On the immediate eastern slope of the ridge the rainfall and prevailing winds were as follows:

	Rainfall.	Wind.		Rainfall.	Wind.
	Ins			*Ins.*	
Saxon, Stokes Co	3.88	ne.	Linville, Mitchell Co.*	7.57	se.
Mountairy, Surry Co	6.02	.....	Marion, McDowell Co	6.78	e.
Ashers, Wilkes Co	7.01	se.	Morgantown, Burke Co	4.77	.....
Paterson, Caldwell Co	8.00	e.	Skyuka, Polk Co	5.61	se.
Lenoir, Caldwell Co	6.00	se.	Flatrock, Henderson Co.†	5.75	.....

*On the crest of the Blue Ridge. †Near the crest of the Blue Ridge.

PENNSYLVANIA.

No special mention is made of the thunderstorm that passed from Pottsville to Trenton on the 7th, according to the New Jersey section report. It is very desirable that the severe thunderstorms that proverbially trouble New Jersey and the city of New York should be traced to their origin in the mountains of Pennsylvania. Probably this could be effected by a little special cooperation between the three section directors. It would seem as though New York City and New Jersey should, from this point of view, be studied in combination with eastern Pennsylvania as a special field for the development of thunderstorms. The prediction of such storms, even for a few hours in advance, could be made of the greatest value to a large number of people in Philadelphia and New York.

TENNESSEE.

The advancing mass of cold air that gave the Atlantic States their rains on the 7th and 8th is chronicled as a norther at Bolivar, Tenn., and in fact low temperatures and frosts prevailed extensively on the morning of the 8th. This reminds us that in 1871, in October and November, as the season approached for northers in the Gulf States, and we were about to experience our first efforts at their prediction, the Editor had occasion to announce as the result of considerable study of the descriptions of northers of Texas and the Gulf, that they must be considered as the advancing front of a shallow layer of cold air flowing from the upper Missouri valley southward to the Gulf. Therefore, they constitute the southern borders of the areas of high pressure and cold, dry, clear air. The first description and predictions of a norther in the Gulf of Mexico, November 28, 1871, was made in accordance with this view.

WISCONSIN.

The observer at Manitowoc records a zodiacal light appearing in the west between 8 and 9 p. m. on the 12th, at an altitude of 15°. Could this have been an auroral streamer, many of which were observed this month? In general the aurora is distinguishable from the zodiacal light by its oscillations in brightness and location and by the manner in which the light is distributed over the beam. Auroral streamers generally have quite sharply-defined edges and uniform brightness, whereas the zodiacal light has ill-defined edges and is brightest along its central axis. Regular observers of zodiacal light are much wanted by the astronomers, and those who contemplate such work should study the writings of Searle and others.

WYOMING.

The September report from this section contains the first official publication relative to the convention of Weather Bureau officials held at Omaha on the 13th and 14th of October. Section Director W. Palmer was present, and we believe that all will echo his statement—

That a very enthusiastic and profitable meeting was held. The Chief of the Weather Bureau was present and presided at the convention and the banquet.

LIGHTNING ON WIRE FENCES.

A correspondent of the Iowa Weather and Crop Service inquires of Mr. Sage how to construct wire fences so as to protect stock from the deadly effects of lightning that is frequently conducted many yards along the fences. Mr. Sage repllies in the Iowa Monthly Review for October, 1898, that so-called ground wires should be built into the wire fences.

A ground wire to be effective should have contact with every wire on the fence, and should enter the ground far enough to reach moist earth, or at least two feet below the bottom of the fence post; the deeper the better. In the construction of a fence the wires may be most easily sunken to the required depth in the bottoms of the post holes, before the posts are set, by the aid of a slender bar or pointed rod of steel. The contact with the fence wires may be made on the posts, and it would be well to have the ground wires long enough to allow the points to be elevated a few inches above the posts, serving as lightning rods. A good ground wire attached in this manner to every fourth post, where the posts are set a rod apart, ought to afford a large measure of protection. The cost of wire is trifling, and if the ground wires were placed two rods apart the expense of the labor and material would not be burdensome.

THE UTILIZATION OF FOG.

Mr. Herbert Earlscliffe of Santa Barbara, Cal., has communicated to the Weather Bureau, through the Chamber of Commerce of Los Angeles, a suggeston relative to fog that should call forth all the inventive genius of America. Mr. Earlscliffe says:

In California there are vast areas of valuable land where the water supply is insufficient. Nature has endeavored to correct this by sending in heavy fogs laden with moisture, and it only remains for the ingenuity of man to utilize this. These fogs generally come in from the ocean at night during the dry summer months, when most needed, but are dissipated early in the morning by the sun. Here is ample moisture brought to our very doors if we could but discover some simple and practical method of condensing or precipitating it on a large scale.

It certainly is tantalizing to think of this immense quantity of moisture present and visible but unavailable. Neither science nor art, at present, can suggest any feasible method of causing this fog to descend in refreshing drops of rain. On the other hand, the green vegetation at the summits of many mountains has often been observed to be due essentially to cloud or fog and not to rain; it may, therefore, be hoped that along the coast of California some device will soon be introduced that shall catch the fog particles as they float along and force them to trickle down in gentle streams of water so as to moisten the earth. We do not propose to condense or precipitate the atmospheric moisture in the ordinary sense of those words, but simply to catch it as the leaves of the trees do. We recall the so-called drip from every rock and twig on the summit of Table Mountain at Cape Town, and especially on the summit of Green Mountain in the Island of Ascension and the dampness of the rocks on Pikes Peak, and we can not doubt but that in many spots throughout the globe, vegetation is kept alive by the small amount of moisture that is caught on the leaves, and dripping thence to the ground is soaked up by the roots of the plant. In fact, there are several plants whose leaves and branches are so arranged as to facilitate drip and the collection of moisture by this process. What is needed by the agriculturist on the California coast is some simple mechanical arrangement by which the quantity of fog particles shall be intercepted as they flow past any given plant, and shall be forced to drip or glide downward into the ground at the root of the plant. Any fan-shaped arrangement of sticks or slats that increases the area exposed to the fog should apparently increase the quantity of moisture carried down to the roots. Mechanical devices, the explosion of dynamite, refrigerating apparatus and other analogous devices are likely to be too expensive in comparison with the return they make.

MONTHLY WEATHER REVIEW.

Editor: Prof. CLEVELAND ABBE.

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INTRODUCTION.

The MONTHLY WEATHER REVIEW for October, 1898, is based on about 2,940 reports from stations occupied by regular and voluntary observers, classified as follows: 147 from Weather Bureau stations; numerous special river stations; 32 from post surgeons, received through the Surgeon General, United States Army; 2,583 from voluntary observers; 96 received through the Southern Pacific Railway Company; 29 from Life-Saving stations, received through the Superintendent United States Life-Saving Service; 31 from Canadian stations; 20 from Mexican stations; 7 from Jamaica, W. I. International simultaneous observations are received from a few stations and used, together with trustworthy newspaper extracts and special reports.

Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; Mr. Curtis J. Lyons, Meteorologist to the Hawaiian Government Survey, Honolulu; Dr. Mariano Bárcena, Director of the Central Meteorological and Magnetic Observatory of Mexico; Mr. Maxwell Hall, Government Meteorologist, Kingston, Jamaica; Capt. S. I. Kimball, Superintendent of the United States Life-Saving Service; and Commander J. E. Craig, Hydrographer, United States Navy.

The REVIEW is prepared under the general editorial supervision of Prof. Cleveland Abbe.

Attention is called to the fact that the clocks and self-registers at regular Weather Bureau stations are all set to seventy-fifth meridian or eastern standard time, which is exactly five hours behind Greenwich time; as far as practicable, only this standard of time is used in the text of the REVIEW, since all Weather Bureau observations are required to be taken and recorded by it. The standards used by the public in the United States and Canada and by the voluntary observers are believed to generally conform to the modern international system of standard meridians, one hour apart, beginning with Greenwich. Records of miscellaneous phenomena that are reported occasionally in other standards of time by voluntary observers or newspaper correspondents are sometimes corrected to agree with the eastern standard; otherwise, the local meridian is mentioned.

FORECASTS AND WARNINGS.

By Prof. E. B. GARRIOTT, in charge of Forecast Division.

During the last two days of September, 1898, a storm developed in the vicinity of the island of Santo Domingo, and moved thence northwestward to the south Atlantic coast of the United States, where it raged with hurricane violence during October 2. A detailed account of this disturbance, and of the action of the Weather Bureau in issuing warnings of its approach is given in the description of the storm which follows, and its track is plotted on Chart II.

Conservative estimates place the damage caused by this storm in Georgia and Florida at $1,500,000. The value of vessels and cargoes detained by the Weather Bureau warnings of Saturday, October 1, was $380,000, and the crews numbered 56. These were sailing vessels and would doubtless have suffered the fate of those caught at sea. At Savannah the warnings prompted active measures for the protection of shipping and merchandise, and credit is given the warnings by representatives of business and marine interests, for a saving of many thousands of dollars. At Charleston vessels and cargoes valued at nearly $1,000,000, remained in port.

Two storms of unusual severity crossed the upper lakes, one on the 17th and 18th, and the other on the 25th and 26th; on the lower Lakes the severest storm of the month occurred on the 26th and 27th.

No wind storms of marked severity occurred on the Pacific coast during October, 1898.

THE WEST INDIAN HURRICANE OF SEPTEMBER 29-OCTOBER 2.

The Weather Bureau West Indian reports of September 28, 1898, indicated the formation of a cyclonic storm in the neighborhood of Puerto Rico, and during September 29 the circulation of the winds, the character and movement of the clouds, and the action of the barometer showed that the central area of the disturbance had moved to a position off the northern coast of Santo Domingo. During September 30 the center moved north of west over the old Bahamas Channel and began to recurve northward. Conforming to one of the laws of cyclonic disturbances the storm-center deepened during the recurve, and by the morning of October 1 its influence had extended to the Florida coast. Advisory messages were sent to south Atlantic ports at 9:50 a. m., giving the position of the storm and stating that high north to northeast winds would prevail along those coasts. Special noon and 3 p. m. observations showed that the center of disturbance was approaching our southeastern coasts. Storm northeast signals were ordered from Key West to Norfolk, and the following warning was communicated to the Bureau of Navigation, Navy Department, Washington, the New York and Philadelphia Maritime Exchanges, and generally to Atlantic coast and east Gulf maritime interests:

Storm approaching the Florida coast near Jupiter. Dangerous shift-