

Professors Morse and Henry.

To the Editor of the New-York Times:

In a very interesting history of the Electro-Magnetic Telegraph, in your paper of the 7th inst., it is stated, truly I believe, that Professor JOSEPH HENRY, by the construction and novel combination of magnets, demonstrated the possibility of transmitting the (electro) magnetic current over long distances; a revelation indispensable to the construction of a "Submarine Telegraph," and it might have been added "of any Electric Telegraph." In your issue of the 14th inst., Mr. ROBERT SHEPHERD, under date at New-Haven, Aug. 9, who seems to be jealous for the fame of Professor MORSE, appears to doubt the truth of that statement, and asks "Did Professor HENRY publish this fact to the world, make any practical use of it, or bury it in his own bosom?" In answer to this inquiry, so sceptical in its tone, it might be sufficient to say, that "Professor HENRY *did* publish it to the world—see *Silliman's Journal*, vol. xix. app. pp.400-408—that he did not make any practical use of it as relates to the electric telegraph. This has been done by STEINHEIL, COOKE and WHEATSTONE, and others in Europe, and Professor MORSE in America. That he did not of course "bury it in his own bosom," for it was known and read of all scientific men in Europe and America, before anything was done in either, successfully, towards the invention of the Electric Telegraph, and before Professor MORSE's name was heard of in connection with it. But I will briefly state the facts, of which I had the pleasure to be a witness, and so correct some trifling mistakes relating to this matter. In 1829, as stated in his communication to the *Journal of Science*, Professor HENRY, then of the Albany Academy, was engaged in some experiments on the application of galvanism to a development of magnetism in soft iron, much more extensively than had been previously effected by a small galvanic element, an account of which was published in the *Transactions of the Albany Institute*, June 1829. This led to a new set of experiments, undertaken in the Winters of 1830-31, the object of which was to produce the greatest magnetic effect with the smallest quantity of galvanism. These experiments resulted in the construction of the magnets referred to, far surpassing in power anything that had ever been known before. In the course of these experiments, Mr. HENRY discovered and demonstrated the all-important fact unknown before, namely, *the possibility of transmitting the Electro-Magnetic current over long distances*. His language in describing his seventh preliminary experiment is this: "From this experiment it appears that the current from a galvanic trough is capable of producing greater magnetic effect in soft iron, after traversing more than one-fifth of a mile of intervening wire, than when it passes only through the wire surrounding the magnet," and adds, "that the effect of a current from a trough, if not increased, is but slightly diminished in passing through a long wire is certain."—*Silliman's Journal of Science*, vol. xix., p. 403. And on the next page he adds, "The fact that the magnetic action of a current from a trough, is at least not sensibly diminished by passing through a long wire, is directly applicable to Mr. BARLOW's project of forming an electro-magnetic telegraph, and also of material consequence in the construction of the galvanic coil." p. 404. Here, then, the *fact* is stated by Prof. HENRY as demonstrated by the experiment referred to, and moreover its applicability to the project of a magnetic telegraph is not only suggested, but affirmed. I have no wish by these statements to diminish aught from the well-earned fame of Professor MORSE, but surely that will not be advanced by either ignoring or denying, on the part of his friends, the equally well-earned fame of Professor HENRY. There is enough for both; let each have what is his due. It is not doubted, I believe, by any, that the first successful application of electro-magnetism to the telegraph in this country is due to Professor MORSE. But, on the other hand, that the first discovery and demonstration of the principle on which the telegraph depends, and which Mr. MORSE has successfully applied, is due to Professor JOSEPH HENRY, admits of doubt just as little. These two things—the discovery of a principle or fact in philosophy, and the practical application of that principle to some useful purpose—are entirely distinct matters. Properly speaking, the first is a discovery, the second an invention. The first is the work of the philosopher, who, by well-devised experiments, interrogates nature to discover her laws; the second is the work of the inventor, who makes use of these laws when discovered for some special end. It is manifest the principle must be known before it can be applied. The discovery, in the nature of things, must be before the application of it to any purpose. The philosopher must go before the inventor, and the operations of both are necessary to the useful, practical result. So here. Before the fact first developed and demonstrated by Professor HENRY was known, it could not be applied to the electric telegraph nor to anything else. The idea of the electric telegraph was projected by Mr. BARLOW—a name well known to science—but with him it was a project only because the fact discovered by Professor HENRY, and necessary to success, was not then known. When that fact was made known Professor MORSE took it up, and, by his energy and skill, produced in this country the electro-magnetic telegraph; but if that fact had remained unknown there would have been no electric telegraph by land or water, either in Europe or America, to this day. It is proper to state that the experiments of Professor HENRY here referred to are not those which it is said he performed in Princeton, with five miles of wire borrowed from Dr. GALE, and read before the American Philosophical Society in November, 1838, but the experiments performed by him with the assistance of Dr. LEWIS C. BECK and Dr. PHILIP TAN EYCK, in the Albany Academy, in January and February, 1831, with 1,000 feet of wire, and published in *Silliman's Journal* in the Spring of the same year as above stated. It may be true, as Mr. SHEPHERD states, that Professor MORSE's acquaintance with Professor HENRY commenced in May, 1839. But it can hardly be thought, indeed it would be no credit to him as a man of science, to say that he was not acquainted with his experiments and their results, as they were published in the most popular and generally read scientific journals in the country in 1831. If he did not know them, then perhaps he is the only man of science of any note, either in Europe or America, that did not.

TRIOY, N. Y., Monday, Aug. 16, 1858.

B.