

this may be done in an orderly fashion I shall group these typical climates in the following order:

- Driest.
- Dampest.
- Hottest days.
- Hottest nights.
- Coollest days.
- Coollest nights.
- Most sunshiny.
- Most showery.
- Variable day temperatures.
- Variable night temperatures.

TABLE 2.—Typical American summer climates described in Alciatore's terminology.

Modena, Utah...	Fair.....	86 per cent warm days.	Very cool nights....	Very dry.
Atlantic City, N. J.	Showery...	32 per cent cool days.	Cool nights.....	Very damp.
Phoenix, Ariz...	Fair.....	87 per cent hot days.	Hot nights.....	Very dry.
Galveston, Tex...	Showery...	29 per cent warm days.	Hot nights.....	Very damp.
San Francisco Cal.	Fair.....	97 per cent very cool days.	Very cool nights....	Very damp.
Reno, Nev.....	Fair.....	91 per cent cool days.	Very cool nights....	Very dry.
Fresno, Cal.....	Fair.....	99 per cent hot days.	Cool nights.....	Very dry.
New Orleans, La.	Showery...	48 per cent warm days.	Hot nights.....	Very damp.
Chicago, Ill.....	Showery...	32 per cent alternately warm and cool days.	Cool nights.....	Damp.
Red Bluff, Cal...	Fair.....	95 per cent warm days.	Alternately warm and cool nights.	Very dry.

That the reader may judge for himself as to the merits or demerits of the method, I give in Table 3 the weather, temperature, and humidity data which governed me in classifying the climates of the 10 cities named in Table 2.

TABLE 3.—Data underlying the classification of Table 2.

Character of summer.	Temperature, summer means.		Humidity, summer means.	
	Maximum.	Minimum.	A. M.	P. M.
	° F.	° F.	Per ct.	Per ct.
Modena, Utah.....	86	52	42	21
Atlantic City, N. J.....	76	64	84	87
Phoenix, Ariz.....	102	74	45	19
Galveston, Tex.....	88	78	82	75
San Francisco, Cal.....	65	53	91	76
Reno, Nev.....	83	50	62	25
Fresno, Cal.....	96	62	54	16
New Orleans, La.....	88	75	82	73
Chicago, Ill.....	77	63	74	69
Red Bluff, Cal.....	93	64	52	21
Shreveport, La.....	92	72	42	21

Table 3 presents many interesting features of our summer climates. For instance, on first thought the average reader would probably put Shreveport and Galveston in the same class. Note, however, that while the days are warmer in Shreveport the nights are cooler. The delightful coolness of San Francisco's days and nights are brought out in strong relief, but so is its excessive humidity. While Phoenix and Fresno are practically of a kind as to hot days, yet Fresno's nights are far more pleasant. The New Yorker (going outside the table) who spends his summers in Atlantic City may look for cooler afternoons, but the nights will not seem appreciably cooler, as New York has a mean summer minimum of 65°. The summer in Asheville, N. C., is cool (mean maximum, 82°; minimum, 60°) because it is showery (40 per cent); and, by the way, its dampness is almost as pronounced as that of San Francisco, i. e.,

83 per cent. The heat of the day is practically the same in New Orleans and Galveston, but the nights are somewhat cooler in New Orleans. Reno and Denver differ but little as to daytime temperatures, yet Reno's nights are appreciably cooler. It is as warm, as a rule, in St. Louis during the daytime at it is in Modena, but their nights are not at all in the same class, Modena's being something like 17° cooler. Portland, Oreg., and Chicago, though in the same division in regard to maximum temperatures, differ materially at night; Chicago is the warmer place by nearly 10°.

The writer hopes, in conclusion, that this paper may elicit a free and vigorous expression of opinion from climatologists and laymen as to the practicability and adequacy of this method for classifying American summers.

BEACH FOG AND FRACTO-CUMULUS.

Mr. F. D. Young, assistant observer at Portland, Oreg., sends us the following notes of a phenomenon which is not unusual but is not often described:

At Garibaldi Beach, near Tillamook, Oreg., the shore is very straight for a distance of 8 or 10 miles and along this whole stretch its inclination is very slight, so that the area of sand uncovered by the receding tide is great.

On August 15, 1915, a very steady wind was blowing from the north, directly along the beach. There were no clouds in the sky, and while the sun was shining brightly the day was agreeably cool. As the tide receded, it was noticed on looking up the beach that there was a bluish white haze above the wet sand that very nearly obscured objects a mile away. Away from the beach, on the ocean and on the land, the air was still very clear. This haze had the appearance of smoke, and the writer walked up the beach expecting to find the driftwood burning. After a mile walk up the beach, however, it was realized that it was not smoke but light fog. On looking closely the vapor could be distinctly seen rising from the wet beach.

About 11 a. m., when the tide had receded some distance, the haze disappeared and a long row of fracto-cumulus clouds appeared in a narrow strip directly above the beach, stretching out of sight in either direction. They were at a very low altitude, probably about 300 or 400 feet. Except for a few cirro-cumulus clouds on the western horizon, the remainder of the sky was clear and the air was without a suggestion of haze in any direction.

NOTES AT HONOLULU, HAWAII, DURING SOLAR ECLIPSE OF AUGUST 10, 1915.

By WILLIAM W. WYATT, Assistant.

[Dated: Weather Bureau, Honolulu, Hawaii, Aug. 24, 1915.]

The annular eclipse of the sun on August 10, began at 10:36 a. m. and ended at 1:53 p. m., 157° 30' Meridian Time, as given by the Observatory of the College of Hawaii.

Of the phenomena attending the eclipse the most interesting was the cloud formation, especially the upper clouds, which are seen here only occasionally. At 10 a. m. the only clouds visible were a few of the constantly present cumulus hanging over Mount Tantalus.

The air was very moist and the reduction in temperature resulting from the cutting off of the sunlight was sufficient to cause the formation of the upper clouds. Cirri began to form at 12:05 p. m. and were very thin

and gauzy. While one watched one could see them grow thicker, and at 12:15 p. m. they had changed to cirro-strati. The process of thickening continued as well as the appearance of descending. At 12:25 p. m. they had changed to alto-stratus. The upper clouds became noticeably less at 12:45 p. m. and had entirely disappeared a few minutes before the end of the eclipse. Their movement during the entire observation was from the west and noticeably rapid.

The lower clouds were cumulus, moving rapidly from the east, with the surface wind. They could be seen rapidly whirling when they reached a point over the sea about half a mile west of the station. They seemed to be torn to pieces by the whirling and quickly disappeared.

An arc of about 90° of a solar halo was observed at 12:21 p. m., with colors well defined. It lasted but a short while, disappearing at 12:24 p. m.

The sun at the maximum obscuration appeared to be about two-thirds covered. The moon, shutting off the sunlight, began at the lower right-hand side and ended at the upper left. The electric sunshine recorder gave a record of 20 minutes between 11 and 12 o'clock, the last of which was at 11:24 a. m. It began to record again at 1:27, which was 26 minutes before the end of the eclipse. Although the instrument failed to make a record, the crescent of the sun was too bright almost throughout the duration of the eclipse to allow one to observe it with the naked eye. Little groups of people at street corners, on housetops, and elsewhere were interested observers,

using artificial eye aids for the purpose. The eclipse cast fantastic shadows on the sidewalks and streets, foliage and limbs of trees being seen as if in dark relief on the pavement.

At the regular 8 a. m. observation (local time) conditions were not unusual: Temperature, 79°F.; barometer at sea level, 30.01 inches; wind, east, 12 miles; and relative humidity, 66 per cent. Light rain was falling from the cumulus clouds which covered nine-tenths of the sky. At 8:40 a. m. the rain stopped and the sky began to clear slowly.

The wind movement for the 24 hours preceding 12 noon on the day of the eclipse was 362 miles, or 15.1 miles an hour; the movement for the succeeding 24 hours was 237 miles, or 9.9 miles an hour.

The barometer did not show any marked disturbance during the 24 hours of August 10, being between 29.95 and 30 inches until 9 p. m., when it began to rise and reached 30.03 inches at 11 p. m., after which it began to fall slightly.

The thermograph was much more active. Instead of making its usual high record during the middle of the day it rose gradually until 11 a. m., when it registered 82°F., then began to drop. It reached its lowest point at 12:15 p. m., recording 79.5°F., after which it rose slowly until a few minutes after 2 p. m., when it recorded 83.6°F. The shutting off of the sunlight had the same effect on the thermograph as the sudden showers to which this place is subject.