vapour tension (at 10 a, 4 p. and 10 p.) are exhibited in Tables XVI and XVII. They were greatest in November

The annual variation of the vapour tension was about the same as in the previous year. The maximum monthly mean occurred in June at the Observatory and in July at the Peak, the minimum in February at both stations. The mean relative humidity was greatest in April at the Observatory and in May at the Peak and was least in November at both stations.

Table V exhibits the total number of hours of bright sun-shine. The daily maximum fell about 11 a. and there was a little more sun-shine in the forenoon than in the afternoon,—just the opposite of the previous year. The monthly minimum occurred in February and the maximum in October. The minimum in percentage of possible duration occurred in February and the maximum in December The record on days on which the sun shone without interruption from sunrise to sunset having been compared with the time during which the sun was above the horizon, it was found that the sun is not strong enough to make a trace till 0.4 hours after its time of rising or before setting, calculated without taking refraction or diameter into account, and the total possible durations shown in the last but one column have been calculated by taking this into account. It was owing to the uncertainty of this quantity, that the percentage of possible duration was not exhibited in last year's report. It would obviously have been wrong to calculate on the supposition, that the sun was strong enough to mark the card from sunrise to sunset.

Table VI exhibits the total hourly rainfall. It appears, that there is a regular daily variation the maximum falling about 9 a. and the minimum about 5 p. June was the wettest month and November the driest. The greatest falls of rain are exhibited in Table XVI. It will be remarked that 12.63 inches of rain fell on the 12th June at the Observatory and 14.50 at the Peak.

Table VII exhibits the number of hours, during portion of which, it rained. The data in this table should be used only for comparison, the correct total duration of rain being exhibited in Table XI. It appears from this table, that it rains more often about sunrise than about sunset.

These tables were omitted in last year's report, as conclusions concerning the fall of rain are occasionally drawn on insufficient data. They are exhibited below and confirm the remarks made above.

*Total Hourly Rainfall during ten months of the year 1884.*

| Month. | 1 a. | 2 a. | 3 a. | 4 a. | 5 a. | 6 a. | 7 a. | 8 a. | 9 a. | 10 a. | 11 a. | Noon. | 1 p. | 2 p. | 3 p. | 4 p. | 5 p. | 6 p. | 7 p. | 8 p. | 9 p. | 10 p. | 11 p. | Midt. | Sum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| March, | 0.132 | 0.070 | 1.375 | 0.268 | 0.092 | 0.123 | 0.099 | 0.015 | 0.345 | 0.009 | .. | .. | .. | .. | 0.065 | 0.093 | 0.842 | 0.250 | 0.005 | 0.625 | 0.396 | 0.085 | 0.495 | 0.443 | 5.82 |
| April, | .250 | .290 | .390 | .225 | .235 | .117 | .185 | .187 | 1.278 | .220 | 0.895 | 0.065 | 0.030 | 0.015 | .030 | .064 | .335 | .055 | .010 | .030 | .. | .025 | .185 | .150 | 5.26 |
| May, | .035 | .075 | .025 | .135 | .240 | .505 | .795 | .080 | .020 | .084 | .800 | 1.215 | .045 | .340 | .810 | .520 | .675 | 1.265 | .715 | .280 | .180 | .010 | .145 | .045 | 9.03 |
| June, | .145 | .280 | .230 | .370 | .315 | 2.145 | .790 | .940 | .160 | .230 | .235 | .315 | .355 | 1.515 | 1.005 | .115 | .145 | .225 | .805 | .345 | .155 | .065 | .050 | .100 | 11.03 |
| July, | .075 | .185 | .210 | .510 | 1.295 | 1.020 | .920 | 2.085 | 1.145 | .160 | .560 | .740 | .790 | .720 | .255 | .310 | .175 | .115 | .305 | .330 | .400 | .115 | .015 | .140 | 13.07 |
| August, | .. | .630 | .565 | 1.390 | .615 | 1.005 | .625 | .400 | .250 | .265 | .725 | .250 | .455 | .020 | .. | .155 | .265 | .905 | .250 | .170 | 1.070 | .435 | .015 | .355 | 10.81 |
| September, | 1.105 | 1.280 | 1.070 | .700 | .340 | .220 | .250 | .445 | .420 | .125 | .040 | .475 | .080 | .315 | .325 | .690 | .470 | .975 | 1.195 | .520 | .100 | .190 | .380 | .660 | 12.37 |
| October, | .110 | .335 | .150 | .070 | .030 | .010 | .005 | .250 | .070 | .. | .730 | .285 | .145 | .015 | .090 | .100 | .100 | .105 | .010 | .. | .015 | .120 | .175 | .165 | 3.08 |
| November, | .050 | .010 | .025 | .065 | .015 | .025 | .040 | .005 | .075 | .125 | .135 | .135 | .210 | .055 | .015 | .010 | .. | .. | .. | .100 | .170 | .050 | .040 | .140 | 1.49 |
| December, | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Sums, | 1.902 | 3.155 | 4.040 | 3.733 | 3.177 | 5.170 | 3.709 | 4.402 | 3.763 | 1.218 | 4.120 | 3.480 | 2.110 | 2.995 | 2.595 | 2.057 | 3.007 | 3.895 | 3.295 | 2.900 | 2.486 | 1.095 | 1.500 | 2.198 | 72.0 |

*Number of Hours, during portion of which it rained, during ten months of the year 1884.*

| Month. | 1 a. | 2 a. | 3 a. | 4 a. | 5 a. | 6 a. | 7 a. | 8 a. | 9 a. | 10 a. | 11 a. | Noon. | 1 p. | 2 p. | 3 p. | 4 p. | 5 p. | 6 p. | 7 p. | 8 p. | 9 p. | 10 p. | 11 p. | Midt. | Sum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| March, | 3 | 2 | 2 | 1 | 3 | 3 | 2 | 1 | 2 | 1 | ... | ... | ... | ... | 1 | 3 | 2 | 2 | 1 | 3 | 4 | 2 | 2 | 2 | 42 |
| April, | 5 | 3 | 4 | 5 | 4 | 6 | 5 | 5 | 4 | 4 | 4 | 4 | 3 | 1 | 3 | 3 | 1 | 1 | 2 | 2 | ... | 2 | 3 | 3 | 77 |
| May, | 3 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 3 | 5 | 1 | 2 | 2 | 2 | 2 | 5 | 6 | 8 | 4 | 5 | 2 | 1 | 2 | 4 | 86 |
| June, | 5 | 3 | 4 | 5 | 3 | 3 | 6 | 6 | 7 | 8 | 4 | 5 | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 4 | 4 | 2 | 3 | 5 | 102 |
| July, | 4 | 5 | 5 | 5 | 8 | 8 | 6 | 6 | 8 | 3 | 4 | 8 | 6 | 5 | 5 | 6 | 6 | 4 | 5 | 6 | 5 | 4 | 2 | 5 | 129 |
| August, | ... | 4 | 6 | 5 | 6 | 5 | 5 | 5 | 5 | 4 | 6 | 5 | 4 | 2 | ... | 2 | 1 | 2 | 2 | 2 | 6 | 3 | 1 | 4 | 88 |
| September, | 5 | 5 | 6 | 6 | 3 | 3 | 2 | 2 | 2 | 6 | 3 | 3 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 3 | 2 | 2 | 2 | 69 |
| October, | 1 | 4 | 4 | 2 | 2 | 1 | 1 | 2 | 2 | ... | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | ... | 1 | 2 | 2 | 2 | 37 |
| November, | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 2 | 3 | 3 | 3 | 1 | 2 | 2 | 1 | ... | ... | ... | 1 | 2 | 1 | 2 | 3 | 38 |
| December, | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ( |
| Sums, | 28 | 31 | 37 | 35 | 34 | 35 | 33 | 32 | 35 | 34 | 26 | 31 | 23 | 19 | 20 | 27 | 23 | 23 | 20 | 24 | 27 | 19 | 19 | 30 | 668 |

The approximate hourly intensity of rainfall *i. e.* the hourly rainfall divided with the number of hours, during portion of which it rained, or heavy dew fell, was calculated for the mean of 1884 and 1885 and indicates, that the rain is heaviest in the middle of the day and lightest about midnight:—

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 a. | 0.103 | 7 a. | 0.127 | 1 p. | 0.165 | 7 p. | 0.127 |
| 2 „ | .154 | 8 „ | .175 | 2 „ | .120 | 8 „ | .112 |
| 3 „ | .143 | 9 „ | .184 | 3 „ | .107 | 9 „ | .080 |
| 4 „ | .109 | 10 „ | .116 | 4 „ | .080 | 10 „ | .091 |
| 5 „ | .118 | 11 „ | .202 | 5 „ | .098 | 11 „ | .087 |
| 6 „ | .134 | Noon | .140 | 6 „ | .141 | Midt. | .070 |

The true mean hourly intensity came out as follows in 1884 :—

January, 0.000; February, 0.037; March, 0.117; April, 0.072; May, 0.116; June, 0.148; July, 0.150; August, 0.155; September, 0.252; October, 0.119; November, 0.045; December, 0 000; Year, 0.101.

and in 1885 :—

January, 0.029; February, 0.028; March, 0.035; April, 0.179; May, 0.085; June, 0.373; July, 0.175; August, 0.218; September, 0.104; October, 0.100; November, 0.063; December, 0.039; Year, 0.119.

This was obtained by dividing the monthly rainfalls in Table XI with the duration. The intensity is a maximum in June, a minimum in January and was greater in 1885 than in 1884.

Table VIII exhibits the velocity of the wind expressed in miles per hour and the excess of the hourly values above the mean at the Observatory. The velocity at the Peak has been computed from the force estimated there at 10 a., 4 p. and 10 p. The usual daily variation (maximum at 11 a. and minimum at 10 p.) is seen to be greater in summer than in mid-winter during the months when the velocity was greatest, while it was least in September. The velocity is much greater at the Peak than near sea level even taking into account that it is observed principally during the day, and the annual variation is scarcely seen, though there appears to be a maximum in June. The daily variation is probably also small. The increase in wind-force with the height above sea level being small in winter and great in summer agrees with the circumstance that the SW monsoon extends so much higher up than the NE monsoon, which in consequence is subject to a certain amount of friction at its upper surface where the direction of the wind is veering.

In order to throw light on the maximum of wind-force mentioned in the monthly reports of January and February, 1884, as occurring in the early morning hours, and which is often noticed during strong East winds early in the year, the mean force of the wind at South Cape (Formosa) was computed from the three-hourly observations made from the 1st of August, 1884 till the 31st July, 1885 inclusive. These observations are made carefully by the staff of the lighthouse. The observers stand about 150 feet above sea level, but as they are occasionally guided in their estimations by the amount of sail carried by such sailing vessels as happen to be visible, the figures may be taken to represent the force of the wind at a lower level.

Mean Force of Wind at South Cape (Formosa).

| Year. | Month. | 3 a. | 6 a. | 9 a. | Noon. | 3 p. | 6 p. | 9 p. | Midt. | Mean. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1884. | August, | 3.4 | 3.0 | 2.9 | 2.9 | 3.2 | 3.0 | 2.9 | 3.0 | 3.0 |
| „ | September, | 3.7 | 3.2 | 3.1 | 3.2 | 3.1 | 3.1 | 3.2 | 3.6 | 3.3 |
| „ | October, | 4.2 | 3.8 | 3.8 | 3.8 | 3.2 | 3.5 | 4.1 | 4.3 | 3.8 |
| „ | November, | 4.8 | 4.6 | 4.3 | 4.3 | 3.8 | 4.0 | 4.4 | 4.6 | 4.4 |
| „ | December, | 4.1 | 4.0 | 4.0 | 4.1 | 3.8 | 3.4 | 3.7 | 4.2 | 3.9 |
| 1885. | January, | 3.1 | 3.2 | 3.0 | 2.9 | 2.6 | 2.6 | 2.7 | 3.0 | 2.9 |
| „ | February, | 4.0 | 4.0 | 4.0 | 3.7 | 3.4 | 3.3 | 3.4 | 3.7 | 3.7 |
| „ | March, | 3.1 | 3.2 | 3.0 | 2.8 | 2.8 | 2.7 | 2.8 | 3.1 | 2.9 |
| „ | April, | 2.8 | 2.5 | 2.6 | 2.5 | 2.2 | 2.3 | 2.3 | 2.6 | 2.5 |
| „ | May, | 2.6 | 2.6 | 2.7 | 2.8 | 2.6 | 2.5 | 2.1 | 2.5 | 2.6 |
| „ | June, | 2.3 | 2.4 | 2.2 | 2.2 | 2.5 | 2.1 | 2.0 | 2.2 | 2.2 |
| „ | July, | 2.8 | 2.9 | 2.8 | 2.8 | 2.9 | 3.0 | 2.7 | 2.8 | 2.8 |
| Mean. | | 3.4 | 3.3 | 3.2 | 3.2 | 3.0 | 3.0 | 3.0 | 3.3 | 3.2 |

It is seen, that the maximum force of the wind occurs at 3 a. and the minimum at 6 p. which no doubt closely correspond with the epochs of extreme force over the open sea, the effects of which during strong Easterly wind were traced in our records.

Table IX exhibits the mean direction of the wind at the Observatory and at the Peak. The direction at the Peak is to an observer facing the wind about a point to the right in winter and over two points in the same direction in summer. The excess of the hourly direction above the mean, at the Observatory expressed in degrees, is counted from North through East towards South. The veering of the wind during the day is small but greater during the southerly monsoon. It was greatest in September.

Table X exhibits the total distance traversed by, as well as the duration and averag velocity c winds from bi-quadrantal points. The velocity is a maximum for E winds and the average directio is straight E, but there is a secondary maximum for SW winds, whose duration is however smal Both with regard to frequency and velocity the S and SW winds in 1885 were greater than in 1884.

Table XI shows particulars concerning the rainfall, (as measured at 10 a.) which in the summe was considerably greater at the Peak than at a lower level. Each day on which not less than 0.01 inche of rain fell, is counted. It is plain, that the observers neglect to measure the rain every day at the Pea and at Stone Cutters' Island.

Table XII contains particulars concerning different phenomena. Fog occurred frequently i March. At times when gradients are slight and clouds come from between SE and SW fog may b expected. Electric phenomena are most frequent in August, but as many thunderstorms passed ove the Colony in April, as in August. The storms were severer and lasted about twice as long as in th previous year. Some damage to property was caused by them, but not so much as would be caused b an equal number of storms of equal severity in the United Kingdom. They have a well marked dail period, being most frequent at 7 p. Their direction was generally from W towards E up to the en of April and subsequently from SW towards NE. Unusual visibility of distant objects was mos frequent in June, when the air was moist and fog absent. Halos were frequent in July.

Table XIII shows the frequency of clouds of different forms from observations made 8 times a day During January, cum. prevailed, during February and March, cum-nim. In April cum. again prevail and holds the ground till the end of the year.—C, c-str. and c-cum. have their maxima in the typhoo season, the latter forms already in July. Sm-cum. are common during the last half of the year, whe the weather is fine. Cum-str., the thunderclouds, had their maximum in July, R-cum in winter cum-nim, the threatening cloud, in spring, and nim, the rain cloud, in the rainy season.

The number of days on which clouds were observed to be below 2000 feet was as follows :— January, 14, February, 19, March, 19, April, 24, May, 20, June, 14, July, 18, August, 14, September 10, October, 2, November, 2, December, 12.—The number of days on which they were observed t be below 1000 feet was as follows :—January, 2, February, 10, March, 8, April, 5, May, 6, June, 0 July, 2, August, 1, September, 1, October, 0, November, 0, December, 3.

The mean direction of clouds (whence coming) was as follows :—

| 1885. | Lower. | Upper. | Cirrus. |
|---|---|---|---|
| January, ..... | E by S | W | W |
| February, ..... | E by N | W | W |
| March, ..... | ESE | W by S | W |
| April, ..... | SE | W | W |
| May, ..... | S | WNW | WNW |
| June, ..... | S | NNW | N |
| July, ..... | SSW | NNE | N |
| August, ..... | S | NNE | NNE |
| September, ..... | SSE | NNW | NE |
| October, ..... | ENE | W | NNE |
| November, ..... | ENE | W | — |
| December, ..... | E by S | W | W |

In computing the direction of the upper clouds, cirri were included, and in computing the direction of cirrus the observations made in 1884 were also included. From June to October inclusive cirri come from two different directions,—from about NE while a typhoon is in existence somewhere, their direction often backing from E to N while the typhoon is yet over 700 miles away; and from about W, when there are no signs of a typhoon. But cirrus is rarely seen in summer except before typhoons, through whose agency vapour is evidently brought up to the higher regions of the atmosphere.

The c-str. radiate most frequently from NE, and so far I have not succeeded in connecting the direction of the striæ with the position of typhoons.

It is possible, that the direction whence coming of the clouds has a slight diurnal variation. The direction appears to back one or two points during the day. This is just the reverse of the diurnal variation in the direction of the wind, which would agree well with the hypothesis advocated by Espy and Köppen.

The direction whence coming, of the lower clouds is to the right of the wind to an observer facing the wind, especially in summer. In September, the direction of the wind changed most quickly with the elevation, the mean direction of the wind at the Observatory being E by N, at the Peak ESE, at the level of the lower clouds SSE, at the level of the upper clouds NNW, and at the level of cirrus, perhaps 6 or 8 miles up, NE.

Table XIV exhibits the amount of cloud, which is greatest in the morning and least in the evening. It reached its maximum in February, during which the sky was almost continuously overcast, and decreased then slowly till December, when it reached its minimum.

Table XV exhibits the sea-disturbance, which was greatest in January and February, when the force of the wind was highest and least in September, together with the wind force.

Table XVI and Table XVII exhibit the extremes of the principal meteorological elements at the Observatory and at the Peak respectively.

Table XVIII exhibits the mean readings of the black bulb thermometers at the Observatory and at the Peak. The readings published in the *Observations and Researches for 1884* and in the monthly reports for 1885 were reduced to the standard kept at Kew by applying a constant correction. In 1885 however comparisons were made at different parts of the scale by the intermediary of a black bulb thermometer whose corrections were investigated at both Observatories, and it was ascertained, that the readings as published for the Peak should be increased by 2°.0, the correction being sensibly constant, and that the following corrections should be applied to the readings as published for the Observatory :—

| | | | |
|---|---|---|---|
| At 90° ..... | − 2°.4 | At 120° ..... | +1°.5 |
| „ 100° ..... | − 0°.8 | „ 130° ..... | +2°.3 |
| „ 110° ..... | + 0°.5 | „ 140° ..... | +2°.9 |

These corrections have been applied to the data published in this, the annual report for 1885, and corrections to readings above 140° have been extrapolated.—It should be remembered that these corrections do not by any means improve the accuracy of the observations but simply render them comparable with those made at Kew and at Observatories, whose black bulb thermometers have been compared there. A great number of readings of black bulb thermometers have lately been published from Ceylon. These would be comparable with those published elsewhere, if the thermometers were compared. The thermometers distributed among the Imperial Maritime Customs' stations have been compared here and observations were started last year at a great number of stations. But of course records of black bulb thermometers are not very important.

The highest mean of black bulb temperature occurred in September, at both stations. The greatest mean excess above mean maximum air temperature in September, at the Observatory and in October, at the Peak. When the clouds are low this excess is greatest at the Peak, when they are high it is greatest at the Observatory.

The same table shows the mean excess of minimum air temperature above the minimum on grass. In March, the grass minimum at the Peak did not register lower than the minimum owing no doubt to the fog. The greatest difference was registered in November, at both stations.

But those figures do not exhibit a measure of the terrestrial radiation, as the grass minimum gets wet from fog and rain, and it is most probable that its temperature is depressed more from this cause than by radiation. The greatest radiation is registered in November, which coincides with the greatest dryness of the air, as might be expected, but just at that time the least trace of dampness on the ground would lower the readings enormously, and it is remarked that the lowest readings of the grass minimum are obtained when the sky clears with a dry northerly wind just after a slight fall of rain. For these reasons I feel inclined to doubt, whether the grass minimum is of any value at all for registering terrestrial radiation. But it indicates roughly the lowest temperature on the grass.

The same table shows the average weight of aqueous vapour in Troy grains in each cubic foot of air at the Observatory and at the Peak.

The same table exhibits the mean diurnal range of temperature at the Observatory and at the Peak, which is of course greater than the range that follows from the hourly readings.

The same table shows the height to which one must ascend in order to have the mean temperature lowered one degree, the figures having been calculated from the data in Table II. This is greatest when the clouds are low.

From a return furnished by the Registrar General it is seen that the mean monthly death-rate per thousand among the Chinese in Hongkong from Zymotic diseases was 1.067 in 1884 and 1.384 in 1885, and from diseases of the Digestive Organs 0.059 in 1884 and 0.081 in 1885. The maximum monthly death-rate from the former diseases occurred in September, 1884, (1.413) and in July, 1885, (2.966) and the minimum in February, 1884, (0.749) and in January, 1885, (0.670). The maximum monthly death-rate from the latter diseases occurred in October, 1884, (0.099) and in July and October, 1885, (0.112) and the minimum in December, 1884, (0.026) and in February, 1885, (0.046).—The mean monthly death-rate per thousand from diseases of the Skin was 0.065 in 1884 and 0.043 in 1885 and from diseases of the Respiratory Organs 0.213 in 1884 and 0.237 in 1885.

The effects of the increased strength of the S monsoon in 1885 appear thus in the increased death-rate from various diseases.

## TABLE I.

*Mean Height of the Barometer at the Observatory and at the Peak for each month in the Year 1885, and Mean Diurnal Variation at the Observatory.*

| Month. | 1 a. | 2 a. | 3 a. | 4 a. | 5 a. | 6 a. | 7 a. | 8 a. | 9 a. | 10 a. | 11 a. | Noon. | 1 p. | 2 p. | 3 p. | 4 p. | 5 p. | 6 p. | 7 p. | 8 p. | 9 p. | 10 p. | 11 p. | Midt. | Mean. Observ-atory. | Mean. Peak. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January, | +.005 | −.003 | −.014 | −.018 | −.017 | −.005 | +.010 | +.032 | +.048 | +.052 | +.037 | +.011 | −.021 | −.039 | −.048 | −.045 | −.036 | −.024 | −.009 | +.009 | +.016 | +.019 | +.020 | +.018 | 30.104 | 28.303 |
| February, | +.009 | −.002 | −.013 | −.019 | −.018 | −.004 | +.014 | +.031 | +.048 | +.053 | +.042 | +.020 | −.005 | −.027 | −.045 | −.044 | −.037 | −.030 | −.018 | −.002 | +.007 | +.012 | +.011 | +.008 | 30.033 | 28.214 |
| March, | +.005 | −.006 | −.021 | −.026 | −.020 | −.004 | +.015 | +.035 | +.046 | +.051 | +.043 | +.026 | −.004 | −.026 | −.043 | −.044 | −.041 | −.032 | −.018 | +.001 | +.015 | +.021 | +.019 | +.013 | 29.988 | 28.205 |
| April, | +.005 | −.013 | −.026 | −.030 | −.022 | −.007 | +.013 | +.034 | +.047 | +.049 | +.044 | +.031 | +.002 | −.021 | −.037 | −.045 | −.048 | −.038 | −.024 | −.005 | +.014 | +.025 | +.026 | +.014 | 29.838 | 28.109 |
| May, | −.001 | −.013 | −.021 | −.022 | −.016 | −.002 | +.016 | +.030 | +.039 | +.044 | +.040 | +.029 | +.008 | −.013 | −.031 | −.043 | −.043 | −.034 | −.022 | −.005 | +.007 | +.019 | +.022 | +.011 | 29.763 | 28.056 |
| June, | +.005 | −.006 | −.012 | −.012 | −.010 | .000 | +.010 | +.022 | +.030 | +.034 | +.031 | +.020 | +.004 | −.012 | −.024 | −.033 | −.036 | −.031 | −.021 | −.007 | +.005 | +.020 | +.020 | +.010 | 29.671 | 27.991 |
| July, | +.002 | −.008 | −.017 | −.016 | −.014 | −.003 | +.007 | +.018 | +.026 | +.030 | +.027 | +.018 | +.005 | −.012 | −.024 | −.034 | −.035 | −.031 | −.019 | −.003 | +.014 | +.027 | +.027 | +.018 | 29.623 | 27.942 |
| August, | +.005 | −.006 | −.015 | −.017 | −.015 | −.006 | +.007 | +.019 | +.028 | +.030 | +.025 | +.015 | −.002 | −.017 | −.030 | −.035 | −.037 | −.027 | −.017 | +.001 | +.017 | +.029 | +.028 | +.019 | 29.614 | 27.933 |
| September, | −.001 | −.011 | −.019 | −.018 | −.013 | −.002 | +.013 | +.029 | +.036 | +.036 | +.028 | +.012 | −.013 | −.028 | −.036 | −.038 | −.035 | −.024 | −.010 | +.008 | +.024 | +.029 | +.025 | +.018 | 29.751 | 28.053 |
| October, | −.001 | −.011 | −.017 | −.021 | −.015 | .000 | +.016 | +.035 | +.044 | +.044 | +.032 | +.012 | −.015 | −.034 | −.043 | −.040 | −.032 | −.023 | −.008 | +.011 | +.020 | +.021 | +.017 | +.011 | 29.909 | 28.182 |
| November, | +.002 | −.006 | −.013 | −.014 | −.009 | +.005 | +.024 | +.039 | +.051 | +.048 | +.032 | +.006 | −.026 | −.047 | −.054 | −.051 | −.040 | −.026 | −.009 | +.009 | +.020 | +.024 | +.021 | +.015 | 30.058 | 28.299 |
| December, | +.004 | −.003 | −.011 | −.014 | −.009 | +.002 | +.018 | +.036 | +.053 | +.054 | +.038 | +.007 | −.026 | −.045 | −.054 | −.049 | −.038 | −.026 | −.009 | +.007 | +.016 | +.019 | +.016 | +.010 | 30.036 | 28.265 |
| Means, | +.003 | −.007 | −.017 | −.019 | −.015 | −.002 | +.014 | +.080 | +.041 | +.044 | +.035 | +.017 | −.008 | −.027 | −.039 | −.042 | −.038 | −.029 | −.015 | +.002 | +.015 | +.022 | +.021 | +.014 | 29.866 | 28.129 |

## TABLE II.

*Mean Temperature at the Observatory and at the Peak for each Month in the Year 1885, and Mean Diurnal Variation at the Observatory.*

| Month. | 1 a. | 2 a. | 3 a. | 4 a. | 5 a. | 6 a. | 7 a. | 8 a. | 9 a. | 10 a. | 11 a. | Noon. | 1 p. | 2 p. | 3 p. | 4 p. | 5 p. | 6 p. | 7 p. | 8 p. | 9 p. | 10 p. | 11 p. | Midt. | Mean. Observ-atory. | Mean. Peak. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January, | −1.2 | −1.3 | −1.6 | −1.8 | −1.9 | −2.0 | −2.1 | −1.5 | −0.5 | +0.6 | +1.7 | +2.6 | +3.3 | +3.3 | +3.0 | +2.3 | +1.5 | +0.2 | −0.1 | −0.3 | −0.5 | −0.7 | −0.8 | −1.1 | 58.7 | 51.1 |
| February, | −0.9 | −1.2 | −1.4 | −1.6 | −1.7 | −1.8 | −1.7 | −1.2 | −0.6 | +0.2 | +1.0 | +1.8 | +2.3 | +2.2 | +2.1 | +1.3 | +0.9 | +0.5 | +0.4 | +0.2 | +0.2 | +0.2 | −0.1 | −0.5 | 54.9 | 48.1 |
| March, | −1.5 | −1.8 | −1.8 | −2.1 | −2.2 | −2.4 | −2.1 | −1.3 | −0.1 | +1.1 | +1.9 | +2.4 | +3.2 | +3.4 | +3.4 | +2.9 | +1.9 | +0.5 | −0.1 | −0.5 | −0.8 | −0.9 | −1.0 | −1.2 | 60.6 | 56.3 |
| April, | −1.4 | −1.7 | −1.8 | −1.9 | −1.9 | −1.9 | −1.4 | −0.7 | +0.3 | +1.1 | +1.5 | +2.1 | +2.8 | +3.1 | +2.9 | +1.8 | +1.1 | −0.1 | −0.6 | −0.7 | −0.7 | −0.8 | −0.8 | −1.0 | 70.4 | 66.3 |
| May, | −1.5 | −1.7 | −1.8 | −2.1 | −2.1 | −1.9 | −1.1 | −0.4 | +0.4 | +1.0 | +1.6 | +1.7 | +2.3 | +2.3 | +2.4 | +1.9 | +1.2 | +0.5 | −0.2 | −0.4 | −0.6 | −0.6 | −1.0 | −0.9 | 77.6 | 71.4 |
| June, | −1.4 | −1.5 | −1.6 | −1.8 | −1.9 | −1.5 | −0.9 | 0.0 | +0.7 | +1.6 | +2.1 | +2.3 | +2.6 | +2.6 | +2.4 | +1.4 | +0.8 | 0.0 | −0.7 | −0.9 | −1.0 | −1.1 | −1.2 | −1.3 | 80.6 | 74.4 |
| July, | −1.3 | −1.5 | −1.7 | −1.7 | −1.8 | −1.7 | −1.0 | −0.4 | 0.0 | +0.7 | +1.5 | +1.9 | +2.1 | +2.3 | +2.7 | +2.0 | +1.6 | +0.7 | −0.1 | −0.5 | −0.9 | −1.1 | −1.3 | −1.4 | 80.9 | 75.1 |
| August, | −1.2 | −1.3 | −1.4 | −1.6 | −1.7 | −1.8 | −1.0 | −0.3 | +0.5 | +1.3 | +1.7 | +2.0 | +1.9 | +2.0 | +2.1 | +1.9 | +1.3 | +0.3 | −0.4 | −0.7 | −1.0 | −0.8 | −0.9 | −1.0 | 80.0 | 74.8 |
| September, | −1.3 | −1.3 | −1.6 | −1.8 | −1.8 | −1.9 | −1.3 | −0.2 | +0.7 | +1.4 | +2.1 | +2.2 | +2.8 | +2.6 | +2.1 | +1.8 | +0.9 | 0.0 | −0.5 | −0.8 | −0.9 | −0.9 | −1.0 | −1.1 | 78.7 | 73.2 |
| October, | −1.0 | −1.3 | −1.5 | −1.6 | −1.8 | −2.0 | −1.5 | −0.4 | +0.7 | +1.4 | +1.8 | +2.1 | +2.3 | +2.2 | +1.9 | +1.3 | +0.8 | −0.1 | −0.2 | −0.4 | −0.4 | −0.4 | −0.6 | −0.9 | 75.1 | 69.3 |
| November, | −1.5 | −1.8 | −1.9 | −2.2 | −2.4 | −2.5 | −2.2 | −1.1 | +0.3 | +1.5 | +2.3 | +2.8 | +3.2 | +3.2 | +2.9 | +2.2 | +1.3 | +0.3 | −0.2 | −0.4 | −0.7 | −1.0 | −1.2 | −1.4 | 68.0 | 62.0 |
| December, | −1.3 | −1.4 | −1.6 | −1.9 | −2.1 | −2.3 | −2.1 | −1.2 | −0.1 | +1.3 | +1.9 | +2.4 | +2.9 | +2.8 | +2.6 | +1.9 | +1.2 | +0.5 | +0.1 | −0.2 | −0.4 | −0.7 | −0.9 | −1.4 | 63.6 | 58.3 |
| Means, | −1.3 | −1.5 | −1.6 | −1.8 | −1.9 | −2.0 | −1.5 | −0.7 | +0.2 | +1.1 | +1.8 | +2.2 | +2.6 | +2.7 | +2.5 | +1.9 | +1.2 | +0.3 | −0.2 | −0.5 | −0.6 | −0.7 | −0.9 | −1.1 | 70.8 | 65.0 |

## TABLE III.

*Mean Humidity at the Observatory and at the Peak for each Month in the Year 1885, and Mean Diurnal Variation at the Observatory.*

| Month. | 1 a. | 2 a. | 3 a. | 4 a. | 5 a. | 6 a. | 7 a. | 8 a. | 9 a. | 10 a. | 11 a. | Noon. | 1 p. | 2 p. | 3 p. | 4 p. | 5 p. | 6 p. | 7 p. | 8 p. | 9 p. | 10 p. | 11 p. | Midt. | Mean. Observ-atory. | Mean. Peak. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January, | +4 | +3 | +4 | +4 | +3 | +4 | +5 | +2 | +1 | −3 | −4 | −6 | −7 | −8 | −7 | −6 | −3 | 0 | +2 | +2 | +3 | +3 | +3 | +4 | 77 | 89 |
| February, | +3 | +3 | +4 | +4 | +4 | +4 | +4 | +2 | +1 | −1 | −2 | −4 | −4 | −4 | −4 | −2 | −1 | 0 | 0 | +1 | +1 | 0 | 0 | +2 | 81 | 94 |
| March, | +3 | +4 | +4 | +4 | +4 | +4 | +4 | +3 | −1 | −4 | −5 | −6 | −7 | −8 | −8 | −7 | −4 | −2 | +1 | +2 | +4 | +4 | +4 | +4 | 85 | 88 |
| April, | +3 | +5 | +4 | +4 | +3 | +3 | +2 | +1 | −1 | −4 | −5 | −6 | −7 | −6 | −6 | −1 | 0 | +2 | +3 | +3 | +3 | +3 | +3 | +3 | 89 | 94 |
| May, | +4 | +4 | +4 | +4 | +4 | +5 | +2 | −1 | −3 | −5 | −4 | −5 | −6 | −6 | −4 | −4 | −2 | 0 | +2 | +3 | +3 | +2 | +3 | +3 | 87 | 96 |
| June, | +4 | +4 | +4 | +5 | +5 | +4 | +2 | 0 | −2 | −4 | −6 | −7 | −9 | −8 | −8 | −6 | −4 | −1 | +1 | +2 | +2 | +3 | +4 | +4 | 85 | 94 |
| July, | +3 | +3 | +3 | +4 | +5 | +4 | +3 | +1 | 0 | −3 | −5 | −6 | −6 | −7 | −8 | −6 | −5 | −3 | 0 | +1 | +2 | +3 | +3 | +3 | 84 | 94 |
| August, | +3 | +3 | +4 | +4 | +4 | +4 | +2 | 0 | −3 | −4 | −5 | −6 | −5 | −6 | −5 | −5 | −3 | −3 | 0 | +2 | +4 | +3 | +3 | +4 | 85 | 94 |
| September, | +5 | +4 | +4 | +4 | +4 | +4 | +3 | −1 | −3 | −5 | −7 | −7 | −8 | −8 | −7 | −6 | −3 | −1 | +1 | +3 | +3 | +3 | +4 | +3 | 81 | 91 |
| October, | +4 | +4 | +4 | +4 | +4 | +4 | +4 | 0 | −3 | −6 | −8 | −7 | −7 | −6 | −4 | −3 | −1 | +1 | +2 | +2 | +3 | +3 | +3 | +3 | 70 | 85 |
| November, | +5 | +5 | +5 | +6 | +6 | +3 | +3 | −1 | −4 | −6 | −7 | −8 | −8 | −8 | −7 | −4 | −2 | −1 | +1 | 0 | +1 | +3 | +4 | +4 | 61 | 80 |
| December, | +5 | +5 | +3 | +3 | +3 | +4 | +3 | +2 | 0 | −5 | −4 | −6 | −7 | −6 | −6 | −4 | −2 | 0 | +3 | +2 | +2 | +4 | +4 | +6 | 70 | 86 |
| Means, | +4 | +4 | +4 | +4 | +4 | +4 | +3 | +1 | −2 | −4 | −5 | −6 | −7 | −7 | −6 | −4 | −3 | −1 | +1 | +2 | +3 | +3 | +3 | +4 | 80 | 90 |

## TABLE IV.

*Mean Tension of Aqueous Vapour at the Observatory and at the Peak for each Month in the Year 1885, and Mean Diurnal Variation at the Observatory.*

| Month. | 1 a. | 2 a. | 3 a. | 4 a. | 5 a. | 6 a. | 7 a. | 8 a. | 9 a. | 10 a. | 11 a. | Noon. | 1 p. | 2 p. | 3 p. | 4 p. | 5 p. | 6 p. | 7 p. | 8 p. | 9 p. | 10 p. | 11 p. | Midt. | Mean. Observ-atory. | Mean. Peak. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January, | +.003 | −.001 | −.003 | −.005 | −.010 | −.009 | −.006 | −.010 | −.002 | −.006 | .000 | +.006 | +.006 | +.002 | +.004 | +.001 | +.002 | +.002 | +.007 | +.007 | +.006 | +.005 | +.004 | +.002 | 0.383 | 0.353 |
| February, | .000 | −.004 | −.004 | −.004 | −.005 | −.009 | −.008 | −.007 | −.006 | −.003 | .000 | +.001 | +.008 | +.006 | +.005 | +.004 | +.004 | +.004 | +.002 | +.005 | +.005 | +.002 | −.005 | −.002 | .352 | .323 |
| March, | −.007 | −.006 | −.009 | −.014 | −.015 | −.019 | −.014 | −.004 | −.002 | −.002 | +.003 | +.005 | +.010 | +.011 | +.007 | +.011 | +.012 | +.003 | +.004 | +.003 | +.008 | +.009 | +.004 | +.004 | .457 | .420 |
| April, | −.007 | −.006 | −.012 | −.015 | −.018 | −.018 | −.018 | −.016 | −.007 | −.003 | −.009 | −.002 | +.008 | +.019 | +.022 | +.025 | +.023 | +.013 | +.008 | +.006 | +.006 | +.003 | +.003 | +.002 | .668 | .618 |
| May, | −.006 | −.012 | −.015 | −.015 | −.015 | −.013 | −.012 | −.017 | −.015 | −.019 | +.002 | +.001 | +.006 | +.010 | +.026 | +.016 | +.020 | +.013 | +.010 | +.008 | +.011 | +.006 | +.004 | +.006 | .821 | .748 |
| June, | +.006 | +.007 | +.004 | +.003 | +.004 | −.001 | +.003 | +.005 | .000 | +.005 | +.008 | +.001 | −.012 | −.008 | −.005 | −.014 | −.011 | −.004 | −.007 | .000 | .000 | +.006 | +.008 | +.009 | .882 | .806 |
| July, | .000 | −.003 | −.009 | .000 | +.002 | −.004 | +.005 | +.010 | +.004 | −.001 | −.007 | +.001 | +.003 | −.005 | +.003 | −.001 | −.004 | −.001 | .000 | +.006 | +.003 | +.001 | .000 | .000 | .878 | .821 |
| August, | .000 | −.003 | −.001 | −.007 | −.006 | −.009 | −.003 | −.007 | −.005 | +.001 | +.001 | +.001 | +.003 | −.003 | +.009 | +.003 | +.006 | −.011 | −.006 | +.002 | +.011 | +.012 | +.009 | +.011 | .866 | .816 |
| September, | +.016 | +.012 | +.003 | −.002 | −.002 | −.005 | −.005 | −.008 | −.002 | −.012 | −.017 | −.010 | −.006 | −.012 | −.009 | −.010 | −.005 | −.002 | +.005 | +.009 | +.015 | +.015 | +.016 | +.009 | .792 | .755 |
| October, | +.012 | +.005 | +.001 | +.002 | −.003 | −.004 | +.001 | −.003 | −.011 | −.024 | −.029 | −.026 | −.017 | −.008 | +.003 | −.001 | +.003 | +.008 | +.009 | +.015 | +.019 | +.019 | +.014 | +.011 | .617 | .617 |
| November, | +.016 | +.014 | +.008 | +.012 | +.009 | −.011 | −.013 | −.018 | −.018 | −.015 | −.013 | −.013 | −.012 | −.005 | −.002 | +.008 | +.004 | +.001 | +.008 | +.001 | +.005 | +.016 | +.015 | +.012 | .424 | .463 |
| December, | +.008 | +.003 | −.007 | −.009 | −.012 | −.012 | −.012 | −.009 | −.005 | −.006 | −.001 | −.002 | −.006 | +.002 | −.005 | +.005 | +.008 | −.008 | +.014 | +.008 | +.010 | +.012 | +.008 | +.011 | .424 | .440 |
| Means, | +.003 | .000 | −.004 | −.005 | −.006 | −.009 | −.007 | −.007 | −.006 | −.007 | −.005 | −.003 | −.001 | +.001 | +.005 | +.004 | +.005 | +.002 | +.004 | +.006 | +.008 | +.009 | +.007 | +.006 | 0.630 | 0.598 |

## TABLE V.

*Total Hourly Duration of Sunshine for each Month in the Year 1885, and Total Monthly Duration of Sunshine.*

| Month. | 6 a. | 7 a. | 8 a. | 9 a. | 10 a. | 11 a. | Noon. | 1 p. | 2 p. | 3 p. | 4 p. | 5 p. | 6 p. | Total Record. | Total Possible. | Percentage of Possible. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January, | ... | 1.5 | 10.7 | 13.2 | 14.1 | 13.3 | 14.5 | 13.8 | 11.8 | 11.9 | 11.6 | 2.6 | ... | 119.0 | 311 | 38 |
| February, | ... | 0.6 | 2.4 | 2.9 | 3.7 | 3.3 | 3.3 | 2.0 | 1.9 | 1.2 | 1.0 | ... | ... | 22.3 | 294 | 8 |
| March, | ... | 4.1 | 9.8 | 11.5 | 12.5 | 13.3 | 14.2 | 14.5 | 13.9 | 13.6 | 12.1 | 4.9 | ... | 124.4 | 344 | 36 |
| April, | ... | 3.8 | 8.1 | 10.6 | 15.1 | 14.1 | 16.1 | 16.7 | 17.0 | 14.9 | 13.4 | 6.9 | 0.4 | 137.1 | 353 | 39 |
| May, | 3.2 | 10.1 | 12.6 | 15.0 | 15.7 | 16.8 | 17.2 | 18.7 | 16.7 | 15.2 | 12.5 | 9.5 | 2.6 | 165.8 | 380 | 44 |
| June, | 4.3 | 13.0 | 13.7 | 15.7 | 14.8 | 15.3 | 14.7 | 14.6 | 14.5 | 12.5 | 9.8 | 10.7 | 2.8 | 156.4 | 376 | 42 |
| July, | 5.3 | 13.1 | 16.8 | 16.2 | 17.3 | 18.4 | 15.3 | 15.1 | 16.7 | 16.2 | 15.3 | 12.3 | 3.1 | 181.1 | 384 | 47 |
| August, | 2.9 | 11.2 | 15.0 | 15.5 | 14.7 | 13.2 | 14.2 | 14.1 | 15.2 | 13.3 | 11.3 | 9.3 | 1.9 | 151.8 | 370 | 41 |
| September, | 0.2 | 9.0 | 12.1 | 18.0 | 21.6 | 20.5 | 18.7 | 19.7 | 14.5 | 12.6 | 12.9 | 9.0 | ... | 168.8 | 340 | 50 |
| October, | 0.1 | 11.5 | 20.1 | 23.7 | 25.2 | 24.9 | 24.3 | 24.1 | 23.7 | 21.2 | 18.4 | 10.7 | ... | 227.9 | 331 | 69 |
| November, | ... | 10.2 | 16.9 | 19.0 | 22.6 | 24.3 | 23.4 | 22.3 | 21.8 | 20.2 | 20.1 | 6.5 | ... | 207.3 | 306 | 68 |
| December, | ... | 6.3 | 21.2 | 23.4 | 23.9 | 24.5 | 24.1 | 24.0 | 24.2 | 22.6 | 18.9 | 5.1 | ... | 218.2 | 307 | 71 |
| Sums, | 16.0 | 94.4 | 159.4 | 184.7 | 201.2 | 201.9 | 200.0 | 199.6 | 191.9 | 175.4 | 157.3 | 87.5 | 10.8 | 1880.1 | 4096 | 46 |

## TABLE VI.

*Total Hourly Rainfall for each Month in the Year 1885.*

| Month. | 1 a. | 2 a. | 3 a. | 4 a. | 5 a. | 6 a. | 7 a. | 8 a. | 9 a. | 10 a. | 11 a. | Noon. | 1 p. | 2 p. | 3 p. | 4 p. | 5 p. | 6 p. | 7 p. | 8 p. | 9 p. | 10 p. | 11 p. | Midt. | Sum. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January, ..... | 0.035 | 0.005 | ... | 0.010 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 0.100 | 0.045 | 0.070 | 0.030 | 0.180 | 0.250 | 0.145 | 0.870 |
| February, ..... | 0.120 | 0.230 | 0.215 | 0.210 | 0.230 | 0.125 | 0.220 | 0.110 | 0.225 | 0.065 | 0.035 | 0.140 | 0.125 | 0.120 | 0.085 | 0.055 | 0.035 | 0.025 | 0.010 | 0.045 | 0.085 | 0.020 | 0.060 | 0.110 | 2.700 |
| March, ..... | 0.055 | 0.175 | 0.140 | 0.060 | 0.120 | 0.165 | 0.045 | 0.110 | 0.135 | 0.050 | 0.260 | 0.505 | 0.210 | ... | 0.010 | 0.135 | 0.015 | 0.050 | 0.010 | 0.005 | ... | ... | 0.150 | 0.065 | 2.470 |
| April, ..... | 0.805 | 0.970 | 0.585 | 0.190 | 0.145 | 0.280 | 0.430 | 0.760 | 0.800 | 0.600 | 2.520 | 1.695 | 1.610 | 0.310 | 0.400 | 0.080 | 0.115 | 0.080 | 0.095 | 0.140 | 0.655 | 0.660 | 0.395 | 0.570 | 14.890 |
| May, ..... | 0.305 | 1.135 | 0.025 | 0.065 | 0.010 | 0.165 | 0.090 | 0.050 | 0.610 | 0.905 | 0.035 | 0.305 | 0.050 | 0.010 | 0.015 | 0.065 | 0.130 | 0.060 | 0.035 | 0.010 | 0.155 | 0.305 | 0.090 | 0.235 | 4.860 |
| June, ..... | 0.465 | 0.615 | 1.495 | 0.435 | 1.405 | 0.985 | 1.620 | 2.450 | 3.250 | 2.385 | 1.435 | 0.965 | 1.890 | 0.245 | 0.805 | 1.200 | 0.800 | 1.545 | 0.550 | 2.215 | 1.105 | 1.655 | 1.370 | 0.475 | 31.360 |
| July, ..... | 0.265 | 0.440 | 0.220 | 0.980 | 0.385 | 0.160 | 0.470 | 1.825 | 3.195 | 2.340 | 0.850 | 0.170 | 0.610 | 0.325 | 0.180 | 0.120 | 0.025 | 0.150 | 0.065 | 0.060 | 0.130 | 0.195 | 0.130 | 0.255 | 13.545 |
| August, ..... | 2.250 | 3.710 | 2.665 | 0.920 | 1.445 | 1.950 | 1.840 | 3.095 | 1.165 | 0.820 | 0.665 | 0.735 | 2.120 | 0.390 | 0.570 | 0.750 | 0.175 | 0.705 | 1.105 | 0.275 | 0.295 | 0.070 | 0.100 | 0.050 | 27.865 |
| September, ..... | 0.625 | 0.360 | 0.670 | 0.655 | 0.760 | 0.355 | 0.230 | 0.225 | 0.320 | 0.175 | 0.310 | 0.050 | 0.040 | 0.110 | 0.255 | 0.215 | 0.015 | 0.045 | 0.185 | 0.145 | 0.010 | 0.050 | 0.005 | 0.035 | 5.845 |
| October, ..... | 0.005 | 0.020 | 0.040 | ... | 0.155 | 0.280 | 0.140 | 0.080 | 0.130 | 0.120 | 0.025 | 0.145 | 0.125 | 0.295 | 0.200 | 0.260 | 0.150 | 0.200 | 0.060 | 0.015 | 0.065 | ... | ... | ... | 2.510 |
| November, ..... | 0.015 | 0.405 | 0.090 | 0.145 | 0.045 | 0.020 | ... | 0.005 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 0.010 | 0.020 | 0.005 | 0.760 |
| December, ..... | 0.040 | 0.015 | ... | ... | ... | 0.035 | 0.010 | ... | ... | ... | 0.010 | 0.010 | 0.090 | 0.340 | 0.350 | 0.100 | 0.100 | ... | ... | 0.010 | 0.015 | 0.110 | 0.005 | 0.010 | 1.250 |
| Mean, ..... | 0.415 | 0.673 | 0.512 | 0.306 | 0.392 | 0.377 | 0.425 | 0.726 | 0.819 | 0.622 | 0.512 | 0.393 | 0.572 | 0.179 | 0.239 | 0.248 | 0.130 | 0.247 | 0.180 | 0.249 | 0.212 | 0.271 | 0.215 | 0.163 | 9.077 |

## TABLE VII.

*Number of Hours, during portion of which it rained, for each Month in the Year 1885.*

| Month. | 1 a. | 2 a. | 3 a. | 4 a. | 5 a. | 6 a. | 7 a. | 8 a. | 9 a. | 10 a. | 11 a. | Noon. | 1 p. | 2 p. | 3 p. | 4 p. | 5 p. | 6 p. | 7 p. | 8 p. | 9 p. | 10 p. | 11 p. | Midt. | Total. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January, ..... | 1 | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 2 | 2 | 3 | 1 | 1 | 1 | 15 |
| February, ..... | 3 | 5 | 5 | 4 | 4 | 3 | 3 | 4 | 4 | 3 | 1 | 3 | 4 | 3 | 5 | 4 | 4 | 3 | 1 | 3 | 5 | 2 | 2 | 5 | 83 |
| March, ..... | 3 | 4 | 2 | 1 | 2 | 4 | 3 | 4 | 2 | 5 | 1 | 2 | 3 | ... | 2 | 5 | 2 | 5 | 2 | 1 | ... | ... | 3 | 3 | 59 |
| April, ..... | 3 | 2 | 3 | 4 | 2 | 1 | 2 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 5 | 4 | 2 | 1 | 4 | 4 | 3 | 4 | 5 | 3 | 75 |
| May, ..... | 3 | 2 | 1 | 4 | 2 | 2 | 2 | 1 | 5 | 6 | 1 | 1 | 2 | 1 | 1 | 2 | 3 | 1 | 3 | 2 | 4 | 4 | 3 | 4 | 60 |
| June, ..... | 5 | 4 | 8 | 3 | 5 | 4 | 6 | 6 | 6 | 5 | 4 | 4 | 4 | 3 | 7 | 7 | 3 | 5 | 1 | 2 | 2 | 4 | 3 | 4 | 105 |
| July, ..... | 5 | 6 | 3 | 2 | 3 | 3 | 5 | 9 | 7 | 6 | 6 | 4 | 4 | 5 | 3 | 4 | 1 | 3 | 3 | 3 | 8 | 2 | 4 | 3 | 102 |
| August, ..... | 4 | 5 | 6 | 7 | 7 | 8 | 7 | 9 | 7 | 6 | 4 | 7 | 6 | 5 | 5 | 5 | 5 | 3 | 5 | 6 | 6 | 4 | 3 | 2 | 132 |
| September, ..... | 6 | 6 | 4 | 5 | 4 | 3 | 5 | 3 | 2 | 2 | 3 | 2 | 1 | 4 | 4 | 2 | 2 | 2 | 1 | 3 | 2 | 3 | 1 | 1 | 71 |
| October, ..... | 1 | 1 | 1 | ... | 2 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | ... | ... | ... | 28 |
| November, ..... | 1 | 2 | 2 | 2 | 2 | 3 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | 16 |
| December, ..... | 1 | 1 | ... | ... | ... | 4 | 1 | ... | ... | ... | 1 | 1 | 1 | 1 | 1 | 1 | 1 | ... | ... | 1 | 2 | 1 | 1 | 2 | 21 |
| Total, ..... | 36 | 39 | 35 | 33 | 33 | 38 | 36 | 41 | 38 | 38 | 25 | 28 | 29 | 26 | 34 | 35 | 24 | 26 | 24 | 29 | 38 | 26 | 27 | 29 | 767 |

## TABLE VIII.

*Mean Hourly Velocity of the Wind at the Observatory and at the Peak for each Month in the Year 1885, and Mean Diurnal Variation at the Observatory.*

| Month. | 1 a. | 2 a. | 3 a. | 4 a. | 5 a. | 6 a. | 7 a. | 8 a. | 9 a. | 10 a. | 11 a. | Noon. | 1 p. | 2 p. | 3 p. | 4 p. | 5 p. | 6 p. | 7 p. | 8 p. | 9 p. | 10 p. | 11 p. | Midt. | Mean. Observatory. | Mean. Peak. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January, | −0.4 | −0.1 | −0.8 | −0.5 | −0.2 | +0.1 | +0.2 | +0.9 | +0.9 | +1.7 | +1.6 | +1.9 | +1.7 | +2.0 | +1.5 | +1.0 | −0.4 | −1.3 | −2.4 | −2.3 | −1.5 | −1.5 | −1.4 | −1.0 | 16.8 | 24 |
| February, | −0.9 | −0.4 | −1.4 | −0.1 | +0.5 | +1.4 | +0.5 | −0.2 | +0.5 | +1.3 | +2.4 | +1.8 | +1.4 | +2.0 | +1.6 | −0.3 | −1.3 | −1.6 | −1.4 | −2.0 | −2.0 | −1.5 | −0.6 | −0.9 | 16.8 | 25 |
| March, | −1.1 | −1.0 | +0.6 | +0.9 | +1.2 | +1.5 | +1.8 | +2.1 | +1.9 | +2.1 | +1.5 | +1.2 | +1.5 | +0.8 | +0.2 | −0.8 | −1.3 | −1.6 | −2.0 | −1.9 | −2.1 | −2.4 | −2.5 | −1.4 | 16.3 | 24 |
| April, | −1,0 | −0.5 | −1.0 | −0.8 | −0.8 | −0.7 | −0.6 | 0.0 | +0.6 | +2.6 | +3.2 | +2.6 | +1.4 | +1.3 | +1.0 | +1.8 | +1.2 | +0.3 | −1.4 | −1.3 | −1.9 | −2.2 | −2.0 | −1.2 | 16.7 | 25 |
| May, | −0.3 | −1.2 | −0.5 | −1.4 | −1.2 | −1.2 | 0.0 | +0.2 | +1.2 | +2.0 | +2.2 | +2.7 | +2.3 | +1.9 | +1.6 | +1.1 | +0.3 | −0.5 | −1.4 | −0.8 | −1.2 | −1.1 | −2.2 | −1.4 | 14.4 | 25 |
| June, | −1.5 | −1.3 | −0.7 | −1.4 | −2.0 | −2.2 | −1.4 | +0.2 | +1.6 | +3.1 | +3.8 | +3.6 | +4.2 | +3,0 | +2.6 | +1.1 | +0.4 | −0.7 | −1.6 | −2.4 | −2.8 | −2.5 | −2.0 | −2.0 | 13.6 | 26 |
| July, | −1.4 | −0.6 | −1.6 | −1.7 | −1.7 | −1.9 | −1.0 | −0.9 | +0.7 | +1.9 | +2.2 | +2.6 | +3.4 | +2.3 | +2.2 | +1.9 | +1.3 | 0.0 | −0.5 | −1.1 | −1.2 | −1.5 | −1.6 | −1.7 | 11.1 | 25 |
| August, | −0.7 | −0.6 | −0.9 | −1.5 | −1.1 | −1.6 | −2.2 | −0.3 | −0.1 | +1.6 | +2.1 | +2.5 | +4.1 | +4.0 | +2.5 | +1.9 | +1.7 | −0.4 | −1.8 | −2.0 | −1.8 | −2.2 | −2.0 | −1.5 | 12.1 | 26 |
| September, | −2.7 | −2.5 | −2.0 | −2.6 | −3.0 | −2.9 | −3.1 | −1.6 | −0.1 | +1.1 | +4.2 | +4.7 | +4.9 | +5.1 | +4.1 | +3.7 | +1.9 | +1.1 | +0.1 | −1.6 | −2.1 | −2.6 | −2.5 | −1.9 | 9.1 | 23 |
| October, | −0.4 | −0.3 | −0.1 | −0.3 | −1.5 | −1.4 | −1.2 | −0.1 | +1.0 | +1.7 | +4.3 | +2.9 | +2.7 | +2.6 | +2.2 | +1.5 | −0.2 | −2 1 | −3.3 | −2.9 | −2.3 | −1.0 | −0.5 | −0.5 | 14.6 | 25 |
| November, | −1.2 | −1.0 | −2.5 | −1.9 | −1.9 | +0,2 | −0.1 | +0.3 | +1.5 | +2.6 | +3.6 | +3.3 | +2.4 | +2.9 | +3.3 | +1.7 | +0.9 | −0.7 | −2.2 | −2.1 | −1.5 | −2.4 | −2.4 | −2.1 | 12.2 | 23 |
| December, | −2.0 | −2.1 | −1.2 | −0.4 | −0.4 | −0.3 | −1.5 | −0.8 | +0.3 | +2.1 | +2.8 | +2.6 | +3.0 | +4.0 | +3.1 | +2.4 | +0.4 | −0.7 | −1.0 | −1.4 | −1.7 | −2.7 | −2.5 | −2.1 | 14.0 | 25 |
| Mean, | −1.1 | −1.0 | −1.0 | −1.0 | −1.0 | −0.8 | −0.7 | 0.0 | +0.8 | +2.0 | +2.8 | +2.7 | +2.7 | +2.7 | +2.2 | +1.4 | +0.4 | −0.7 | −1.6 | −1.8 | −1.8 | −2.0 | −1.8 | −1.5 | 14.0 | 25 |

## TABLE IX.

*Mean Direction of the Wind at the Observatory and at the Peak for each Month in the Year 1885, and Mean Diurnal Variation at the Observatory.*

| Month. | 1 a. | 2 a. | 3 a. | 4 a. | 5 a. | 6 a. | 7 a. | 8 a. | 9 a. | 10 a. | 11 a. | Noon. | 1 p. | 2 p. | 3 p. | 4 p. | 5 p. | 6 p. | 7 p. | 8 p. | 9 p. | 10 p. | 11 p. | Midt. | Mean. Observatory. | Mean. Peak. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January, | − 2° | − 2° | − 2° | − 2° | − 1° | − 2° | − 6° | − 1° | − 3° | − 2° | + 5° | + 3° | + 2° | + 6° | + 8° | + 7° | + 4° | − 2° | − 2° | − 3° | − 3° | − 5° | − 4° | − 2° | E 9° N | E 4° N |
| February, | − 7 | − 5 | + 1 | + 2 | + 3 | − 2 | + 3 | − 1 | + 2 | + 2 | − 1 | + 6 | + 6 | + 4 | + 3 | 0 | + 2 | + 4 | − 4 | + 1 | − 1 | 0 | − 2 | − 8 | E 13° N | E 18° N |
| March, | + 2 | − 2 | + 2 | + 3 | + 3 | + 3 | + 4 | + 2 | + 3 | + 4 | + 1 | + 2 | + 1 | 0 | − 1 | − 9 | − 4 | − 8 | − 7 | − 3 | − 1 | 0 | + 2 | + 1 | E 6° N | E 15° S |
| April, | − 6 | − 1 | − 2 | 0 | + 2 | + 2 | 0 | 0 | − 1 | + 2 | + 2 | − 1 | + 1 | + 3 | + 4 | + 6 | + 5 | + 6 | 0 | − 1 | − 3 | − 3 | − 5 | − 2 | E | E 39° S |
| May, | 0 | − 6 | − 6 | − 5 | − 4 | − 5 | + 1 | − 3 | + 4 | 0 | + 7 | + 5 | + 7 | + 4 | + 5 | + 7 | + 4 | − 2 | 0 | 0 | − 3 | − 4 | − 8 | + 2 | E 37° S | S 22° E |
| June, | −10 | − 6 | − 1 | − 4 | − 4 | + 6 | − 4 | +12 | − 6 | + 3 | +12 | +22 | +16 | + 8 | +11 | +17 | + 9 | − 6 | −12 | −15 | −16 | −17 | −10 | −16 | E 41° S | S 16° E |
| July, | − 6 | − 1 | + 6 | +15 | +19 | +11 | + 6 | +19 | +22 | +18 | +27 | +13 | − 3 | + 7 | + 4 | − 7 | −15 | −10 | −13 | −18 | −24 | −31 | −21 | −13 | S 11° W | S 22° W |
| August, | + 5 | +21 | +20 | +33 | +17 | + 1 | + 1 | − 3 | −36 | 0 | − 3 | + 5 | − 3 | + 4 | +10 | +20 | +18 | − 6 | + 5 | −15 | −37 | −31 | −17 | −18 | S 42° E | S 16° E |
| September, | − 2 | +15 | −24 | −40 | −32 | −26 | −34 | −25 | −14 | − 9 | +19 | +14 | +15 | +10 | +18 | +23 | +22 | +27 | +19 | +19 | +17 | + 7 | −10 | − 5 | E 18° N | E 24° S |
| October, | − 5 | − 9 | −13 | −14 | −14 | −18 | −18 | −14 | − 5 | + 3 | + 7 | + 8 | +13 | +18 | +14 | +13 | +10 | +10 | + 8 | + 2 | − 2 | + 3 | + 5 | − 1 | E 14° N | E 5° N |
| November, | −15 | −21 | −14 | −23 | −16 | −22 | −18 | −12 | − 9 | + 5 | +15 | +25 | +27 | +25 | +29 | +24 | +16 | + 6 | + 3 | − 6 | − 7 | −11 | − 3 | − 8 | E 36° N | E 20° N |
| December, | −11 | −14 | −15 | −12 | − 8 | − 5 | − 6 | 0 | 0 | + 6 | +10 | +14 | +15 | +12 | +10 | +11 | + 6 | + 3 | + 2 | − 1 | − 4 | − 4 | − 9 | − 6 | E 17° N | E 8° N |
| Mean, | − 5 | − 3 | − 4 | − 4 | − 3 | − 5 | − 6 | − 2 | − 4 | + 3 | + 8 | +10 | + 8 | + 8 | +10 | + 9 | + 6 | + 2 | 0 | − 3 | − 7 | − 8 | − 7 | − 6 | E | E 27° S |

## TABLE X.

*Total Distance traversed by, as well as Total Duration and Average Velocity of Winds from eight different points of the Compass during the Year* 1885.

| WIND. | Total Distance. Miles. | Duration. Hours. | Velocity. Miles per Hour. |
|---|---|---|---|
| N, | 8078 | 765 | 10.6 |
| NE, | 11608 | 887 | 13.1 |
| E, | 74439 | 4195 | 17.7 |
| SE, | 4026 | 402 | 10.0 |
| S, | 9729 | 771 | 12.6 |
| SW, | 7105 | 501 | 14.2 |
| W, | 5115 | 594 | 8.6 |
| NW, | 1977 | 297 | 6.7 |
| Calm, | 228 | 348 | 0.7 |
| Sums and Mean, | 122305 | 8760 | 14.0 |

## TABLE XI.

*Total Rainfall, Duration of Rain, and Number of Days on which Rain was collected, at the Observatory, Stone Cutters' Island and the Peak for each month of the Year 1885.*

| Month. | OBSERVATORY. | | | STONE CUTTERS' ISLAND. | | VICTORIA PEAK. | |
|---|---|---|---|---|---|---|---|
| | Amount. *ins.* | Duration. *hrs.* | Days. | Amount. *ins.* | Days. | Amount. *ins.* | Days. |
| January, | 0.870 | 30 | 3 | 0.71 | 4 | 0.75 | 1 |
| February, | 2.700 | 95 | 13 | 2.54 | 9 | 4.04 | 11 |
| March, | 2.470 | 70 | 12 | 2.16 | 9 | 1.72 | 5 |
| April, | 14.890 | 83 | 11 | 13.72 | 10 | 18.52 | 7 |
| May, | 4.860 | 57 | 18 | 5.64 | 9 | 6.63 | 12 |
| June, | 31.360 | 84 | 20 | 26.74 | 17 | 33.58 | 15 |
| July, | 13.640 | 78 | 19 | 16.01 | 15 | 18.13 | 16 |
| August, | 28.115 | 129 | 20 | 28.81 | 21 | 33.37 | 19 |
| September, | 5.500 | 53 | 13 | 5.97 | 9 | 6.74 | 10 |
| October, | 2.510 | 25 | 6 | 2.59 | 4 | 2.49 | 4 |
| November, | 0.760 | 12 | 3 | 0.45 | 2 | 1.62 | 3 |
| December, | 1.250 | 32 | 6 | 1.03 | 2 | 1.36 | 1 |
| Year, | 108.925 | 748 | 144 | 106.37 | 111 | 128.95 | 104 |

## TABLE XII.

*Total Number of Days on which Different Meteorological Phenomena were noted and Total Number of Thunderstorms during each Month of the Year, 1885.*

| Month. | Fog. | Electric Phenomena. | Lightning. | Thunder. | Thunderstorms. | Unusual Visibility. | Dew. | Rainbows. | Lunar Halo. | Lunar Corona. | Solar Halo. | Solar Corona. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January, ..... | 1 | 0 | 0 | 0 | 0 | 4 | 3 | 0 | 0 | 0 | 0 | 0 |
| February, ..... | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 |
| March,..... | 11 | 4 | 4 | 3 | 1 | 3 | 9 | 0 | 0 | 0 | 2 | 0 |
| April, ..... | 1 | 15 | 14 | 12 | 5 | 1 | 11 | 0 | 0 | 0 | 1 | 0 |
| May, ..... | 1 | 13 | 10 | 10 | 1 | 5 | 3 | 1 | 0 | 0 | 1 | 0 |
| June, ..... | 0 | 14 | 14 | 5 | 4 | 7 | 6 | 0 | 4 | 2 | 2 | 0 |
| July, ..... | 1 | 13 | 13 | 4 | 2 | 5 | 5 | 1 | 9 | 2 | 5 | 0 |
| August, ..... | 3 | 21 | 21 | 11 | 5 | 4 | 7 | 4 | 7 | 3 | 4 | 0 |
| September, ..... | 5 | 9 | 9 | 2 | 0 | 3 | 9 | 2 | 0 | 0 | 0 | 0 |
| October, ..... | 1 | 4 | 4 | 2 | 1 | 3 | 4 | 0 | 0 | 0 | 1 | 0 |
| November, ..... | 2 | 2 | 2 | 1 | 0 | 3 | 5 | 0 | 1 | 3 | 0 | 0 |
| December, ..... | 3 | 0 | 0 | 0 | 0 | 3 | 5 | 0 | 2 | 0 | 0 | 1 |
| Sums,..... | 29 | 95 | 91 | 50 | 19 | 44 | 68 | 8 | 23 | 10 | 16 | 1 |

## TABLE XIII.

*Total Number of Times that Clouds of different forms were observed in each Month of the Year, 1885.*

| Month. | c. | c-str. | c-cum. | sm-cum. | cum. | cum-str. | str. | R-cum. | cum-nim. | nim. |
|---|---|---|---|---|---|---|---|---|---|---|
| January, ..... | 1 | 1 | 8 | 28 | 90 | 0 | 17 | 25 | 54 | 16 |
| February, ..... | 1 | 0 | 6 | 13 | 32 | 0 | 56 | 19 | 92 | 33 |
| March, ..... | 1 | 4 | 10 | 7 | 66 | 0 | 19 | 14 | 70 | 32 |
| April, ..... | 2 | 4 | 23 | 20 | 97 | 3 | 16 | 18 | 55 | 40 |
| May, ..... | 6 | 19 | 11 | 5 | 122 | 10 | 9 | 24 | 70 | 35 |
| June, ..... | 10 | 41 | 24 | 20 | 126 | 2 | 29 | 6 | 35 | 42 |
| July, ..... | 6 | 43 | 27 | 15 | 99 | 20 | 22 | 17 | 41 | 40 |
| August, ..... | 12 | 32 | 23 | 24 | 92 | 7 | 36 | 3 | 55 | 56 |
| September, ..... | 2 | 12 | 14 | 42 | 120 | 15 | 17 | 16 | 33 | 23 |
| October, ..... | 2 | 4 | 9 | 54 | 114 | 4 | 12 | 25 | 15 | 15 |
| November, ..... | 0 | 15 | 8 | 60 | 73 | 3 | 16 | 20 | 8 | 6 |
| December, ..... | 2 | 18 | 13 | 18 | 77 | 2 | 6 | 25 | 23 | 16 |
| Sums,..... | 45 | 193 | 176 | 306 | 1108 | 66 | 255 | 212 | 551 | 354 |

## TABLE XIV.

*Mean Percentage of Clouded Sky and Mean Diurnal Variation in each Month of the Year 1885.*

| Month. | 1 a. | 4 a. | 7 a. | 10 a. | 1 p. | 4 p. | 7 p. | 10 p. | Mean. |
|---|---|---|---|---|---|---|---|---|---|
| January,..... | + 3 | + 5 | + 7 | − 1 | + 1 | − 4 | − 5 | − 2 | 69 |
| February, .... | − 3 | − 7 | + 1 | 0 | + 3 | + 4 | 0 | 0 | 94 |
| March, ..... | + 1 | + 5 | + 9 | + 2 | − 7 | − 4 | + 1 | − 3 | 70 |
| April, ..... | + 5 | − 5 | + 8 | 0 | 0 | 0 | − 7 | − 4 | 76 |
| May,..... | + 8 | − 5 | + 9 | − 2 | 0 | + 3 | − 4 | −10 | 74 |
| June, ..... | 0 | − 4 | − 1 | − 3 | + 3 | + 7 | + 5 | − 7 | 74 |
| July,..... | − 9 | − 3 | + 5 | 0 | 0 | 0 | + 8 | − 3 | 74 |
| August, ..... | − 7 | 0 | + 3 | + 1 | − 1 | + 3 | + 6 | − 7 | 75 |
| September,... | 0 | + 5 | +10 | − 8 | − 1 | + 5 | 0 | −11 | 65 |
| October, ..... | + 2 | +11 | + 5 | − 2 | − 1 | − 4 | − 6 | − 4 | 50 |
| November, ... | + 5 | + 8 | +12 | − 4 | − 3 | − 8 | −13 | 0 | 46 |
| December, ... | + 5 | + 4 | 0 | 0 | − 3 | − 2 | − 7 | + 1 | 43 |
| Mean,..... | +0.8 | +1.2 | +5.7 | −1.4 | −0.7 | 0.0 | −1.8 | −4.2 | 67 |

## TABLE XV.

*Mean Sea Disturbance in each Month of the Year 1885.*

| Month. | 4 a. | 10 a. | 4 p. | 10 p. | Mean. |
|---|---|---|---|---|---|
| January,..... | 4.2 | 4.3 | 4.3 | 4.4 | 4.3 |
| February,..... | 4.3 | 4.4 | 4.1 | 4.3 | 4.3 |
| March, ..... | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| April, ..... | 2.7 | 2.8 | 2.7 | 2.6 | 2.7 |
| May, ..... | 2.8 | 3.1 | 2.8 | 2.8 | 2.9 |
| June,..... | 2.2 | 2.1 | 2.2 | 1.9 | 2.1 |
| July, ..... | 1.8 | 1.7 | 1.7 | 2.0 | 1.8 |
| August, ..... | 1.5 | 1.7 | 1.8 | 1.7 | 1.7 |
| September, ..... | 0.9 | 1.4 | 1.3 | 1.7 | 1.3 |
| October, ..... | 2.7 | 2.8 | 2.3 | 2.6 | 2.6 |
| November, ..... | 2.1 | 2.4 | 2.0 | 2.2 | 2.2 |
| December,..... | 2.1 | 2.3 | 2.2 | 2.0 | 2.2 |
| Mean, ..... | 2.5 | 2.65 | 2.5 | 2.6 | 2.6 |

## TABLE XVI.

*Monthly Extremes of the Principal Meteorological Elements Registered at the Observatory during the Year 1885.*

| Month. | Barometer. | | Temperature. | | Humidity. | Vapour Tension. | | Rain. | | Wind Velocity. | Radiation. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max. | Min. | Max. | Min. | Min. | Max. | Min. | Daily Max. | Hourly Max. | Max. | Sun Max. | Terr. Min. |
| 1885. | | | | | | | | | | | | |
| January, ..... | 30.270 | 29.919 | 71.1 | 45.6 | 58 | 0.531 | 0.251 | 0.705 | 0.250 | 35 | 136.1 | 38.0 |
| February, ..... | 30.293 | 29.756 | 69.4 | 45.0 | 57 | 0.633 | 0.256 | 1.050 | 0.130 | 39 | 129.9 | 43.5 |
| March,..... | 30.244 | 29.726 | 77.1 | 48.8 | 56 | 0.697 | 0.257 | 0.710 | 0.335 | 40 | 138.8 | 43.5 |
| April,..... | 30.021 | 29.634 | 83.1 | 61.7 | 60 | 0.834 | 0.524 | 5.210 | 2.420 | 38 | 150.0 | 60.4 |
| May, ..... | 29.962 | 29.478 | 87.4 | 66.5 | 69 | 0.949 | 0.618 | 1.450 | 1.130 | 38 | 149.5 | 65.2 |
| June,..... | 29.864 | 29.437 | 89.3 | 71.3 | 49 | 1.001 | 0.598 | 12.630 | 2.200 | 38 | 159.8 | 69.8 |
| July, ..... | 29.882 | 29.463 | 88.6 | 73.8 | 56 | 0.969 | 0.664 | 4.250 | 1.430 | 39 | 158.7 | 71.5 |
| August, ..... | 29.801 | 29.271 | 88.2 | 73.5 | 62 | 0.957 | 0.729 | 6.555 | 2.140 | 53 | 152.5 | 68.8 |
| September, ..... | 29.984 | 29.517 | 88.3 | 73.1 | 40 | 0.924 | 0.432 | 2.270 | 0.690 | 32 | 157.4 | 68.7 |
| October,..... | 30.025 | 29.752 | 85.9 | 64.3 | 41 | 0.848 | 0.306 | 2.120 | 0.295 | 34 | 151.9 | 55.8 |
| November,..... | 30.311 | 29.743 | 79.7 | 55.0 | 23 | 0.740 | 0.149 | 0.535 | 0.400 | 30 | 143.2 | 49.0 |
| December, ..... | 30.290 | 29.757 | 76.3 | 50.8 | 29 | 0.637 | 0.136 | 1.025 | 0.350 | 33 | 142.9 | 42.8 |
| Year, ..... | 30.311 | 29.271 | 89.3 | 45.0 | 23 | 1.001 | 0.136 | 12.630 | 2.420 | 53 | 159.8 | 38.0 |

## TABLE XVII.

*Monthly Extremes of the Principal Meteorological Elements Registered at Victoria Peak during the Year 1885.*

| Month. | Barometer. | | Temperature. | | Humidity. | Vapour Tension. | | Rain. | Wind Force. | Radiation. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max. | Min. | Max. | Min. | Min. | Max. | Min. | Daily Max. | Max. | Sun Max. | Terr. Min. |
| 1885. | | | | | | | | | | | |
| January, ..... | 28.419 | 28.142 | 65.8 | 40.0 | 71 | 0.522 | 0.220 | 0.75 | 6 | 128.0 | 34.5 |
| February, ..... | 28.445 | 28.016 | 67.8 | 39.0 | 69 | 0.550 | 0.222 | 1.65 | 6 | 123.0 | 38.5 |
| March, ..... | 28.388 | 28.019 | 71.7 | 42.0 | 49 | 0.633 | 0.235 | 0.75 | 6 | 138.0 | 41.5 |
| April, ..... | 28.252 | 27.950 | 75.3 | 56.4 | 82 | 0.776 | 0.481 | 8.40 | 7 | 139.4 | 55.7 |
| May, ..... | 28.225 | 27.806 | 76.5 | 62.0 | 81 | 0.852 | 0.529 | 1.80 | 6 | 140.2 | 61.6 |
| June, ..... | 28.135 | 27.809 | 81.3 | 69.0 | 63 | 0.934 | 0.563 | 14.50 | 7 | 151.0 | 66.6 |
| July, ..... | 28.170 | 27.805 | 83.3 | 70.8 | 71 | 0.919 | 0.622 | 4.42 | 7 | 149.0 | 69.1 |
| August,..... | 28.088 | 27.675 | 81.3 | 71.0 | 74 | 0.921 | 0.631 | 9.20 | 8 | 150.0 | 68.7 |
| September, ..... | 28.248 | 27.855 | 79.6 | 66.0 | 69 | 0.860 | 0.529 | 2.56 | 6 | 152.8 | 63.7 |
| October, ..... | 28.266 | 28.079 | 78.1 | 60.0 | 60 | 0.791 | 0.356 | 1.36 | 6 | 149.0 | 54.4 |
| November, ..... | 28.479 | 28.048 | 74.3 | 52.2 | 34 | 0.726 | 0.185 | 1.20 | 7 | 138.0 | 44.7 |
| December,..... | 28.459 | 28.050 | 68.8 | 47.0 | 55 | 0.611 | 0.209 | 1.36 | 6 | 137.0 | 44.4 |
| Year,..... | 28.479 | 27.675 | 83.3 | 39.0 | 34 | 0.934 | 0.185 | 14.50 | 8 | 152.8 | 34.4 |

## TABLE XVIII.

*Average Readings of Solar Radiation Thermometers and Excess over Maximum Thermometers as well as Excess of Minimum over Terrestrial Radiation Thermometers, Mean Weight of Aqueous Vapour in Troy Grains in each cubic foot of air and Diurnal Range of Temperature at the Observatory and at the Peak, and average height in feet at which the Temperature of the air was 1° lower during 1885.*

| Month. | Solar Radiation Thermometer. | | Solar Radiation. Excess over Maximum. | | Terrestrial Radiation. | | Weight of Aqueous Vapour. | | Diurnal Range. | | Height of 1° Decrease. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Observatory. | Peak. | Observatory. | Peak. | Observatory. | Peak. | Observatory. | Peak. | Observatory. | Peak. | |
| 1885. | | | | | | | | | | | |
| January, ..... | 112.8 | 107.2 | 49.8 | 51.8 | +2.5 | +1.0 | 4.24 | 3.96 | 7.6 | 8.7 | 225 |
| February, ..... | 91.4 | 90.0 | 33.0 | 39.0 | +2.0 | +0.2 | 3.91 | 3.64 | 6.1 | 5.7 | 251 |
| March, ..... | 113.2 | 109.5 | 47.8 | 48.6 | +2.4 | −0.1 | 5.03 | 4.67 | 8.3 | 9.2 | 397 |
| April, ..... | 126.7 | 121.1 | 51.7 | 51.3 | +1.3 | +1.1 | 7.23 | 6.73 | 8.0 | 6.9 | 417 |
| May, ..... | 136.5 | 122.7 | 55.2 | 48.9 | +2.2 | +0.8 | 8.75 | 8.08 | 6.9 | 4.7 | 275 |
| June, ..... | 139.0 | 127.3 | 54.2 | 50.6 | +2.9 | +0.9 | 9.36 | 8.64 | 7.3 | 4.5 | 275 |
| July, ..... | 140.3 | 126.9 | 55.8 | 49.1 | +2.4 | +0.1 | 9.31 | 8.80 | 6.8 | 4.8 | 294 |
| August, ..... | 135.6 | 126.4 | 52.0 | 48.9 | +2.3 | +0.7 | 9.19 | 8.75 | 7.2 | 5.0 | 328 |
| September, , ... | 144.3 | 137.3 | 61.8 | 61.0 | +2.7 | +0.7 | 8.43 | 8.12 | 6.5 | 5.7 | 311 |
| October, ..... | 139.8 | 135.6 | 61.7 | 62.4 | +3.3 | +1.3 | 6.61 | 6.69 | 5.7 | 7.2 | 294 |
| November, .... | 132.0 | 127.2 | 60.2 | 61.9 | +4.6 | +2.8 | 4.60 | 5.08 | 7.5 | 6.3 | 285 |
| December, ..... | 124.8 | 122.3 | 57.6 | 61.2 | +4.1 | +2.5 | 4.64 | 4.87 | 6.9 | 5.6 | 322 |
| Mean, ..... | 128.0 | 121.1 | 53.4 | 52.9 | +2.7 | +1.0 | 6.77 | 6.50 | 7.1 | 6.2 | 306 |

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Hongkong Observatory, 16th March, 1886.