

**Quantitative Spectroscopic Analysis.**—The especial merit of the spectroscope has heretofore been regarded to be the determination of the presence of certain elements in a luminous body, when there in such minute traces as to altogether defy detection by other known methods of analysis. The idea of extending the indications of this method of analysis to the estimation of quantitative values has often been suggested, but the difficulties to be overcome are very great.

Quite recently the subject has received considerable attention in learned circles, in consequence of a communication to the French Academy by M. Janssen, the eminent spectroscopist, who has pointed out very clearly, in a memoir to that society, the principles upon which such an application of the spectroscope might be based.

Mr. Janssen indicates two independent methods of procedure in such investigations, which may be employed simultaneously, and so serve as a species of control upon results obtained.

One of these methods is to measure the intensity of the bright lines afforded by a substance in the spectrum; the other is the measurement of the time required for the complete volatilization of a substance in the flame.

It is said that an apparatus constructed to take advantage of the first-named method has been successfully employed to determine the quantity of certain elements in the ashes of plants.

Should further experiment verify the expectation here expressed, the practical value of the spectroscope, which has already achieved wonders, will be greatly enhanced.

**The East River Bridge.**—From private sources we learn that work upon the bridge is progressing rapidly. The first anchor-plate was cast, two weeks since, very successfully. Anchorage excavation will be completed in about two weeks. The first set of anchor bars, making at Phoenixville, are about ready for testing. Masonry gangs all at work on piers.

**The Signal Service Bureau.**—It is stated that the "bureau" is about to extend its already elaborate system of weather prophecies, so that the valuable and exact information which is now daily distributed about the country through the agency of the press, may be made accessible to those who are not so fortunately located as to be able to avail themselves of morning and evening papers.

To effect this extension of its usefulness, the "bureau" proposes

to avail itself of the rural post-offices as mediums for the distribution of weather intelligence. The territory east of the Mississippi has been divided into districts of about two hundred miles in extent in every direction, each having near its centre a telegraph office, to which the weather intelligence will be each day telegraphed from Washington. Immediately on receipt of this intelligence, copies of the same will be sent to all the post-offices within the district which can be reached by post as early as 6 o'clock P.M. These weather maps will then be posted up on bulletin-boards, and may be consulted by the farmers and others interested, who may thus be guided in their business affairs. The arrangement here proposed will doubtless contribute greatly to the efficiency of the "bureau."

**Self-Lighting Signal Lantern.**—Some experiments with the Holmes lamp have recently been published. This lamp depends for its efficiency upon the fact that the phosphuret of calcium, in contact with water, develops spontaneously combustible phosphuretted hydrogen gas. The experiments in question, which are stated to have turned out very satisfactorily, are as follows: A long tin tube, firmly closed, in which was contained 900 grains of the phosphuret of calcium, was kept afloat upon the water by being fastened to a piece of board. Before putting it in the water, the bottom of the tube was perforated to allow the water to enter, and the upper point cut off, so that on the entrance of the water the self-lighting phosphuretted hydrogen gas was developed.

A flame four or six inches broad and twenty-four inches high, lighted up the steamboat and pilot boat, which had gone out four miles on the sea, with a party to witness the experiments, so brilliantly that the vessels and the men upon them are stated to have been distinctly visible from the lighthouse at that distance.

**The Planet between Mercury and the Sun.**—The existence of an intra-mercurial planet has been frequently argued for upon astronomical grounds, though an objective proof of its presence has as yet not been forthcoming. Mr. Cowie, however, has lately telegraphed from Shanghai an account of a recent observation in which he assumes that a black spot seen on the sun's disk at 9 A. M., on March 24th, marked in reality the transit of the supposed planet. It must, however, be added that both the observation and the inference drawn therefrom need corroboration.