*Temperature table for July, 1904.*

| Stations. | Elevation. | Mean max. | Mean min. | Cor. av'ge. | Highest. | Lowest. |
|---|---|---|---|---|---|---|
| | *Feet.* | ° | ° | ° | ° | ° |
| Hilo | 50 | ..... | ..... | ..... | ..... | ..... |
| Pepeekeo | 100 | 78.2 | 69.2 | 73.0 | 81 | 67 |
| Olaa Mill | 210 | ..... | ..... | ..... | ..... | ..... |
| Kohala | 521 | 78.7 | 67.8 | 72.5 | 80 | 65 |
| Waimea | 2,730 | 70.0 | 61.3 | 65.0 | 73 | 69 |
| Volcano House | 4,000 | 72.4 | 52.7 | 61.0 | 79 | 48 |
| Waiakoa | 2,700 | ..... | ..... | ..... | ..... | ..... |
| Keomuku | 10 | ..... | ..... | ..... | ..... | ..... |
| Kinau Street (Castle) | 50 | 83.9 | 72.8 | 77.1 | 86 | 68 |
| United States Magnetic Station | 50 | ..... | ..... | ..... | ..... | ..... |
| Ewa Mill | 60 | 84.5 | 67.6 | 75.4 | 87 | 65 |
| United States Experiment Station | 350 | 84.9 | 70.9 | 77.5 | 88 | 69 |

*Honolulu.*—Lightning in ssw. on the evenings of the 6th and 7th; slight earthquake on 23d.

Reported from other stations: Pepeekeo, Hawaii: Hard earthquake shock at 1:55 p. m. on the 17th; snow still visible on mountain tops; bright morning glows at intervals; heavy surf 10th to 12th and 21st to 27th, inclusive; easterly winds throughout, force, 1.2; average cloudiness, 6.1. Kohala, trade winds all the month. Hilo, heavy earthquake on 17th.

## COSTA RICAN CLIMATOLOGICAL DATA.

Communicated by Mr. H. PITTIER, Director, Physico-Geographic Institute.

TABLE 1.—*Hourly observations at the Observatory, San José de Costa Rica, during June, 1904.*

| Hours. | Pressure. | | Temperature. | | Relative humidity. | | Rainfall. | | |
|---|---|---|---|---|---|---|---|---|---|
| | Observed, 1904. | Normal, 1889-1903. | Observed, 1904. | Normal, 1889-1903. | Observed, 1904. | Normal, 1889-1903. | Observed, 1904. | Normal, 1889-1903. | Duration, 1904. |
| | *Inches.* | *Inches.* | ° *F.* | ° *F.* | % | % | *Ins.* | *Ins.* | *Hrs.* |
| 1 a. m | 26.15 | 26.14 | 64.6 | 64.0 | 90 | 93 | 0.02 | 0.08 | 1.67 |
| 2 a. m | 26.13 | 26.12 | 63.3 | 63.9 | 93 | 93 | 0.06 | 0.08 | 1.67 |
| 3 a. m | 26.12 | 26.11 | 63.3 | 63.3 | 89 | 93 | 0.04 | 0.05 | 1.33 |
| 4 a. m | 26.11 | 26.10 | 62.8 | 63.0 | 90 | 93 | 0.10 | 0.05 | 2.00 |
| 5 a. m | 26.11 | 26.10 | 61.7 | 62.8 | 93 | 93 | 0.09 | 0.04 | 2.00 |
| 6 a. m | 26.12 | 26.11 | 61.3 | 62.4 | 94 | 93 | 0.04 | 0.04 | 1.35 |
| 7 a. m | 26.13 | 26.12 | 62.1 | 62.8 | 90 | 84 | 0.00 | 0.02 | ..... |
| 8 a. m | 26.14 | 26.13 | 66.0 | 66.9 | 79 | 84 | 0.00 | 0.02 | ..... |
| 9 a. m | 26.15 | 26.14 | 71.1 | 70.3 | 69 | 77 | ..... | 0.03 | ..... |
| 10 a. m | 26.15 | 26.15 | 73.8 | 73.7 | 68 | 70 | ..... | 0.06 | ..... |
| 11 a. m | 26.15 | 26.14 | 76.8 | 75.7 | 60 | 62 | ..... | 0.06 | ..... |
| Noon | 26.14 | 26.13 | 78.8 | 82.6 | 58 | 67 | ..... | 0.15 | ..... |
| 1 p. m | 26.12 | 26.12 | 77.7 | 75.9 | 65 | 68 | 0.11 | 0.36 | 0.75 |
| 2 p. m | 26.11 | 26.10 | 77.6 | 76.0 | 64 | 71 | 0.39 | 0.96 | 2.75 |
| 3 p. m | 26.09 | 26.09 | 74.8 | 73.8 | 73 | 70 | 1.25 | 1.19 | 5.00 |
| 4 p. m | 26.09 | 26.08 | 77.6 | 71.4 | 78 | 81 | 1.08 | 1.96 | 6.79 |
| 5 p. m | 26.09 | 26.09 | 69.8 | 69.6 | 85 | 85 | 3.26 | 1.57 | 9.55 |
| 6 p. m | 26.11 | 26.10 | 68.2 | 68.4 | 88 | 88 | 4.23 | 1.82 | 13.73 |
| 7 p. m | 26.12 | 26.11 | 66.7 | 67.1 | 91 | 90 | 0.91 | 1.02 | 11.09 |
| 8 p. m | 26.13 | 26.13 | 66.0 | 66.4 | 92 | 92 | 0.78 | 0.77 | 10.50 |
| 9 p. m | 26.15 | 26.14 | 65.7 | 65.8 | 91 | 92 | 0.90 | 0.43 | 8.15 |
| 10 p. m | 26.16 | 26.15 | 65.3 | 65.3 | 92 | 93 | 0.41 | 0.23 | 7.86 |
| 11 p. m | 26.16 | 26.15 | 64.8 | 64.9 | 93 | 93 | 0.11 | 0.18 | 4.67 |
| Midnight | 26.16 | 26.15 | 64.4 | 64.6 | 93 | 93 | 0.10 | 0.09 | 3.42 |
| Mean | 26.13 | 26.12 | 68.5 | 68.2 | 82 | 85 | ..... | ..... | ..... |
| Minimum | 26.05 | 26.01 | 58.3 | 55.8 | 36 | ..... | ..... | ..... | ..... |
| Maximum | 26.21 | 26.22 | 86.0 | 85.1 | 100 | ..... | ..... | ..... | ..... |
| Total | ..... | ..... | ..... | ..... | ..... | ..... | 13.98 | 11.26 | 94.28 |

REMARKS.—At San José the barometer is 3,835 feet above sea level. Readings are corrected for gravity, temperature, and instrumental error. The hourly readings for pressure, and wet and dry bulb thermometers, are obtained by means of Richard registering instruments, checked by direct observations every three hours from 7 a. m. to 10 p. m. The thermometers are 5 feet above ground and are corrected for instrumental errors. The total hourly rainfall is as given by Hottinger's self-register, checked once a day. Under maximum, the greatest hourly rainfall for the month is given. The standard rain gage is 5 feet above ground. Since January 1, 1902, observations at San José have been made on seventy-fifth meridian time, which is 0 hours, 36 minutes, 13.3 seconds *in advance* of San José local time. The normals for pressure, temperature, and relative humidity have been adjusted to this time; the normal for rainfall in Table 1 and the sunshine observations and normal in Table 2 refer to local time. At Port Limon the hours of direct observation are 8 a. m., 2 and 8 p. m., San José local time; the barometer is 14 feet above sea level. The means for temperature and relative humidity in Table 4 are obtained from two-hourly readings given by a Richard self-registering thermometer.



TABLE 2.—*San José, June, 1904.*

| Time. | Sunshine. | | Cloudiness. | | Temperature of the soil at depth of— | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Observed, 1904. | Normal, 1889-1903. | Observed, 1904. | Normal, 1889-1903. | 6 inches. | 12 inches. | 24 inches. | 48 inches. | 120 inches. |
| | *Hours.* | *Hours.* | % | % | ° *F.* | ° *F.* | ° *F.* | ° *F.* | ° *F.* |
| 7 a. m | 10.41 | 9.76 | 50 | 60 | 70.2 | 71.1 | 71.8 | 71.4 | 70.7 |
| 8 a. m | 19.48 | 17.55 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 9 a. m | 22.56 | 20.05 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 10 a. m | 22.49 | 20.14 | 70 | 67 | 70.3 | 70.7 | 70.3 | 71.2 | ..... |
| 11 a. m | 19.52 | 18.36 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Noon | 16.40 | 14.14 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1 p. m | 12.48 | 11.14 | 78 | 84 | 71.2 | 71.1 | 71.6 | 72.5 | ..... |
| 2 p. m | 8.69 | 10.39 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 3 p. m | 8.10 | 6.89 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 4 p. m | 6.22 | 4.22 | 97 | 94 | 71.6 | 71.4 | 71.8 | 71.2 | ..... |
| 5 p. m | 2.50 | 1.70 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 6 p. m | 0.84 | 0.56 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 7 p. m | ..... | ..... | 88 | 92 | 71.4 | 71.4 | 70.5 | 71.2 | ..... |
| 8 p. m | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 9 p. m | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 10 p. m | ..... | ..... | 84 | 81 | 71.2 | 71.4 | 71.8 | 71.2 | ..... |
| 11 p. m | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Midnight | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Mean | ..... | ..... | 71 | 80 | 71.1 | 71.2 | 71.8 | 71.2 | 70.7 |
| Total | 149.68 | 135.04 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

TABLE 3.—*Rainfall at stations in Costa Rica, June, 1904.*

| Stations. | Height above sea level. | Observed, 1904. | | Averages. | | |
|---|---|---|---|---|---|---|
| | | Amount. | Number of days. | Number of years. | Amount. | Number of days. |
| | *Feet.* | *Inches.* | | | *Inches.* | |
| Sipurio (Talamanca) | 197 | 8.74 | 15 | 4 | 8.94 | 19 |
| Boca Banano | 10 | 5.63 | 19 | 8 | 5.98 | 15 |
| Port Limon | 10 | ..... | ..... | 10 | 5.67 | 12 |
| Swamp Mouth | 10 | .71 | 15 | 6 | 5.08 | 10 |
| Zent | 66 | 7.36 | 17 | 3 | 3.70 | 16 |
| Siquirres | 197 | 1.02 | 10 | 6 | 9.33 | 16 |
| Dos Novillos | 400 | ..... | ..... | ..... | ..... | ..... |
| Guapiles | 984 | 9.45 | 16 | 4 | 10.95 | 16 |
| Cariblanco (Sarapiqui) | 2,740 | ..... | ..... | 6 | 20.79 | 27 |
| San Carlos | 528 | 19.33 | 24 | 6 | 13.11 | 21 |
| Las Lomas | 873 | 13.23 | 17 | 4 | 7.60 | 12 |
| Peralta | 1,089 | 1.18 | 22 | 6 | 13.11 | 20 |
| Turrialba | 2,034 | ..... | ..... | 9 | 10.39 | 17 |
| Juan Viñas | 3,412 | 1.73 | 23 | 8 | 7.48 | 17 |
| Santiago | 3,609 | 10.75 | 20 | 3 | 8.31 | 19 |
| Paraiso | 4,383 | 9.92 | 20 | 3 | 19.45 | 18 |
| Cachi | 3,346 | ..... | ..... | 3 | 10.20 | 21 |
| Las Concavas | 4,386 | 10.51 | 28 | 3 | 10.47 | 24 |
| Cartago | 4,761 | 6.50 | 11 | 3 | 12.40 | 24 |
| Tres Rios | 4,265 | 11.61 | 22 | 15 | 11.14 | 18 |
| San Francisco Guadalupe | 3,894 | 13.78 | 23 | 8 | 13.39 | 22 |
| San José | 3,806 | 13.98 | 22 | 15 | 11.26 | 23 |
| La Verbena | 3,740 | 13.35 | 23 | 8 | 12.48 | 25 |
| Nuestro Amo | 2,595 | 7.52 | 18 | 8 | 10.20 | 17 |
| Alajuela | 3,117 | ..... | ..... | 4 | 11.97 | 18 |
| San Isidro Alajuela | 4,416 | 11.77 | 20 | 3 | 16.61 | 25 |
| Las Cañas | 2,559 | ..... | ..... | ..... | ..... | ..... |
| Puntarenas | ..... | 5.47 | 18 | ..... | ..... | ..... |

*Notes on earthquakes.*—June 9, 9$^h$ 10$^m$ a. m., slight shock NNE.-SSW., intensity IV, duration 3 seconds. June 12, 1$^h$ a. m., very light shock NW.—SE., intensity I, duration 2 seconds; 5$^h$ 20$^m$ p. m., very brief shock N.-S., intensity II, duration 2 seconds.