from the lake a depth of 0.00717 feet per day, equal to 30.88 inches per year.

As a rule the entire winter precipitation, generally of snow, is retained on the land and lake surface until about April 1, when all that remains after evaporation is carried very quickly by the spring thaw into the lake.

Further experiments and measurements will be made by means of a weir cut in the dam lately erected by the county at the outlet, and the daily flow determined more accurately, for the purpose of verifying or correcting the estimates of flow herein given. All of which results will be presented to the public in due course of time.

NOTES BY THE EDITOR.

CHARLES S. GORGAS.

Mr. Charles S. Gorgas, observer, Weather Bureau, died at Norfolk, Va., 1:30 a. m. January 21, 1899; age 42 years. His death is announced with regret and his connection with the Bureau will be pleasantly remembered by those with whom he was associated. Mr. Gorgas was born in New York City and was educated in the public schools of that city and in the Spencerian Business College at Washington, D. C. He entered the Government meteorological service November 16, 1882, and performed duty at the following-named stations: Cape Henry, Va., Atlanta, Ga., and Norfolk, Va., as assistant; Fort Robinson, Nebr., Fort Laramie, Wyo., Valentine, Nebr., and Savannah, Ga., as official in charge; and at Washington, D. C., as clerk.—*H. E. Williams.*

METEOROLOGICAL RECORDS IN IOWA.

Mr. J. P. Walton publishes in the Saturday Mail, Muscatine, Iowa, a paper read by him before the Muscatine Academy of Science of February 13, 1899, relative to the early work of Hon. T. S. Parvin. Mr. Parvin settled in Cedar Rapids, Iowa, July 4, 1838, but soon removed to Bloomington, now Muscatine. He apparently began keeping a weather record on December 1, 1838, in diaries and blanks of his own devising; beginning with 1847 he used the Smithsonian blanks. His barometric record began in 1850. In order to get his barometer out to this distant place in 1850, a friend brought it to him from Washington carefully strapped upon his back. When Mr. Parvin moved from Muscatine to Iowa City in October, 1860, he turned over the instruments and records to Rev. John Ufford, and in April, 1863, the latter turned them over to Mr. Josiah P. Walton who now has the complete collection since January 1, 1839.

It is very rare that an observer has the privilege of consulting such a long record at one place, and we hope that Mr. Walton will favor the readers of the MONTHLY WEATHER REVIEW with many studies into the climatic changes that have taken place in Iowa. His paper read before the Muscatine Academy gives us a foretaste of what may be expected. For instance, he finds that in fifty years there have been ten Januaries that have had less than one inch of rainfall. They may be called dry Januaries, and of these ten months he says:

> The Februaries that followed were six wet and four dry; the Marches were three wet and four dry, the other three being average; the Aprils were six wet and two dry; the Mays were eight wet and one dry; the Junes were five wet and one dry; the Julys, six wet and one dry, so that on the whole the ten dry Januaries were followed by an increase of precipitation in every month. Of these ten dry Januaries, three were preceded by dry Decembers and two by wet Decembers, the remaining five being average.

Applying this result to the current year, he says:

> December, 1898, and January, 1899, were dry, but unless the next six months are an exception to former years, we can look for a better season for grass and for oats than for corn. Oats and grass prosper better with April, May, and June wet and July dry for harvesting. Corn requires but little rain until July, but will stand any amount after shooting.

HISTORY OF WEATHER TELEGRAPHY.

Mr. William Foster, jr., of Warwick, R. I., sends to the Editor some interesting notes about the early agitation of the question of a Government weather bureau. He states that—

> In 1837–39 I published the Windham County Gazette, at Brooklyn, Conn., and occasionally had a paragraph on the subject of the weather, advocating a systematic series of observations to develop the law of storms. I removed to Providence in 1856, where I also had something to say on this subject in the press, insisting that the Government should extend its weather work as widely as possible. Subsequently I reported auroras, meteors, etc., to Prof. Joseph Henry. I recollect that in one of my early paragraphs I instanced a severe damaging West Indian storm, which had traveled up the coast, as an example to illustrate the beneficent results that would have been attained if its progress had been noted and transmitted northward.

THE TUGRIN FOG DISPELLER.

This consists of an outlook pipe, 8 feet long and 3 inches inside diameter, with a wide flange at the mouth, placed so as to be convenient to the navigating officer. A tube enters the pipe from below and a blower sends a powerful stream of warm air through the tube and the pipe straight ahead, blowing a hole right through the fog, which is rolled back in every direction; the moisture is said to condense and fall in raindrops, and the navigating officer is enabled to see through the densest fog for several hundred feet.

If this blower operates satisfactorily in a horizontal direction, it ought also to do so in a vertical, and the region around the blower should, therefore, be well wetted by the raindrops that are thus formed out of the fog. It may be an expensive operation, but we commend it to attention on the coast of California, where it is desired to utilize the fog.

THE INTERNATIONAL DATE.

With the increase in rapid transit and ocean cables across the Pacific, it becomes more and more desirable to adopt a system of dates and hours that will be free from the uncertainties and confusions of the present.

The committee on standard time, which made a report to the American Metrological Society in 1875, out of which grew the first step in the reformation of time reckoning, concluded its report by expressing a belief that the only permanent, satisfactory solution of the question would consist in using Greenwich time and Greenwich dates throughout the whole globe. The Greenwich day begins, according to our civil reckoning at Greenwich, midnight, which is simultaneous with local noon on the one hundred and eightieth meridian, near the middle of the Pacific Ocean.

The details of the times at which various events have occurred in Europe, Asia, and America, from day to day, as published in our daily telegraphic columns, keep one continually consulting the degrees of longitude and perpetually figuring out how long it is since they happened.

All this is rectified the moment we begin to use one single

standard of time. As soon as the cable companies agree upon such a standard there will be a fair prospect of its adoption by the newspapers and, eventually, by all civilized communities. Meanwhile, the elaborate table published in the London Geographical Magazine for February, 1899, will be very useful to those who are studying the cable reports from all parts of the world published in our daily papers.

SENSIBLE TEMPERATURES.

In the midst of the hot weather in the summer of 1898, an editorial in the New York Times suggested that the Weather Bureau modify the terms "warmer" and "cooler," as employed in forecasting the temperature.

Hitherto these terms have been supposed to refer exclusively to the temperature of the air, as indicated by the dry bulb thermometer. The suggestion is made that we combine the figures indicating temperature, humidity, and velocity of the winds into a single figure that would express just what people mean when they say and feel that the day is hot or cold. The new suggested figure would vary directly with the temperature and humidity, but inversely as the velocity of the wind.

The problem is much more difficult than is here suggested. We have frequently explained that the sensation of temperature differs with every individual, and will vary with the same individual according to his physical and mental condition. We think it must be left to each individual to predict his own sensations when once the Weather Bureau has predicted the temperature, moisture, and pressure of air and the velocity of the wind.

ORIGIN OF THE WORD "BLIZZARD."

On page 562 of the December REVIEW, we have given a reference to the use of the word "blizzard" as quoted from the Hutchinson County Herald, but it appears that the original of this goes further back, viz, to the "Dakota Republican," published at Vermilion during the winter of 1867–68.

FORESTS AND SNOWFALL.

In the January report of the Wyoming section, Mr. W. S. Palmer states that the snowfall for the month was unusually heavy, and a corresponding amount of moisture is thus stored for irrigation during the next summer. The average snowfall for the State was 15.2 inches. At the end of the month the snow was from 31 to 48 inches deep on the summits of a number of hills and peaks. On the snowy range the depth was 21 inches at an elevation of 8,700 feet, 16 inches at 9,000 feet, 24 inches at 10,000, and 43 inches at 11,000 feet. Mr. A. L. Foster, reporting on the snowy range, says:

The second growth of timber continues to hold from 6 to 10 inches more snow than the larger and more thickly wooded districts. Water in all streams is above the normal.

We have here an allusion to a very important service rendered by the forest. The latter retards the flow of the wind among its branches and foliage, and affords abundant opportunity for the driven snow to settle and rest upon the ground. It does not increase the quantity of moisture, but it preserves the fallen snow and rain to a remarkable extent.

RECENT EARTHQUAKES.

Reports from Mexico describe the earthquake of Monday evening, January 24, as the severest ever known in the City of Mexico. The first oscillation began at 5:09 p. m., local time. It was from northeast to southwest and lasted one minute and fifty-six seconds. Three minutes later came a second shock, which lasted five seconds, oscillating northwest and southeast. The earthquake was felt over the entire Republic of Mexico. At Colima it lasted one minute and twenty seconds; at Vera Cruz it lasted ten seconds. But few reports of this earthquake have been received from the United States, although it must have been feebly felt at many stations.

At San Bernardino, Cal., a shock was felt at 4:45 p. m., January 25. The newspapers of that city state that the shock was of a little greater severity than usual and that the barometer dropped from 30.12 to 29.86, "an unusual occurrence during a norther, probably due to an earthquake." Of course the latter suggestion is wholly inadmissible, and popular ignorance of this subject should not be increased by disseminating the idea that the atmospheric pressure can be affected by an earthquake. On the other hand, there is some basis for the idea that in rare cases a large change in the atmospheric pressure may give occasion for an earthquake, a result that is barely conceivable, but has never yet been demonstrated.

The Marvin seismograph at Washington recorded no earthquake during January. Professor Morley reports that his seismograph at Cleveland, Ohio, showed a considerable disturbance some time during the month. The direction of the vibrations was 10° east of north and 10° west of south, and there were about half a dozen vibrations. Having been laid up with illness, Professor Morley was unable to examine his apparatus at the proper time, and therefore could not state the date of the occurrence. The fact that no other station in the United States reported the Mexican earthquake of January 24 would indicate that the disturbance at Cleveland must have occurred on some other date.

DESCRIPTION OF TABLES AND CHARTS.

By ALFRED J. HENRY, Chief of Division of Records and Meteorological Data.

Table I gives, for about 130 Weather Bureau stations making two observations daily and for about 20 others making only one observation, the data ordinarily needed for climatological studies, viz, the monthly mean pressure, the monthly means and extremes of temperature, the average conditions as to moisture, cloudiness, movement of the wind, and the departures from normals in the case of pressure, temperature, and precipitation, the total depth of snowfall, and the mean wet-bulb temperatures. The altitudes of the instruments above ground are also given.

Table II gives, for about 2,700 stations occupied by voluntary observers, the highest maximum and the lowest minimum temperatures, the mean temperature deduced from the average of all the daily maxima and minima, or other readings, as indicated by the numeral following the name of the station; the total monthly precipitation, and the total depth in inches of any snow that may have fallen. When the spaces in the snow column are left blank it indicates that no snow has fallen, but when it is possible that there may have been snow of which no record has been made, that fact is indicated by leaders, thus (. . . .).

Table III gives, for 26 stations selected out of 113 that main-