Tornado Predictions

G.

Science, Vol. 4, No. 80 (Aug. 15, 1884), 126-127.

Stable URL:
http://links.jstor.org/sici?sici=0036-8075%2818840815%292%3A4%3A80%3C126%3ATP%3E2.0.CO%3B2-9

Science is currently published by American Association for the Advancement of Science.

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at http://www.jstor.org/about/terms.html. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at http://www.jstor.org/journals/aaas.html.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is an independent not-for-profit organization dedicated to creating and preserving a digital archive of scholarly journals. For more information regarding JSTOR, please contact support@jstor.org.

http://www.jstor.org/
Fri Aug 12 12:25:25 2005

extension of such foundations as the latter in this generous country, does there not lurk a possible danger, — a danger that their bestowal will fall into hands incapable of proper administration? If any one think this danger remote, let him reflect on the ill-judged selection of recipients for honorary degrees in many of our best universities and colleges. Let such foundations remain, as now, in the hands of those whose position has been gained solely by research, and the danger vanishes.

THE standard of light adopted by the Paris electrical conference last April is the amount of light emitted by a square centimetre of melted surface of platinum at the point of solidification. It was believed that advantage could thus be taken of a physical constant (namely, the melting-point of platinum) upon which could be based all our present changing and unsatisfactory photometric standards. The adoption of this standard has been much criticised, for it does not seem to lend itself easily to actual photometric tests. Werner Siemens proposes that a piece of platinum foil should be enclosed in a cavity provided with a conical opening 0.1 of a square centimetre; this piece of platinum to make part of an electrical circuit, the current in which can be so regulated that a comparison with any light can be made at the moment of fusion. The temperatures of solidification and fusion of platinum do not differ sensibly from each other, and Siemens believes that the error introduced by taking the temperature of fusion instead of that of solidification would be small. The use of an electrical current to produce fusion has certain advantages, for the time of fusion can evidently be deferred until the proper moment. Preliminary experiments have shown that the light emitted from an opening 0.1 of a square centimetre in section by Siemens's method is equivalent to nearly one and a half standard English candles.

Although the standard adopted by the Paris conference seems to be based upon the unalterable laws of matter, it does not seem as if it would ever be practically adopted. Some form of the modern incandescent electric light, it seems to us, would afford a much better prospect of a standard light. It is difficult to maintain the steadiness of such a light for photometric purposes; but this does not seem impossible to accomplish. It is evident, that, if we could maintain an electrical current constant through a platinum wire or carbon filament in a suitable medium, we should have the means of reproducing the same amount of heat, and therefore light, from the same area. Unfortunately, carbon changes in resistance at the point of incandescence; and the resistance of platinum is not invariable under repeated heating and cooling in a comparative vacuum. An exhaustive investigation of the peculiarities of platinum or of iridium, under the effect of incandescence produced by the electrical current, would seem to be desirable before the French standard is accepted as a finality.

LETTER TO THE EDITOR.

Tornado predictions.

IN an article on 'Tornado predictions,' published in the July number of the *American meteorological journal*, a table of verifications is given, in which the average of successful predictions for several months is from ninety-six to ninety-eight per cent.

An examination of the table shows that this remarkably high percentage of verification is largely made up, *not* of successful predictions of tornadoes, but of successful predictions of no tornadoes. In justification of this method of verification, the writer says, "It requires as much and often more study to say that no tornadoes will occur, as to make the prediction that conditions are favorable for their development." If this explanation be accepted as satisfactory, what do the verifications signify?

A little consideration will show that the *absolute* value of these figures gives no basis from which to judge of the real success of the tornado predictions. The averages of ninety-six and ninety-eight per cent are mainly functions of the non-tornado days, with but slight modifications for the success or failure of the prediction of actual tornadoes. An ignoramus in tornado studies can predict no tornadoes for a whole season, and obtain an average of fully ninety-five per cent. The value of the expert work must, therefore, be measured by the excess which is obtained over the man who knows nothing of the subject. This is the only way to determine any significance in the method of verification above described. The excess is but one or two per cent, and poorly exhibits the present stage of progress in tornado studies. The injustice which is done is to be found in the method of verification adopted. In ascertaining the value of tornado or any other special storm predictions, the consideration of days on which no storms occur, and none are predicted, is entirely beside the question.

If the writer of 'Tornado predictions' will give the verifications obtained from positive predictions, and

the occurrence of actual tornadoes, his measure of success will be directly apparent. G.

THE NATIONAL CONFERENCE OF ELECTRICIANS.

THE president of the United States, in pursuance of a special provision of congress, has appointed a scientific commission, the composition of which we gave in No. 78, of which Professor Rowland is chairman, and which may, in the name of the United-States government, conduct a national conference of electricians in Philadelphia in the autumn of 1884. The law creating the commission is as follows: "That the president of the United States be, and is hereby, authorized to appoint a scientific commission which may, in the name of the United-States government, conduct a national conference of electricians in Philadelphia in the autumn of 1884; that said commission may invite scientific men, native and foreign, to participate in the conference, and may, in general, determine the scope and character of its work; that the sum of seven thousand five hundred dollars be appropriated to meet the expenses of the commission in conducting the conference and investigations, and to meet the expenses of preparing reports of the same, *provided* that the whole amount of the expenses incurred by said commission shall not exceed the said sum of seven thousand five hundred dollars, and the members of said commission shall not receive any compensation for services." It is left to the discretion of the commission to invite foreign scientific men to join in the labors of the conference; and the United-States government does not dictate in regard to the topics which are to be treated in the conferences, further than to require that the first meeting shall be held as early as Aug. 7, 1884. In the letter to each member of the commission, apprising him of his appointment, Secretary Frelinghuysen writes, "It is hardly necessary to observe that this commission, appointed for high scientific purposes, will not permit its influences to be exerted in behalf of any person or company, manufacturers of electrical apparatus or machines."

The *raison d'être* of this commission is the conjunction of the electrical exposition in Philadelphia with the meeting of the American association of science in the same place, and the meeting of the British association in Montreal. It is hoped that a number of foreign scientific men may be induced to deliberate with the American commission upon more or less international electrical questions. It is thought by some that there is hardly need of another conference of electricians. The French conference has lately adjourned. Lord Rayleigh has made an exhaustive determination of the ohm. A standard of light has been adopted which is the best that present experience indicates. The meteorological directions of electrical science need time, and not conferences, for their development; and the protection of international cables and international telegraphic relations was fully considered in the French conference. In answer to this view, it must be pointed out that the mere assemblage of those most interested and practised in any department of science is necessary in the present state of scientific research. There are no 'gentle hermits' in the subject of electricity; and no one can hope to advance the subject by working in a remote lighthouse or on a desert island. There may be Victor Hugos in poetry and fiction, but not in electricity.

It is possible that American science may enlighten foreign science, even on such trite subjects as the ohm and the standard of light. There is, moreover, the adoption of the electric light by the American lighthouses, and a report upon the uses of electricity in connection with torpedo warfare, — a subject, when it is considered that torpedoes constitute our principal means of harbor defence, of especial interest in the coming presidential election. The imagination needs only a slight stimulation to perceive that the government can reasonably expect as great a return for the sum of seven thousand five hundred dollars invested in an electrical conference, as it can hope to have from the same sum expended in improving the harbor of Podunk.