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The Ether and the Earth's Atmosphere

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Source: *Science*, Vol. 13, No. 328 (May 17, 1889), p. 390

Published by: [American Association for the Advancement of Science](#)

Stable URL: <http://www.jstor.org/stable/1764802>

Accessed: 01/03/2014 10:33

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"building and loan associations." The author is president of a prosperous association, and thoroughly familiar with the details of management. Professor Henry Drummond will make an earnest appeal for the United States to join in the work of suppressing slavery in Africa. He says, "America has never been provincial. She must not become so. So manifold and pressing are now the interests of her own great country, that she might also be pardoned if she did. But the world will be bewildered and disappointed if she separates herself now from the rest of mankind in facing those great wrongs of humanity from which seas cannot divide her, and which her poorer brethren in every part of Europe are giving themselves to relieve. America does well in refusing the entanglements of European politics. Let her be careful lest she isolate herself from its humanities. None who know her will fear for a moment that the breadth of her sympathies and the greatness of her national heart will not continue to be shown in her sustained philanthropies, in her joining hand to hand with the advanced nations of the earth in helping on all universal causes which find their appeal in the world's great need and tribulation." Although the series on electricity will begin in the June number, there are several more of the railway articles to appear. Mr. H. G. Prout, of the *Railway Gazette*, will write of "Safety Appliances;" and Benjamin Norton, second vice-president of the Long Island Railroad, will describe the purchasing and supply departments under the title "How to Feed a Railway."

— A sympathetic sketch of the work of Mr. Bright, by Dr. R. W. Dale, forms the opening paper of the *Contemporary Review* for May (New York, Leonard Scott Publication Company, 29 Park Row). Dr. Dale admits it is yet too early to determine what rank will be permanently attributed to Mr. Bright among English statesmen, but contends there need be no hesitation in expressing the profound impression which his great personal qualities have made upon his contemporaries. The paper is accompanied by two pages of facsimiles of notes of speeches made by Mr. Bright, together with a full report, thus affording an interesting insight into his method of work. Lord Chief Justice Fry contributes an interesting and suggestive paper on "Imitation as a Factor in Human Progress;" Thomas Burt, M.P., presents a review of the progress of labor politics as represented in the British Parliament; T. Vincent Tymms makes another addition to the agnostic controversy now taking so prominent a place in the English reviews, in a paper on "Agnostic Expositions;" Edward T. Cook brings together many curious facts concerning popular judgment of works of art in an article on "Prices at the National Gallery;" Mr. W. S. Lilly contributes the first of a series of papers on Mr. Herbert Spencer in a paper entitled "Our Great Philosopher;" Grant Allen writes on "Individualism and Socialism;" and C. S. Addis, on "Railways in China." The number concludes with a valuable symposium on "The Industrial Value of Technical Training," with opinions of practical men. The contributors include Lord Hartington, president of the National Association for the Promotion of Technical Education, and numerous representatives of manufacturers in England.

— The *Fortnightly Review* for May (New York, Leonard Scott Publication Company) opens with an essay by Lord Wolsley, entitled "Is a Soldier's Life worth Living?" which he answers in the affirmative; William Archer makes a plea for an endowed theatre, urging that such an institution would render possible the production of many plays that are now never seen; Arsene Houssaye concludes his reminiscences of Alfred de Musset, begun in the April number; an unsigned paper, "What is Ritualism?" will doubtless attract a wide circle of readers; Professor Karl Blind contributes a series of personal recollections of John Bright; F. C. Selous describes the newly acquired Mashunaland, treating of an almost totally unknown portion of Africa; Lady Dilke contributes a paper on the foreign missions controversy, that has been prominent in this review, in a short article entitled "The Great Missionary Success;" Hamilton Aide has a thoughtful paper on "Color in Domesticity and Dress;" Thomas H. Thornton presents an interesting sketch of the development of English judicial and administrative history in a paper entitled "Two Centuries of Magistrates' Work in Surrey;" Col. Maurice criticises present systems of military training; and Professor Tyrrell views "Robert Elsmere as a Symptom," and finds serious fault with Mrs. Ward's literary style. The number concludes with an article by Cardinal Manning on "The Educational Commission and the School Rates," in which he argues for the extension of popular education.

#### LETTERS TO THE EDITOR.

\* \* \* Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.  
The editor will be glad to publish any queries consonant with the character of the journal.  
Twenty copies of the number containing his communication will be furnished free to any correspondent on request.

#### The Ether and the Earth's Atmosphere.

I HAVE read with much interest Messrs. Michelson and Morley's wonderfully delicate experiment attempting to decide the important question as to how far the ether is carried along by the earth. Their result seems opposed to other experiments showing that the ether in the air can be carried along only to an inappreciable extent. I would suggest that almost the only hypothesis that can reconcile this opposition is that the length of material bodies changes, according as they are moving through the ether or across it, by an amount depending on the square of the ratio of their velocity to that of light. We know that electric forces are affected by the motion of the electrified bodies relative to the ether, and it seems a not improbable supposition that the molecular forces are affected by the motion, and that the size of a body alters consequently. It would be very important if secular experiments on electrical attractions between permanently electrified bodies, such as in a very delicate quadrant electrometer, were instituted in some of the equatorial parts of the earth to observe whether there is any diurnal and annual variation of attraction,—diurnal due to the rotation of the earth being added and subtracted from its orbital velocity; and annual similarly for its orbital velocity and the motion of the solar system.

GEO. FRAS. FITZGERALD.

Dublin, May 2.

#### INDUSTRIAL NOTES.

##### A Satisfactory Motor.

OVER a year ago the Spokane Falls Chronicle Company of Spokane Falls, Washington Territory, decided to operate their presses by electric power, and purchased a 2-horse-power Sprague motor for the purpose. Since that time, this motor has been running one standard Babcock cylinder press and two quarto job presses at the same time, giving great satisfaction. The proprietor of the *Chronicle* says that during this time it has not cost one cent for repairs, and is in every particular just as good as when it was installed, and that the Chronicle Company are perfectly satisfied with their electrical power.

##### Some Contracts closed Last Week.

During the past week the street-railway companies which are about adopting the electric system for operating their cars have not been idle, and the Sprague Electric Railway and Motor Company of New York report a number of new contracts closed during

the past week. One of these is at Plattsmouth, Neb., where the Plattsmouth Street Railway Company have closed their contract with the Sprague Railway and Motor Company at Kearney, Neb., for a complete electric-railway equipment. The Pennsylvania Railroad have been so well pleased with the operation of the Sprague cars at Atlantic City, N.J., that they have ordered ten more complete trucks. In Binghamton, N.Y., the Washington Street and State Asylum Railroad has closed a contract with the Sprague Company to equip their line with the latest improved railway appliances, and latest type of motors.

The list of roads which have closed contracts during the week ending May 11, 1889, is as follows: Atlantic City Electric Railroad, extension, Atlantic City, N.J.; Collamor Line, East Cleveland, O.; Key City Electric Railroad, Dubuque, Io.; Long Island and Newtown Electric Railroad, Long Island City, N.Y.; Plattsmouth Electric Railroad, Plattsmouth, Neb.; Union Electric Railroad, Sterling, Ill.; Washington Street and State Asylum Railroad, Binghamton, N.Y.