Poetry.

The Huskers.

BY JOHN G. WHITTIER.

Heap high the farmer's wintry hoard!
Heap high the golden corn!
No richer gift has Autumn poured
From out her lavish horn.

Let other lands exulting glean
The apple from the pine,
The orange from its glossy green,
The cluster from the vine:—

We better love the hardy gift
Our rugged vales, bestow,
To cheer us when the storm shall drift
Our harvest fields with snow.

When spring-time came with flower and bud,
And grasses green and young,
And merry bob'links, in the wood,
Like mad musicians sung,

We dropped the seed o'er hill and plain,
Beneath the sun of May,
And frightened from our sprouting grain
The robber-crows away.

All through the long bright days of June
Its leaves grew thin and fair,
And waved in hot mid-summer's noon
Its soft and-yellow hair.

And now, with Autumn's moonlit eyes,
Its harvest time has come,
We pluck away the frosted leaves,
And bear the treasures home.

There, richer than the fabled gift
Of golden showers of old,
Fair hands the broken grain shall sift,
And knead its meal of gold.

Let vapid idlers loll in silk
Around their costly board,—
Give us the bowl of samp and milk,
By homespun beauty poured.

Where'er the wide old kitchen hearty
Sends up its smoky curls,
Who will not thank the kindly earth,
And bless our corn-fed girls!

Let earth withold her goodly root,
Let mildew blight the rye,
Give to the worm the orchard's fruit,
The wheat-field to the fly:

But let the good old crop adorn
The hills our fathers trod;
Still let us for his golden corn
Send up our thanks to God!

Miscellaneous.

History of the Electric Telegraph.

In connection with the great triumph of science which has just been achieved, the following resume of the history of the processes through which the electric telegraph has passed in obtaining its present perfection, will be found interesting:

1726—An Englishman named Wood discovered that the electric fluid could be conducted long distances by wires.

1746—Herr Winkler of Leipsic discharged a Leyden jar by a friction machine, through a wire of considerable length, the river Pleis forming part of his circuit.

1747—Dr. Watson made a successful experiment of a similar character, over a space of four miles, at Schooner's Hill, near London, embracing his circuit of two miles of wire and an equal distance of ground. A writer in the Philosophical Transactions, vol. xiv, 1848, gives him the credit of having been the first to suggest the application of electricity to telegraph purposes.

1748—Dr. Franklin set fire to spirit by an electric current sent across the Schuylkill on a wire, and allowed it to return by the river and earth.

1774—M. Lesage of Geneva constructed an electric telegraph, consisting of twenty-four wires, each properly insulated, and terminating at one end of either, was put into communication with the prime conductor of an electrical machine, the ball was repelled, and a corresponding letter thus indicated.

1784—M. Lomond of France communicated telegraph signals to a neighboring room by means of a potato ball electrometer acted upon by electricity.

M. Reise illuminated letters upon plate glass formed of tin foil, by means of electricity.

1795—M. Cavalo proposed to forman electric telegraph by firing a gas pistol at the distant end of a wire, and thus to give signals.

M. Sivar attributes the first idea of an electric telegraph to Dr. Franklin.

1798—Betancourt established a telegraph between Madrid and Aranjuez, a distance of 25 miles, through which a current of electricity was passed and gave signals for letters.

1809—Soemering constructed the first galvanic telegraph at Munich, which operated by the decomposition of water, and which he also caused to ring a bell at the opposite end of the wire. Soemering's was the first decomposition or chemical telegraph, and can be even now, successfully, but less rapidly worked than Bain's.

1816—Dr. John Redman Coxe of Philadelphia, proposed to establish an electric telegraph and to make signals at a distance by the decomposition of water and metellic salts, causing a change in color to ensue.

1819—Professor Versted, of Copenhagen, discovered electric magnetism or electric magnetic motion.

1820—M. Ampere, of France, discovered the electro magnetic telegraph. This he constructed of as many wires as there were letters, and used the deflection of the needle as a signal. He broke and renewed the circuits by finger keys, something similar to those of the key of a piano forte.

1828—Francis Ronalds, of England, proposed a telegraph by the use of frictional electricity. In his arrangements there were clocks at the station which kept time with each other, and which were furnished with a light disc of cyphers in place of hands, having twenty different signs to ward their circumference. At the moment the proper sign on the disc passed before the index at one station the spark was discharged, and the electrometer placed at the other discharged at the other and caused the signs on the disc at the other to be noted. The telegraph is said to have extended to Hammersmith, eight miles, and to have used the discharge of a gas pistol as an alarm.

1825—Mr. Barlow, of Greenwich, England, made an attempt to put a galvanic telegraph in operation, but was baffled by the diminution of the fluid, when he attempted to transmit it for a great distance, so as to produce mechanical effects. This difficulty the discovery of Henery, however, afterward overcame.

In the same year Mr. Sturgeon of England constructed the electro magnet by coiling a copper wire round a piece of iron of a horse shoe form, the bent turns of the wire being so far apart as to prevent contract. He found that when the electric fluid passed through this coil, the inclosed iron became a magnet, and was again demagnetised in breaking the current. The wires were afterwards coated with non-conducting substances, and wrapped around the iron in close contact, as we now see them.

1826.—Mr. Harrison Gray Dyar erected a telegraph on Long Island, in New York. He used frictional electricity, and dyed marks on chemically prepared paper by the passage of sparks.

1831.—Professor Joseph Henry of Princeton College discovered a method of forming magnets of intensity and of quantity produced from corresponding batteries, and by the use of which, with relay magnets, &c, prepared by him he made known the practicability of producing mechanical effects at a great distance, say 1000 to 2000 miles.

1832.—Baron Schilling of St. Petersburg contrived a deflective magnetic telegraph, which had an alarm bell connected with it.

1833.—Gauss and Weber first constructed the simplified electro-magnetic telegraph. It was Gauss who first employed the incitement of induction and demonstrated that the appropriate combination of a limited number of signs is all that is required for the transmission of communications. Weber discovered that a copper wire 7400 feet long, which he carried over the houses and church steeples of Gottingen, from the Observatory to the Cabinet of Natural Philosophy, required no special insulation. This was an important point of discovery in the construction of telegraph lines, and is made available to the present time.

1837.—Stienbiel constructed and put in use between Munich and Bogenhausen, in the July of this year, his registered electro-mangnetic telegraph. By the deflection of a needle he produced dots or short marks on fillets of paper, to stand as signals for letters, &c., the paper being drawn forward by clock-work in an endless slip or ribbon.

On the 12th of June of this same year the deflective electro-magnetic telegraph of Cook of Wheatstone was patented in England. They first employed receiving and relaying magnets.

In the October following, Samuel F. B. Morse of New York, entered his first caveat for an American electro-magnetic telegraph, in which he chiefly relied on a kind of type and port rule for making signals by the mechanical force of electro-magnetic motion. Morse claimed that he first thought of a magnetic telegraph on his passage to the United States in the brig Sally, in the year 1832.

1838.—Edward Davy, of London, had his patent sealed for a chemical telegraph, which was enrolled January 4, 1839. In his plan he employed chemically prepared paper, similar in its general character to that used on the instrument of Bain.

1848.—Alexander Bain obtained his English patent for his improved electro-chemical telegraph, and got his American patent 1840.

1847.—Royal E House of New York, obtained, in conjunction with Mr. Brett, a patent for their ingenious and valuable printing electric telegraph.

1848.—Messrs Zook and Barnes of Cincinnati, invented a modification for the electro-magnetic telegraph, by combining fixed magnets with the use of electro magnets.

1849.—Monday, 29th January.—The memory of Horatio Hubbell, in which he was joined by John H Sherburne, was presented to Congress, praying for aid in constructing a telegraphic communication across the Atlantic Ocean, setting forth the existence of a table land plateau on soundings between Newfoundland and Ireland, upon which the said telegraph could be constructed, and entering into other details in order to carry out the project. It being the first devised and published plan ever made to carry a telegraph across the ocean.

Mr. Horn of New York invented his igniting telegraph, which made dots and lines by burning them on slips of revolving paper by the heat of the electric fluid while passing.

About the same time, Mr. Johnson of New York contrived a machine worked by electro-magnetism, to let that drop on slips of paper, which being prepared at the same moment, left visible marks which stood as signs for letters.

Also about the same time, Mr. Daniel Davis of Boston prepared an Axial telegraph, which with that of Horn and Johnson, does not seem to have met with much attention.

1855.—Mr. Hughes obtained his patent for his ingenious and admirably combined printing telegraph, which is destined to effect a revolution in all the existing systems. Its superiority consists in its working reliably on a larger circuit than any instrument previously invented. Not only does it transmit messages with greater rapidity, but it has the advantage of receiving and transmitting simultaneously on a circuit of at least five hundred miles, performing the work of two ordinary wires on one: it is also less liable to interruption from the atmospheric electricity.

The total length of telegraph lines in 1858, so far as was ascertained, was 96,850; of which there was in America 4500, in England 10,000, France 8000, Germany and Austria 10,000, Prussia 4000, Russia 5000, the rest of Europe 7350, India 5000 Australia 2000, others parts of the world 500. The number of messages passing over all the lines in the United States is estimated at about 4,000,000 per annum.

Until the year 1850, the submarine cable was practically unknown. In this year the first submarine cable was laid from Dover, England, to Calais, France. The cable was twenty-four miles long, and has since been in operation, with one interruption, with complete success. Since that period 950 miles of submarine cable have been laid in twenty-seven different lines, the three longest of which are across the Gulf of St. Lawrence, in 1856, 74 miles; between Varna and Balaklava, across the Black Sea, in 1856, 340 miles."

The intelligence of a Caffre war or an Indian mutiny will reach us before the first blood that has been shed is cold, and we shall be able to economize the whole time consumed by the ordinary vehicles of intelligence. We see with not unnatural satisfaction that the advantage of the discovery will be the greatest to these countries the possessions of which are the most remote, and, therefore, that England has more to gain than any of her rivals. More was done yesterday for the consolidation of our Empire than the wisdom of our statesmen, the liberality of our Legislature, or the loyalty of our colonists could ever have effected. Distance between Canada and England is annihilated. For the purpose of mutual communication and of good understanding the Atlantic is dried up, and we become in reality as well as in wish one country. Nor can any one regard with indifference the position in which the Atlantic Telegraph has placed us in regard to the great American republic. It has half undone the Declaration of 1775, and gone far to make us once again, in spite of ourselves, one people. To the ties of a common blood, language and religion, to the intimate association in business and a complete sympathy on so many subjects, is now added the faculty of instantaneous communication, which must give to all these tendencies to unity an intensity which they never before could possess.

Telegraphic Instruments.

As the electricians are supposed to be experimenting at Trinity Bay and Valentia with the various recording instruments in use, it is of interest to know what are the chief differences between them.

The Morse Instrument, in common use from the first, in this country, transmits messages by the alternate breaking and reconnecting the electric current. The current allowed to flow a moment produces a dot; if a little longer a line. The operator taps on a single key, and the messages are recorded by an alphabet composed of combinations of lines and dots, thus:— - - - - — - - - - - - - - - - - —. In the hands of an expert, the speed of this instrument is about twenty words a minute.

The Cooke and Wheatstone Instrument is the one that, until lately, has been generally used in England. A needle on a dial plate revolves, pointing out the letters, which are inscribed around the circumference like the hours on the face of a clock. This, at the fastest, is only about fourteen words a minute.

The House Instrument prints the message in Roman capitals, on a long strip of paper, by the revolution of a type wheel, the operator playing on a key-board, like that of a piano, with a key for each letter. The printing is done by clock-work, the use of the electric current being to preserve equal time, so that the letters of one machine may correspond to those of the other. This instrument prints twenty-five or thirty words a minute.

The Hughes Instrument is a combination of the Morse and House inventions. In Morse instruments two or three pulsations of the electric current are required to indicate one letter. In the House instrument it requires from one to twenty-eight pulsations. In the Hughes instrument it requires but a single pulsation for each letter.—*American Paper*.

Painless Extraction of Teeth.

Various methods have been resorted to for the purpose of alleviating the excruciating agony consequent upon the extraction of teeth; but as the general anæsthetics are in all cases tedious and troublesome in their application, and often attended with fatal and dangerous results, sufferers, rather than experience the momentary pain of extraction, or run the risks of general or local anæsthesia from the means heretofore employed, impair their health by retaining in their mouths diseased teeth and roots. To avoid the dangerous results of chloroform, and to do away with the employment of the not either harmless or efficient process of freezing mixtures to the jaw, Mr. Jerome B. Francis, of Philadelphia, has invented a method of producing local anæsthesis by the application of an electric current, and through this means to effect the painless extraction of teeth. The application is simple, and consists in attaching to the forceps the negative pole or flexible wire of the ordinary electro-magnetic machine, or graduated battery, and placing the metallic handle of the other or positive pole in the hand of the patient, and by this means to cause an interrupted current to traverse the body of the patient and the extracting instrument. The intensity of the current is previously graduated while the patient grasps the forceps and handle, till it is just distinctly perceptible, and the circuit through the tooth is not completed till the moment at which extraction is to begin.—This interruption is said to be desirable till the forceps are placed upon the tooth, when the circuit is formed, and the extraction made at once. How this annuls pain we can not determine, but that it has, in a large number of cases, we are satisfied from the representations of able dentists in this and other cities. This novel process of extracting teeth was patented the 25th of May, 1858, and the claim is to the combination of the electric-magnetic machine with the dental forceps.—*Scientific American*.

THE
PROVINCIAL WESLEYAN,
IS PUBLISHED EVERY THURSDAY,
At the Wesleyan Conference Office and Book-Room
136, ARGYLE STREET, HALIFAX, N. S.

The terms on which this Paper is published are exceedingly low:—Ten Shillings yearly —half in advance.

ADVERTISEMENTS.

The *Provincial Wesleyan*, from its large, increasing and general circulation, is an eligible and desirable medium for advertising. Persons will find it to their advantage to advertise in this paper.

TERMS:
For twelve lines and under, 1st insertion - - 4 0
" each line above 12—(additional) - - 0 4
" each continuance one-fourth of the above rates.
All advertisements not limited will be continued until ordered out, and charged accordingly.

JOB WORK.
All kinds of Job Work executed with neatness and despatch on reasonable terms.

This Paper is filed, and may be seen free of charge at HOLLOWAY'S PILL OINTMENT ESTABLISHMENT, 244, Strand, London, where Advertisements and Subscriptions are received for this Periodical.