SCIENCE:

A WEEKLY RECORD OF SCIENTIFIC PROGRESS.

JOHN MICHELS, Editor.

PUBLISHED AT

229 BROADWAY, NEW YORK.

P. O. Box 3838.

SATURDAY, OCTOBER 9, 1880.

Two or three weeks ago we complained of the coldness of British writers in neglecting to recognize and acknowledge the full scientific value of Bell's and Edison's discoveries, and we condemned, more particularly, their omission from Gordon's illustrated catalogue of recent advances in electrical science, which had then just appeared in London. To day, after having read a four column pean of eulogy and encomium on Prof. Bell and his Photophone, in the last number of *Engineering* we make a candid confession, that, in order to arrive at the real estimate of an American discovery in the average English mind, it is indispensable that the 'mean' of English criticism should first be drawn.

The concluding paragraph of this article reads as follows: "Who can say to what great fields of science this one discovery of Prof. Bell may not lead, fields of research not limited in locality to this earth, but reaching to the planets, and to the farthest limits of visible stellar space. It is by a beam of light that the modern astronomer is able to analyse the chemical constitution of the farthest stars and nebulæ, and is enabled to detect and to deal with metallic vapors through distances of thousands of millions of miles as surely as in his own laboratory, who, after Prof. Bell's experiments will have the hardihood to affirm that sounds taking place in the far off regions of the universe may not one day be heard on the earth, and new fields of acoustical astronomy may not be opened to the intelligence of man. When such a time arrives, the thought of the poet will be clothed with the truth of the fact, that "Light is the voice of the stars."

In the same strain which excites *Engineering* to this transcendental flight of fancy, may we not also hope, in the future, to catch the whisperings of Venus as she waltzes among her heavenly companions, and if we dare to reach so far in our aspirations for the perfection of the Photophone, may we not yet be able to hear the reflections of light, mixed with heat, which Mars, an ardent admirer of old, throws to that splendid luminary as they near each other? It is also true that Mr. Edison has helped to begin that sort of business; for did he not, long since, catch the warmth of the coronal beams, when the sun withdrew behind fair Luna's screen, and didn't Mr. Lockyer (who was there) tell us all that happened? Let us not, however, go too far and admit that the era has arrived which Gulliver predicted, when he discribed the process of the philosopher of Laputa who extracted sunbeams out of cucumbers.

Engineering should know that the Photophone is but a simple machine for registering heat waves that have impinged upon a piece of hard rubber, and that these waves, originally set in motion by the voice, when made to act on any material expansible by heat, will reproduce, more or less effectually, the original motion which gave them birth. Such an instrument is the Tasimeter, which Professor Bell has stripped of its swaddling clothes and made to talk.

CONSIDERABLE alarm has been created among those interested in horse flesh by certain reports circulated regarding a new so-called epizootic among horses. We have been at some pains to collect reliable *data* concerning this matter, and have found, as we anticipated, that its importance is greatly exaggerated by enterprising reporters of daily papers. We have become satisfied of the fact that the distemper now prevailing in New York, has nothing in common with the epizootic which was such a memorable feature of the year 1873, and so severe a one that hardly a carriage could be seen on our streets, while but few of the horse-car lines were able to keep their conveyances running with any regularity.

Veterinarians are accustomed to expect a more or less severe endemic of catarrhal troubles among horses about the first of October of every year. The horse is very liable to atmospheric influences, far more so than the human species, and the changes in the weather occurring about that time suffice to produce an apparent epidemic of catarrhal troubles among them. In some years few, in others many horses are affected; the present year the number has been so large as to temporarily interfere with business, but this is exceptional.

The disease lasts but a few days, the main trouble is a bronchitis associated with a slight catarrh of the nasal mucus membrane; for a period of from twelve to forty-eight hours there is also a febrile disturbance. The highest temperature recorded by a veterinarian, from an observation of fully one thousand cases has been

106½° Fahrenheit. The disorder is not fatal, it hardly requires any treatment even; only in debilitated or very old animals, or such as are overworked by inhuman owners, may fatal complications arise. Few deaths have taken place; a veterinarian in Yorkville who has visited stables containing an aggregate of a thousand affected horses, has had but a single death, that of an animal overdriven while convalescing, and in which pulmonary congestion resulted.

There is as yet no proof that the affection is contageous; it is rather endemic than epidemic. The rapidity with which it has successively appeared in Boston, New York and Chicago, speaks more in favor of an atmospheric cause than of transmission by contagion. A Boston microscopist asserts that bacteria or micrococci are active factors in its transmission, but he makes the statement, rather as an inference, than on the basis of observation. The same veterinarian, to whom we owe the communication of several facts here mentioned, tried to inoculate his own horse with the disease, by introducing the discharged matter from sick horses into its air passages, and failed in this and other experiments of the same kind. It is also observed that the endemic has appeared more frequently and affected more horses in large, well ventilated stables, in which the influence of outside changes in the temperature is quickly felt, than in close and confined quarters where the air is, if more impure, warmer, and the oscillations of the outside temperature less suddenly made manifest than in the former.

As far as this city is concerned, the *acme* of the endemic is past, and owners of horses frightened by sensational reports in the daily papers are recovering their wonted composure. If it has done nothing else the distemper has taught the one lesson, that when a horse is ill, the policy of getting as much work out of him as possible is, not to speak of its barbarity, exceedingly short-sighted, for no vigorous animals have perished in this endemic, except such as those in whose case this "penny wise, pound foolish" idea had been carried out.

PROFESSOR EDWARD C. PICKERING, of Cambridge, describes a novel celestial object observed by him on the 28th of August last, which presented a faint continuous spectrum with a bright band near each end. Clouds interfered, and barely permitted an identification with Oeltzen 17681, or a position in 1880 of R. A., 18h. 1m. 17s.; Dec., 21° 16′.

The object might be mistaken for a temporary star, like that in Corona in 1863, and the bands assumed to correspond to the Hydrogen lines C and F. Professor Pickering appeared to be unable to determine whether it was a nebula, a mass of incandescent gas resembling a nebula in character but not in constitution, or whether it was a star with a vast atmosphere of incandescent gas of a material not as yet known to us. The discovery of this object, in his opinion, greatly increases the difficulty of distinguishing between a star and a planetary nebula.

The observation was made on the 24th of August and described on the 2d of September, but in consequence of the fact that Professor Pickering sent his communication to a foreign journal, three thousand miles away, it was thus the second week in October when it came before the American public.

SCIENCE IN FRANCE AND GERMANY.

Dr. C. K. Akin has written a series of letters from Pesth to Professor G. C. Stokes, Secretary to the Royal Society, who was one of the Royal Commission on Scientific Instruction. These letters are dated 1870, but are now published for the first time by *The Journal of Science*, London.

In what may be called a supplemental communication Dr. Akin describes the condition of the most prominent scientific institutions in France and Germany. His remarks on the system of centralization, and abuse of the authority of those who profess an infallibility in respect to the human mind will be read with interest.

He states that these scientific magnates, the recognized "authority" in Germany, instead of rendering encouragement to students, positively check and impede all progress outside of their own circle, keep out new men with novel ideas as long as possible, so as to hold their own sway.

But we will leave Dr. Akin to make his own statement:

"The French Academy is in some respects similar to the Royal Society, and the points in which it differs from the latter are not, in my opinion, to its advantage. In the first place, the members of the Academy are salaried by the Government, but their emoluments are not sufficient to live upon, or to keep them, so to speak, in working order; nor do they perform any specific service to Science or the State for the money. The Academy, next, is divided into a certain number of sections, according to the several branches of science, and the number of members in each section is strictly limited. As that subdivision is invariable, while the relative importance of the sciences is fluctuating, the abuse has crept in of electing members into a wrong division. On the other hand, such a proceeding not being always practicable, highly distinguished men are excluded from the Academy for many years if their proper sections happen to be full; while if, from the dearth of cultivators or accidents of mortality, the number of vacancies happens to be great, the standard of admission is considerably lowered. The Academy publishes weekly its proceedings or "Comtes Rendus," which, from the celerity and regularity of their publication, are a valuable means of conveying rapid information; on the contrary, its transactions or "Memoires" are issued in a very irregular and dilatory manner. The practice of examining and reporting upon communications submitted has fallen into almost complete disuse; and the prizes, which are in a considerable number, are in a great part awarded upon the antiquated principle of putting forth questions. I have thus rapidly drawn the most distinctive features of the French