

children under fifteen years of age, and the number of American women between the child-bearing ages of fifteen and fifty, is steadily declining. In 1830, there were to every 1,000 marriageable women 1,952 children under fifteen years of age. Ten years later there were 1,863, or eighty-nine less children to every 1,000 women than in 1830. In 1850 this number had declined to 1,720; in 1860 to 1,636, and in 1870 to 1,568.

"The total decline in the forty years was 384, or about twenty per cent of the whole proportional number in 1830, a generation ago." Alluding to the supposed causes of the physical degeneracy in question, Dr. Clarke says, "If these causes should continue for the next half century, and increase in the same ratio as they have in the last fifty years, it requires no prophet to foretell that the wives who are to be mothers in our republic must be drawn from transatlantic homes. The sons of the new world will have to react, on a magnificent scale, the old story of unwed Rome and the Sabines."—*Westminster Review*.

THE TELEPHONE.

PLAYING TUNES AT A DISTANCE OF A MILE—PRACTICAL APPLICATION OF THE DISCOVERY—TWENTY-TWO MESSAGES SENT SIMULTANEOUSLY OVER ONE WIRE.

About the middle of last July, the *Tribune* published an account of an invention of Mr. Elisha Gray, superintendent of the Western Electric Manufacturing Company, called by him the telephone, with whose aid he was enabled, as the article showed, to transmit sounds from one end of the telegraph wire to the other, or to any point or points along the same. At that time the invention was sufficiently advanced to give promise of practical results of uncommon value, which later developments have fully confirmed. In England, as will be seen further on, the idea attracted the favorable attention of the very highest scientific authorities, and it will thus easily be understood that when, yesterday morning, the inventor gave an exhibition of the new idea he had discovered in the field of electric science, he did so with a confidence he may not have possessed six months ago.

The exhibition of the telephone took place in General Stager's room, in the Union Building, and was attended by Mr. Gray, the inventor, Gen. Stager, Prof. Swing, the Rev. Messrs. Hurd and Mitchell, Messrs. S. Barker, J. Haskell, C. R. Field, G. Sturges, Herbert Ayer, W. H. Smith, Stephen F. Gale, Obadiah Jackson and others. It is perhaps, more proper to say that the exhibition was of the powers of the telephone, rather than of the instrument itself, which was performing its part of the work at the office of the Western Electric Manufacturing Company; but as the results of the grand transmitting process are made audible at the office of Gen. Stager, of course this was the best place to gather an idea of what the new feature in telegraphy really was. It must be understood, then, that on Kenzie street, just east of State, a gentleman, in obedience to instructions from the Union Building office, spent an hour or two about noon in playing upon the telephone a number of popular airs, such as "Yankee Doodle," "Robin Adair," "Auld Lang Syne," "Coming thro' the Rye," etc., and to enjoy his musical performance, the gentlemen were invited to General Stager's room in the Union Building. As soon as they arrived and had been introduced to the inventor, he briefly explained to them the nature of the exhibition, showing that the sound-producing instrument was about a mile distant, and calling attention to the receiving instruments, by means of which he proposed to bring the far-off music within the hearing of all in the room. There were two in number, one, a sounding-box, made in wood, perforated on one side, about sixteen inches in length and four inches in height and breadth, with an electric magnet placed upon its upper surface—the other an ordinary violin with a metallic plate stretched across it on a bridge, in lieu of the four strings.

The first exhibition made was with the sounding-board. The wire leading into the room from the electric works on Kenzie street was connected with the electro-

magnet on the sounding-box, and the general telegraphed to the instrumentalist at the works to begin playing. In a few seconds the sounding-box began to evoke sweetly and very sonorously the tune of Yankee Doodle, followed in a minute by Robin Adair. The effect upon the audience—all of them were fully capable of appreciating whatever of the beautiful, or wonderful, or useful, or all combined, there is in art or nature—was instantaneous. They looked from one to the other with a that's-a-big-thing sort of an expression which was quite amusing, and when the last note of Robin Adair died away they made quite a number of pertinent inquiries of the inventor, who explained to them that the sound was produced at the other end of the line by an instrument fitted with keys, which, under the action of the electric current, underwent a certain number of vibrations, which, according to the number each key achieved, provided its note, the number of vibrations of the higher keys being, of course, much greater than those of the lower. The number of vibrations per second achieved by the key in the telephone was reproduced in the electric coil on top of the sounding-box, which, systematically vibrating, sounded the note. The inventor then called attention to the fact that with the introduction of living animal tissue into the circuit the sound could be produced without agency of the electro-magnet. In proof of this, he placed himself in the circuit, and, taking the violin above described in his hands, he rubbed the surface of its metallic plate with a bow composed of a small piece of wood with a piece of a pig's tail dexterously inserted therein, and evoked as loud correct music as had been provided by the sounding-box. Having shown the gentlemen present how to do it, they all in turn took the violin in hand, and although none of them had ever played a note in their lives before, with the aid of the piece of pig's tail they produced just as good music as Mr. Gray, every bit. The inventor then, to show that the principle applied to everything that was sonorous in its nature, sent for a dust-pan, from which he, placing himself in circuit, brought forth the music, less clearly of course, than from the violin or sounding-box, but still quite audible to all in the room. He then took an ordinary letter box, and placing a sheet of tissue paper across it instructed a gentleman present to put himself in circuit and hold the papered side of the box to his ear. The gentleman did so, and announced the name of the tune at once. Several other gentlemen played upon the dust-pan and held the letter-box to their ears with equally satisfactory results, and what was more remarkable was that while the song was pealing forth from the violin, the sounding-box was playing the same tune not a whit less loudly than before. Such are the different exhibitions made by the inventor of his newly-discovered feature in electric science, and, before leaving, the gentlemen present all expressed their admiration and wonder at the results produced, and a conviction that, practically applied, the invention would become of great commercial importance. "It was reserved, however, for the *Tribune* reporter, who was present at the exhibition, to look deeper into the new idea than had been permitted those who had enjoyed what is perhaps the most amusing, but certainly is by no means the really important, point of the invention. As soon as the inventor and he were left alone they repaired together to the Western Electric Manufacturing Company's workshops, in order to have a talk about the practical application of the new idea. Having examined the telephone, the reporter found that it was an exceedingly simple instrument, consisting of twenty-two musical keys, arranged to be worked electrically. The following conversation ensued:

Reporter.—The exhibition you gave this morning was a wonderful affair, but then the transmission of even operas and oratorios through absolutely enormous distances cannot ever prove of much advantage to the human race. Now, what is the practical application of your invention?

Mr. Gray.—The practical feature of the invention lies in the fact that, with my instrument, I can transmit all the common chords of a seven-octave piano along a single wire at the same time, and in the further fact that these harmonic

sounds can be analysed at the receiving end on instruments, each of which selects its own peculiar note, and rejects all others. Thus one wire can easily be employed by at least twenty-two different sending and twenty-two different receiving operators.

Reporter.—Can you not send more than twenty-two messages in an opposite direction at the same time?

Mr. Gray.—That is a point I do not know about yet?

Reporter.—You say "at least twenty-two." Is there then a prospect of sending even more messages in the same direction?

Mr. Gray.—That remains to be seen. If I can transmit and receive discords as well as harmonies, of course the number of messages will be largely augmented, but I have my doubts about being able to do so.

Reporter.—Well, twenty-two messages at once is a good number. How will it work?

Mr. Gray.—We will see that in a minute.

Reporter.—Does the length of line make any difference?

Mr. Gray.—Of course the longer the wire, the larger the battery required, but the sound is carried over any length of wire which is electrified from a sufficiently strong battery. In England I made experiments on what they call there an artificial cable, representing the conditions of an actual ocean cable. The experiments were as thoroughly successful as those you witnessed this morning. At a future day we intend to make experiments with the cable proper.—*Chicago Tribune*.

Logan, the "Wild Irishman," on his Feet.

Pranced there in upon the arena of the great debate, like a trick mule in a circus, or a spavined nightmare upon the track of a beautiful dream—Logan, of Illinois. There was a vision of mustaches, eyebrows and hair, piled on each other in arches; a large brandishing of arms, a pose and a strident war-whoop; and much as though a picture of the Deerfield massacre had stepped out from the pages of our early history. Logan took the American senate by its large capacious ears. And then he went for his mother tongue. He smote it right and left, hip and thigh, and showed no mercy. Swinging the great broad-ax of his logic hair in the air, he turned it ere it fell, and with the hammer side struck the language of six millions of people fairly in the face, and mashed it beyond recognition. Under his stroke the floor of the American Senate was shattered with the remnants of a once proud vocabulary, and messengers, door-keepers and pages were covered from head to foot with the spray. In the fearful two hours which followed the first roar of his oration, all the parts of speech were routed and put to flight. There were orphaned adjectives and widowed nouns, bachelor verbs driven to polygamy, and polygamous verbs left lonely, conjunctions dismembered, prepositions scattered, adverbs disheveled and distorted, and syntax flung into wild disorder. It was a great day for Logan.—*N. Y. Tribune*.

DIED.

At Hyde Park, Cache Co., January 12th, of old age, MARY SEAMONS, aged 73 years, 10 months and 7 days.

Deceased, in connection with her husband, Henry Seamons, embraced the gospel in Ailsa, Suffolk, England, in 1852; emigrated to the United States in the Spring of 1856; lived in the State of New Jersey for about three years; in the Spring of 1859 moved with her family to Omaha, Neb., at which place her husband died; emigrated to these valleys in 1860, and settled in the town of Hyde Park, where she remained till the day of her death. She lived and died a faithful Latter-day Saint, and leaves behind her a posterity of eight children, sixty-one grand-children, three great grand-children, and a large circle of friends and acquaintances.

Millennial Star, please copy.

At Oxford, Oneida Co., I. T., of disease of the throat, January 13th, GEORGE EPHRAIM, son of George and Louisa Ann Lake.

ESTRAY NOTICE.

I HAVE in my possession—A small bay MARE, about eight years old, white star in forehead, white spot on nose, hind feet and legs white, some saddle marks; which, if not claimed and taken away, will be sold at public auction on Friday, Feb. 5th, 1875, at 2 p.m., at the Estray Pound in this city.

JOSEPH HORNE.

District Poundkeeper. Salt Lake City, July 26th, 1875.

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