

the tree type of woody plant in the temperate zone.

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#### THE AURORA OF MAY 14, 1921

TO THE EDITOR OF SCIENCE: A very fine display of northern lights was observed here on Saturday night May 14th to daylight Sunday morning. It was first observed at 8:30 P.M. and was most conspicuous in extremely bright patches here and there in the sky, lasting usually not over a minute, with long arcs crossing the northern horizon. It was slightly cloudy, especially overhead and toward the northeast, but bright patches of aurora could be seen through the clouds. The sky was clear in the west and here and there groups of fine lines were visible, having always a slant of 60 degrees from the horizontal, corresponding to the dip of the compass at Tucson.

The colors were a dull white changing to a greenish tint in the northerly glows, a brilliant pearly luster in the patches and an occasional strong red color over large indefinite areas.

The display appeared to become somewhat less intense at 10:30 but shortly afterward showed renewed activity especially in long lines extending over large parts of the sky, which was now nearly clear, and all pointing toward a vanishing point of perspective situated about 30 degrees south of the zenith and a little to the west of the meridian, which is the direction of our lines of magnetic force extending toward the south pole. This vanishing point was very beautiful and was observed by many people. By one o'clock the display had somewhat diminished, but a later view at 3:30 showed a perfectly clear sky and the ordinary arcs crossing the northerly horizon with occasional nearly vertical streamers extending upward.

This was observed in many other parts of Arizona and far exceeds the recollection of anything of the sort seen here in forty years. I have notes upon four previous occurrences. One was seen from Flagstaff, Arizona, in the winter of 1894 and 1895. One was reported to me on November 5, 1916, and faint displays

were seen here on October 9 and December 13, 1920. This was the first display of northern lights for most of the people of this part of the country.

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#### THE AURORA SEEN FROM SINALOA, MEXICO IN LATITUDE 27° N.

THE Northern Light display of May 14 was very plainly visible from the mesa here—only a few miles from the tropics. The Indians have been firing the forests to hasten the advent of the summer rains, and, when I first observed the glow along the sky-line formed by the Sierra Madre I thought they were indulging in their propitiation of the gods on a rather larger scale than usual. The glow began about eight o'clock and the rays were first visible about fifteen minutes later. They were white to pale yellow in color, ever changing in form, location, and brightness. Many of them appeared to reach an east-and-west great circle through the zenith, those low down in the eastern sky appearing longer. The apparent focus was several degrees east of north.

I had never before witnessed such a display and never expected that my first observation of the aurora would be from the semi-tropics.

J. GARY LINDLEY

#### QUOTATIONS

##### THE MOUNT EVEREST EXPEDITION

THE organization of the expedition is now complete, and all the members proceeding from England have left for India. The leader of the mountain party, Mr. Harold Raeburn, sailed from Birkenhead direct for Calcutta on March 18. Colonel Howard Bury, chief of the expedition, left Marseilles for Bombay on April 9, and Mr. G. H. Leigh Mallory, one of the young climbers, sailed from London direct for Calcutta on the preceding day. Mr. A. F. R. Wollaston, surgeon and naturalist, left Marseilles for Bombay on April 16, and by the same boat Mr. G. H. Bullock, who had been selected at the last moment to replace Mr. George Finch, who was unfortunately, owing to ill-health, unable to take part in the ex-

pedition this year. These gentlemen, with Dr. Kellas, who is already in India, complete the party of six from this country who will make the reconnaissance, and will, if conditions are favorable and the reconnaissance has clearly revealed the best route, make an attempt this year to reach a considerable height on the mountain. The survey operations will be entirely in the hands of the Survey of India, and we learn from the surveyor-general that Major Morshead and Captain Wheeler were under orders to leave Darjeeling about April 1 to carry forward a good triangulation on to the plateau of Tibet with a view to the ultimate determination of the deviations of gravity north of the Himalaya, the question of the first importance to Indian geodesy. At the request of the government of India an officer of the Indian Geological Survey will also accompany the expedition. The commander-in-chief in India, Lord Rawlinson, has responded very kindly to the request that he should assist the expedition by the loan of transport, and a letter has been received recently from the quartermaster-general detailing orders which have been issued for the selection of trained mules and their accompanying personnel. The transport train was to have assembled at Darjeeling on May 12, and the value of this assistance can hardly be overestimated.

At a recent party at Buckingham Palace the president was summoned both by the King and Queen to give them the latest news of the organization and plans of the expedition, and His Majesty has graciously shown his kind interest in the project by contributing the sum of £100 from the Privy Purse to the expedition's funds. The chief of the expedition, Colonel Howard Bury, was received before his departure by H.R.H. the Prince of Wales, Vice-Patron of the society, who, with the Duke of York, spent an hour examining the plans of the expedition, and expressed his keen interest and good wishes for its success; an expression that was followed almost immediately by a generous contribution of £50 to the funds of the expedition.

As a result of the appeals made by the presi-

dent of this society and the Alpine Club a sum has been collected which is approximately sufficient for the work of the first season, but leaves little reserve. It is, therefore, greatly to be desired that all fellows of the society who are jealous for the success of the first important enterprise undertaken since the war, should, if they have not already done so, send subscriptions according to their means to the funds of the expedition.—*The Geographical Journal*.

### SPECIAL ARTICLES

#### AN OUTLINE FOR VASCULAR PLANTS<sup>1</sup>

If an attempt is made to prepare a numbered list of the orders and families of flowering plants, there should first be some agreement on the sequence of the major groups. For example, should the monocots precede or follow the dicots? Should gymnosperms and ferns be included in the enumeration, as they are included in our manuals? Unless these points are agreed upon, the enumeration will be premature.

It will first be necessary to bring together the work of anatomists, morphologists and systematists. A list prepared in this way should command the respect of all botanical workers, and all might be expected to follow the list. If this synthetic view is taken, we find the ferns, gymnosperms and angiosperms forming coordinate groups. And this series stands in coordinate relation with the lycopods and horse-tails taken together. It remains for some authority on taxonomy to embody these conclusions in the system. With a view to bringing such a system under criticism, we offer below a tentative arrangement of the larger groups of plants. If some such system is adopted—as must ultimately be—we could best number the orders and families of each class separately. Thus ferns and gymnosperms would have separate numerals from those allotted to angiosperms. It is to be hoped also that the dicots will be given a permanent place at the beginning of the angiospermic series. The entire series of vascular plants would appear thus:

<sup>1</sup> Cf. *Plant World*, 22: 59–70. March, 1919.