

# DESERET NEWS.

Truth and Liberty.

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[From the Southern Presbyterian.]  
**Thou art Growing Old, Mother.**  
BY LILLY LEA.

Thou art growing old, my mother,  
And thy brow is marked with care,  
All furrowed is thy aged cheek,  
Once beautiful and fair;  
Thy soft brown locks are sadly changed,  
Chill frosts have settled there,  
Touching with many a freezing kiss  
Thy gentle flowing hair.

Thou art growing old, my mother,  
As I catch the half-drawn sigh,  
Well I know that years of sorrow  
Have bedimmed thy melting eye;  
But with gentle light it beameth,  
Beameth on me even yet,  
With a love that never changeth,  
Till the sun of life is set.

Thou art growing old, my mother;  
Many of our household band  
Have before thee journeyed onward;  
To the far off better land;  
But thy voice in tender accents  
Still is falling on my ear,  
Sweetly brightening my pathway,  
Which, without thee, were so drear.

Thou art growing old, my mother,  
And around thy youngest born  
Shadows gather—darkly gather—  
Even in life's early morn;  
But the blessed Savior spareth  
Thee, to still protect thy child,  
While the storms of sorrow hover,  
Hover o'er me dark and wild!

Thou art growing old, my mother;  
Soon I feel that thou will rest  
In the 'land of the hereafter,'  
In the region of the blest.  
Who will love me then, my mother,  
When the last life chord is riven?  
Let us pray that both together  
God will take us safe to Heaven.

[From the Cleveland Plain Dealer, Aug. 11.]  
**THE ATLANTIC CABLE.**

It is about five years since a company of capitalists in New York conceived and enlisted in the enterprise. In the face of all the objections that were urged against it, they persevered with a determination that was proof against all discouragement. It was supposed by some that the laying of the cable across the bed of the Atlantic was an utter impossibility, and that any attempt must end in discomfort and disastrous pecuniary loss to those who should engage in the attempt. But the New York, New Foundland and London Telegraph Company was composed of men who were not to be deterred by such fears; and being once convinced of the practicability of the undertaking, they entered upon it with a will and an earnestness that no obstacles could overcome. They contended that if it were possible to lay a submarine telegraph between England and France, that, with proper means and facilities, the same could be done between America and Europe, and those means and facilities they asserted were at their disposal. The task which they had undertaken was, it must be confessed, a stupendous one. The company consists of the following gentlemen, all of whom have been connected with it since its incorporation:—

- OFFICERS OF THE TELEGRAPH COMPANY.**  
President.....Peter Cooper,  
Vice President.....Cyrus W. Field,  
Treasurer.....Moses Taylor,  
Electrician.....Samuel F. B. Morse,  
Directors.....Peter Cooper,  
Moses Taylor,  
Wilson G. Hunt,  
Cyrus W. Field,  
Marshall O. Roberts.

They obtained a charter from the colonial government of New Foundland, granting them the exclusive privilege for fifty years of running a telegraph across that island and thro' any of the adjacent waters. They also obtained an appropriation of twenty-five thousand dollars for the construction of a bridge path over the southern portion of the country, which was considered indispensable for the regulation and repair of the telegraph. In addition to this they were secured the interest on two hundred and fifty thousand dollars for twenty years, and a present of fifty square miles of land, which the company were allowed the liberty of selecting in any part of the island. These, with other substantial marks of the favor with which the New Foundland government regarded the enterprise, were willingly bestowed upon the company, with the best wishes for their success. A charter having been previously granted by the government of Prince Edward Island and New Brunswick, the telegraph connection—or rather the route of the proposed telegraph connection—be-

tween the United States and St. Johns, on the extreme western point of New Foundland, was established. In the latter part of 1856, complete communication was established between those points, by the successful laying of a submarine cable across the Gulf of St. Lawrence, from Cape Ray to Cape North, the land lines having been completed two or three years previously.

Through the efforts of Mr. Cyrus W. Field, the stock \$1,750,000 was soon subscribed—\$505,000 in London, \$140,000 in America, \$430,000 in Liverpool, \$185,000 in Glasgow, \$140,000 in Manchester, and \$50,000 at various other places in England. Subsequently the capital stock was increased to \$2,500,000. Congress gave the use of two steamships for the laying of the cable and granted an annuity of \$70,000 a year for twenty-five years. The British government were equally liberal.

The distance between Valentia Bay, Ireland, and Trinity Bay, Newfoundland is 1950 miles.

It will be seen by the following engravings that the trans-atlantic submarine cable is somewhat differently made from any previously manufactured. The core, or conductor, is composed of seven copper wires wound together. The protecting wires are made into strands, each composed of seven of the best charcoal iron wires. The aggregate length of the smaller wires required in the manufacture of one mile of the cable is one hundred and twenty-six miles, and as there were three thousand miles provided for the attempt this summer, the whole cable was consequently composed of three hundred and seventy-eight thousand miles of this wire, more than enough to pass fifteen times round the whole earth.



The following engraving shows the exact thickness of the wires, with those of their various coverings:—

**SMALL CABLE, 11-16THS OF AN INCH IN DIAMETER, SHOWING THE VARIOUS COVERINGS.**



1. Wire—Eighteen strands of seven inch wire.
2. Six strands of yarn.
3. Gutta percha—three coats.
4. Telegraph wires—seven in number.

The cable is very flexible, capable of being looped without injury. It weighs 1,860 pounds to the mile.

The Niagara was commanded by Capt. Wm. L. Hudson, the officers, the crew and hands amounting to 404 persons. The Agamemnon fully manned also, was commanded by Capt. Geo. W. Peabody.

On the 17th July the fleet sailed for mid-ocean—spliced and separated on the 29th.—The Niagara and Gorgon for Trinity Bay, and the Agamemnon and Valorous for Valentia Bay; both arrived on the 4th at their respective points of destination, and successful landed each end of the cable.

There are in America 33,000 miles of wire in use, and in Europe about 41,000. There are lines in Cuba, Mexico and South America.

On the Continent of Europe there are now in operation some 38,000 miles of land telegraph, divided up as follows:—

	MILES.
Great Britain,	10,000
France,	8,000
Belgium,	5,000
Germany and Austria,	10,000
Spain and Portugal,	600
The Netherlands,	600
Switzerland,	1,503
Italy,	2,500
Russia,	5,703
Total,	38,000

## SUMMARY OF SUBMARINE CABLES.

The following is a correct table of the number and length of the submarine cables laid down at different parts of the world:—

CABLES.	MILES.	WIRES.	DATE.
Dover and Calais,	24	4	1851
Dover and Ostend,	75	6	1852
Holyhead and Heth,	65	1	1852
England and Holland,	115	3	1853
Port Patrick & Donaghadee	13	6	1853
Second cable do do	13	6	1853
Italy and Corsica,	65	6	1854
Corsica and Sardinia,	10	6	1854
Denmark, across Gt. Belt,	15	3	1854
“ “ Little Belt,	5	3	1854
“ “ Sound,	12	3	1855
Across the Frith of Forth, (Scotland),	4	4	1855

Varna & Balaklava, (across the Black Sea.)	340	1	1855
Balaklava and Eupatoria,	60	1	1855
Across the Danube at Shumia,	1	1	1855
Across the Hoogley river, Messina to Reggio,	23	5	1856
Across the Gulf of St. Lawrence,	74	1	1856
Across the Straits of Northumberland, Prince Edward's Island,	101	1	1856
Across the Bosphorus, at Kandill,	1	1	1856
Across Gut of Kanso, Nova Scotia,	—	3	1856
6 cables across the mouths of the Danube at the Isle of Serpents, each one mile long and having one conductor,	6	6	1857
Across the Mississippi, at Paducah,	1	1	1851
From Petersburg to Constantinople,	10	1	1856
Across the St. Lawrence at Quebec,	—	1	1855
Across the Soland, Isle of Wight, (Eng.)	3	4	1855
Small river crossings,	20	—	—

Total length of submarine cables, . . . . . 950 miles.

The total length of submarine cables laid down is 950 miles, and the length of the conducting wires in all is 2,660 miles. The attempt to lay the great Atlantic submarine cable now being successful, the length of cables laid down is increased to 2,564, and the length of conducting wires to 4,075 miles.

A company are laying a submarine cable from Florida to Cuba, and it is contemplated to extend it to South America. Already Great Britain have extended their lines to Egypt with the view of carrying them forward to their Empire in India.

These gigantic enterprises will now receive fresh impetus, and where will they find their limit? We dare venture the opinion, and we do so with a great deal of confidence, that they will have to limit their operations to this earth.

## MR. FIELD'S ACCOUNT OF THE LAYING OF THE CABLE.

Mr. Field describes the feeling which pervaded all on board the Niagara while the cable was being laid, as one of the most intense excitement. Every man exerted himself to the utmost to achieve success in the work. Throughout the six and a half days the most perfect silence and attention pervaded amongst the men, lest a single moment of negligence should destroy the cable. On the first day after the paying out began it was found that the cable was being laid out at a rate which, in proportion to the distance run, would, if continued, have defeated the enterprise.

This was owing to the fact that the cable on the Niagara had caused so much local attraction as to seriously derange the compasses, rendering it impossible to steer the ship. Next day the commander of the Gorgon being apprised of the fact, ran ahead of the Niagara, steering in the most direct course for Trinity Bay. This he continued to do day and night until they arrived, never leaving the deck except for a few moments, and varying his position by repeated observations by the sun, moon and stars. To his agency therefore the success of the achievement is greatly indebted.

Mr. Field landed near the telegraph station, Trinity Bay, at 2 o'clock in the morning, and walked to the house, half a mile distant, thro' the wilderness, not a person being visible on the beach. At the telegraph house he found the operators from London fast asleep, not one of them expecting that the enterprise would succeed. Indeed they had not unpacked their trunks, anticipating that in a week or two they would be ordered back to London.

The reason why signals and not words were sent through the cable as it was being laid, is that on the previous attempt the clerks indulged in irrelevant conversation, which distracted their attention from duty at a time when the faintest obstruction might be fatal to the work. The Directors therefore ordered that signals only should be sent through the cable from ship to ship. Both vessels had Greenwich time, and the electric current played to and fro between them for ten minutes each way.

The signals showed that on the first day the speed of the Agamemnon slightly exceeded that of the Niagara, but on the succeeding days they went at the same pace, there never being more than twenty miles difference between them. When the cable was landed at both ends, Mr. Field applied his tongue to the end and received the cheering information that the insulation was perfect, in a shock that nearly threw him over. The reason why messages were not transmitted earlier was from the fact that all the apparatus at both ends was new and untried, and required a great deal of care and skill to adjust.

Mr. Field states that there is not the slightest doubt that the cable is an entire success, as great or greater than its most sanguine friends looked forward to. By the Persia today he writes to the Directors to prepare another cable at once, as it is evident that the present one, which will in a short time transmit messages as rapidly as an aerial line, will be entirely inefficient for the business which will flow to it.

Until the first of September the line will be closed to all messages save those from the governments of Great Britain and the United States. During that time Mr. Field will keep the public advised of all matters affecting the success of the cable.—[Tribune.]

## THE WORKING OF THE ATLANTIC TELEGRAPH CABLE.

We have received from a private source undoubted intelligence from Trinity Bay, which gives the precise explanation of the present delay of the first messages in words across the Atlantic. We are permitted to lay it before our readers. It is not of a character to create any fear of permanent difficulty in the use of the cable, though it may require material alterations of the instruments now in use.

It appears that in the passage of one electrical signal across the ocean, not only is an appreciable time consumed, but the signal itself changes, in a degree, its original character. It is, so to speak, stretched out. A signal which, on a short line, would seem perfectly sharp and prompt, takes the form of a long wave, and requires from six to ten seconds to declare itself between the beginning of its effect and its end. Between what such a signal would be at the end of a short wire, and what it is at the end of the Atlantic wires, there is somewhat the same difference as between the shortest (staccato) blast of a whistle, and a note drawn out with the swell of an organ to the length of six or even ten seconds. A distinct feature to be observed is the swell of the prolonged signal. It has most force in the middle of its period, and gains and loses that force gradually.

Of the length of time which this modified signal requires for passing the ocean, we are not informed; nor do we know that it has been ascertained. It is evident, however, that it must be at least 6 seconds, the shortest period in which one signal completes itself. Now it is well known by Faraday and Wheatstone's observations on long wires, that for at least half the period required for the transmission of any signal, the current must be continued unbroken; no new signal must be begun. Otherwise the signal returns to the operator, that being its shortest opportunity to discharge itself. At the shortest, therefore, one signal on the cable will require more than three seconds at the point of starting, and six seconds to record itself.

Readers who have the slightest knowledge of telegraphic machinery will understand how materially such a modification of the promptness of the signal must affect any form of the apparatus in use. The quickest tap of Morse's telegraph for instance, is exchanged, with such a signal, for a long crescendo and diminuendo wave. In Morse's alphabet, spaces, short taps or dots, and long ones or dashes, are variously modified to make the several letters. A word of ten letters may consist of thirty or forty of such signs. It will readily be seen how impossible it would be for an operator to transmit such a word, until experiment enables him precisely to adapt his spaces to his dots and dashes, to tell when a dot ends, and when a space begins. So great is the immediate change when an instant dot is changed into a signal six seconds long.

We give this illustration merely because it is so simple. Similar changes in computation and combination will be required for the needle telegraphs or the printing telegraphs. There is no reason why Hughes' telegraph, which is highly and deservedly praised, should escape them more than any other. We must be content to wait till these experiments and new computations have been made.

The essential victory has been gained in the transmission of rapid, well pronounced signals from side to side. Out of these signals an alphabet can be formed, or recording machinery can be driven by them, beyond a doubt. It was not to be expected that the varied apparatus of the short lines should answer the same purpose, without modification, upon one so long.—[Boston Daily Advertiser.]

THE Terra Haute Express indulges in the following speculations upon the discovery of a human jaw-bone of unusual size:

We have before us the lower jaw-bone of an Indian, taken from a grave about three miles below the city. It is immense in its proportions, being almost twice the size of that belonging to an ordinary man. The teeth, all of which are sound, are very large, and the front one set in the jaw transversely, in order, we suppose, to give them strength. If this jaw-bone is not disproportionate with the rest of the man, he must have been a monster indeed.