THE AURORAL DISPLAY OF AUGUST 26

It may interest the readers of SCIENCE to know that the "remarkable auroral display" described by Professor Nutting in SCIENCE of October 6, was visible also in the eastern states. I watched it for many hours at my cottage on Chebeague Island, Maine; and others, who watched it there, declare that it lasted until well after midnight.

The display was of so unusual a character that I could not believe it to be the "northern lights." As Professor Nutting says, its greatest intensity and brilliancy was in the zenith, and to us the light seemed to radiate and pulsate from *east* to *west*. This fact led me to call the display the zodiacal light, which I had never seen, and about which I knew only the name. I should be glad to know if the phenomenon was, without question, an aurora borealis.

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I WAS much interested to read Professor Nutting's description of the remarkable auroral display of August 26. I observed the same phenomenon at Annisquam, Essex County, Mass., which Professor Nutting so well described. Auroras were of quite common occurrence this summer at Annisquam, I having noted them on the evenings of June 22, 29, 30, August 26, 27, 28, and September 2, 9 and 11, but the display of August 26 far surpassed any aurora I had ever seen. The Boston papers of August 27 made a note of the aurora and stated that the telegraph and telephone lines in eastern Massachusetts had been greatly disabled and in some cases put out of commission during the previous evening. It would be interesting to know if wireless telegraph operators noticed any unusual occurrence of "static" at that time.

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THE remarkable auroral display described by Professor Nutting in a recent number of SCIENCE was also observed on the same date, August 26, at Rochester, N. Y., from the Cobb's Hill reservoir. A member of my family called our attention to what appeared to be vivid flashes of sheet lightning. Close observation, however, showed that the apparent electrical display was really an exhibition of the great northern lights or aurora borealis. As described by Professor Nutting, the lights flickered, streamed in great sheets, danced in long shafts, and shimmered in vast expanses of rapidly changing light.

The light was strongest and most remarkable at the zenith where the play was the most intense. The quickly changing forms of the display followed each other with marvelous rapidity as noted by Professor Nutting. In Rochester the light resembled electricity, the colors of the northern Michigan display being absent or but feebly visible, owing probably to the greater distance south of the observing locality. The display was first seen about eight o'clock in the evening and was under observation until after ten o'clock. How much longer the display lasted I am unable to state. It would be of interest to know in what other places far removed from Michigan this auroral display was observed.

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C. C. NUTTING has accurately described the aurora borealis which spanned the northern heavens up to the zenith on the evening of August 26, 1916, at Lake Douglas in northern Michigan. Identically the same aurora was seen by me on the same evening between the hours of nine and ten, at Oak Bluffs, on the eastern shore of Martha's Vineyard, Mass., but somewhat dimmer, owing perhaps to my station on the seashore. The pulsations of light in the form of huge bands changing constantly in intensity and position, as well as the formation of the streamers which he has described, were marked features of the phenomenon.

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IN the current issue of SCIENCE, Professor Nutting describes an aurora seen by him on the evening of August 26, remarkable for the large expanse of the heavens which it occupied. It may be of interest to know that the same display was visible a thousand miles east of

where Professor Nutting saw it. I observed the same thing on that evening at Starr's Point, near Wolfville, Nova Scotia. The same great extent of the display was evident, but the brightness was not equal to that described by Professor Nutting. At intervals the display would vanish, to reappear shortly in as great an extent as before. The focus of the aurora seemed to be near the zenith as Professor Nutting describes it.

The aurora was noticed as soon as it was dark, which in that latitude and at that time was about eight P.M., and lasted for two hours at least; how much longer I am unable to say. The color was uniformly a pearly white; no trace of any other tint appeared.

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THE SCIENTIFIC APPOINTMENTS OF PRESIDENT WILSON

TO THE EDITOR OF SCIENCE: In the published discussions of the wisdom of the president's appointments in the so-called scientific bureaus of the government and especially in those regarding his recent choice of a superintendent for the Coast and Geodetic Survey I have seen no reference to one phase of the subject that seems to me to be, at the present time, of the utmost importance.

Great emphasis is now placed by the president and his cabinet on the necessity for "mobilizing" all of the resources of the country, both material and human, so that these resources shall be instantly and completely available for the defense of the country in case such defense shall be called for and extraordinary measures are being resorted to for that purpose.

Those familiar with the work and history of the service will be inclined to think that in the event of an attack by any great power possessed of a strong navy (we are in little danger from any other) the success of our defense will depend in large measure upon the efficiency of the small corps of men constituting the United States Coast and Geodetic Survey. These men have an intimate knowledge of our coast in all its vast extent, of all the avenues of approach, of obstacles that exist and where such may be easily created, and of the topography of a wide strip of land bordering on the sea, possessed by no other body, and in time of war involving naval attack and attempted landing of troops their knowledge will be invaluable. This fact was fully recognized during the civil war of half a century ago and almost from the beginning the regular operations of the survey were suspended that its officers might be detailed to various military operations on the coast. The superintendent himself personally undertook preparations for the defense of the city of Philadelphia.

Military and naval officers everywhere gave unstinted praise to the work of the officers of the Coast Survey, declaring in many instances that without their cooperation important military operations would have been impossible. Under the conditions of modern warfare, when fighting is directed by maps and charts, the enemy being often so far away as to be quite invisible, it is clear that such services as the Coast Survey can render will be immensely more important than they were during the civil war. Indeed it is no exaggeration to say that this small but unique group of highly trained experts under proper leadership should be worth more than half a dozen superdreadnaughts. One may be rash to compare their possible usefulness with that of the recently organized and mobilized aggregation of assorted geniuses from which the president and the country at large are expecting so much, but some knowledge of the work of the officers of the survey during the civil war and a study of the newly developed methods of warfare may justify or excuse such rashness. These facts alone, without considering others, some of which were presented by Dr. Evermann in a recent number of SCIENCE, seem sufficient to account for the surprise and disappointment that were almost universal among those having knowledge of the situation when the president selected as the head of this, the oldest and one of the most important of the scientific bureaus of the government, not one of a considerable number of men who by reason of their reputation and accomplishments are