

Citizen and Home Guard

Where Edison Works

A Visit to the Wizard's Shops Over in Jersey—Buildings That Walk—At Work on the Kinetograph—Grand Opera May Be Produced in the Parlor When the Machine Is Perfected.

A visit to Thos. A. Edison is suggestive of a pilgrimage to the haunts of some medieval wizard. The Walpurgisnacht in "Faust" and the summit of the Brocken seem tame in comparison. The greatest inventor that ever lived has established himself in a dell hidden among vagrant mountains in New Jersey wilds. The neighborhood has no inhabitants, with the exception of the 200 odd men whom the wizard employs in his incantations. The place is an old deserted mine, once known as Ogden, but the rock-abye railroad with balky engines and wheezy, catarrhal ears that meander that way when the wind is not too strong, has christened it Edison. There are buildings all over Edison—large buildings that walk about the premises if you press a button. But one must know which button to press, for, although some take you to the opera, there are others.

When you reach the place no one pays much attention to you. That is one of its dangerous fascinations.

"If you stay there another minute," said an unclean, nondescript object, very calmly, "you will be broken into small pieces and carried underground."

"But can I see Mr. Edison?"

"I don't know. The old man's around somewhere. Go to that red building."

Easier said than done. For the big, red building begins to move timidly away the moment you get near it, stops when you stop, advances when you advance, and is altogether a will-of-the-wisp of architecture.

Finally it hove to and was boarded. It is an office and they pressed a button, found out Mr. Edison's exact location, and then began to break up mountains.

Breaking up mountains is a very simple process. It is begun, of course, by pressing a button. A huge boulder is detached from the solid rock, carried on a movable hod as large as a barn, dropped upon a pair of huge iron wheels and shivered into cobble stones. The cobbles whirl aloft in trays or troughs, come down dust and the grains of iron they contain are picked out magnetically. A three-ton boulder is splintered into fine iron in three minutes, the refuse going into the dust hole.

Finally the great Edison appeared. He was terribly dirty. He looked, so far as attire is concerned, like a navvy. He was all grime and dust. But his face was that of a bright, blue-eyed youth, beautifully blue-eyed and smiling. Not until he took his vile, ash-covered hat off did the gray hair reveal that he is no longer young in years. His face is almost free from wrinkles.

"We are progressing, progressing," he said, when informed that his retreat had been invaded for the purpose of getting information concerning the latest and the greatest of his inventions, the one which is being eagerly awaited and which very few have had a chance to see. That is the combination of the phonograph with the kinetoscope, the contrivance to which Mr. Edison applied the term kinetograph on this occasion.

"The object of this machine," he said, "is to afford the spectator two inventions in one. That is, two senses are simultaneously appealed to. Suppose, we will say, an opera is to be reproduced. The phonograph already repeats the sound. The kinetoscope affords a view of the movements. Now, however, we wish to combine the two, and combine them far more effectively than ever their distinct elements have heretofore been rendered by separate instruments."

"Thus, if one wished to hear and see the concert or the opera, it would only be necessary to sit down at home, look upon a screen and see the performance, reproduced exactly in every movement and at the same time, the voices of the players and singers, the music of the orchestra, the various sounds that accompany a performance of this sort, will be reproduced exactly. The end attained is a perfect illusion. One really hears and sees the play, because the conditions precedent to the suitable impressions upon eye and ear are obtained."

Mr. Edison's hearing has improved very much in the past year, owing, perhaps, to his perfect physical condition. He spoke well and distinctly and is never, apparently, as much impressed with the wonders he performs as are his workmen.

He was asked if ordinary sights and scenes, the Pope in the Vatican, or a speech at a mass meeting, could be as effectively handled.

"Far more easily," he replied, "that is the least difficult part of the problem. Even now, the spectator could be treated to perfect reproduction of Gladstone making a speech to the

House of Commons. This would be shown of life size and, so far as the spectator is concerned, would be the real scene. For every word, every gesture of the grand old man, the gestures of each spectator and the sounds made on the occasion would be reproduced exactly. And, of course, 200 years hence, the same scene would be thrown up at will—a new way of recording history, you see."

"Is not the mechanism very complicated?"

"Not more so than that of the kinetoscope and the phonograph, and the difficulty now in the way is the adjustment of photographic apparatus in minute fractions of a second. Certain flashes of motion are caught in 10-49ths of a second. But in preserving them and in their reproduction, one or two obstacles are met with. The negative itself is very small—not much larger than your thumb nail. In reproducing these postures and movements great care is necessary in maintaining proportions."

To throw upon a screen a series of movements, each taking up an interval of time, not longer, perhaps, than a fifth part of 10-49ths of a second, and at the same time to insure fidelity, is the problem. As it is, there are occasional distortions. If a movement in the reproduction be not, so to speak, run out consecutively—that is, if, looked upon as a change of posture it be not accurately photographed, although it occupied but the 200th part of a second, the effect will be distorted. Hence the extreme nicety required in the mechanism."

It would, of course, be out of place here to enter into any detail connected with the operation and the mechanism of the phonograph. That invention has been explained over and over again. So, too, of the kinetoscope. But it may be stated that the combination of the two involves instantaneous action in harmony of two; this is, on the surface, an easy matter. The principle upon which it is effected, theoretically, is also well known. In fact, the general mind has been pretty well saturated with information on the subject. But as for the mechanical difficulty with which Mr. Edison is contending, it has remained unthought of. So the great discovery lingers on the threshold of its accomplishment in fact. But it will not linger long. Electricity knows no Lucy.

"Perhaps by tomorrow," said Mr. Edison, "we may perfect the machinery. Perhaps we shall have to work another year upon it. In truth, it is a very simple matter. It consists merely in adjusting thoroughly understood principles to a new contrivance made up of old contrivances. Were it not that we have such infinitely small sections of time to deal with, there would be no difficulty at all. But, as I have told you, we know how to overcome the difficulty. We simply lack patience."

"Does it make any difference of what nature the representation to be produced is?"

"At present, yes. In time, however, it will not. The reproduction of such sights and sounds as those enacted in the opening of Congress would be very easy. The spectator could sit down in his drawing-room or office and have the whole scene enacted in front of him. Nor would any special apparatus or any particular preparation be necessary. But, with a grand opera, it would be more difficult. One must exercise great care in securing the ensemble. There are myriads of details connected with the tones, the gestures, the dress, the colors, the light, and such like. It is proposed to give these impressions with comparative exactness, it is intended to be perfectly faithful to the original. It never does to perpetrate a half performance. It is disappointing and apt to shake confidence in an invention. For myself, I have no doubt whatever of the outcome. Before many years we will have grand opera in every little village at 10 cents a head. And the very highest grand opera—you will hear and see Patti in your own parlor. She will be heard a hundred years after her death, and seen, and will move and thrill her auditors in 3010. The President's inauguration can be treated in the same way. Pope Leo and his cardinals may be seen and heard for unnumbered centuries to come."

Mr. Edison's blue eyes lighted up with enthusiasm.

"What a way to write history," he repeated, echoing the words of his questioner. "Well, I had never thought of that particularly, and yet it is a way to write it, isn't it? How much more effectively one could convey

to future generations an idea of the President than words and writing could. In fact, written records would cease to have their historical importance."

Another use for the invention, namely, the sentimental one, would not occur to Mr. Edison either. Yet the machine ought to be welcomed by lovers—it insures the perpetual presence of the adored object. Has not the poet said:

Could I but hear her voice,
Could I but see her face,
Why do the gods deny the gifts
Mortals long for most?

But Mr. Edison was not yet born in Camoen's time.

A Gay Procession.

By general usage and from its annual occurrence over so many years Anniversary Day has grown to be a peculiar and a distinctive ceremony in Brooklyn. No other city in the length and breadth of the Union has anything like it. It commemorates the founding of the Brooklyn Sunday School Union, which binds together all the evangelical churches of the town. What it has accomplished, save in the way of fraternalism and this annual showing, is not great, but children's day alone is sufficient to mark it as a success.

A parade in which nearly 7,000 children march is a picturesque sight. Each Sabbath school class has a banner of its own, a gayly-colored piece of silk with gilded letters. The big boys of the schools are pressed into this service, and they are only two glad of the burden. Streamers ending in tassels hang from these gay flags, and they are held by tiny girls. The color of the parade is in cheeks, banners, sashes and ribbons. There are miles and miles of white frocks. It is a day of white—Swiss muslin and dimity. Hats are white too. If the May day is ideal in weather, the classes of girls march along, hardly broken by pinks, blues or yellow. Behind them the coming masculine generation looks somber. But the girls are always in the great majority. Each class's teacher is at the side of her line, like a marshal or adjutant. It is only in parades that the teachers attempt to outdo each other. Whether the sun pours down or not, every parasol is up, bewildering combinations of lace and color.

The Omnipotence of Napoleon.

Was it possible for Napoleon to win the battle? The answer in the negative. Why? On account of Wellington? On account of Blucher? No; on account of God. Bonaparte, victor at Waterloo, would not harmonize with the law of the nineteenth century. Another series of facts was preparing, in which Napoleon no longer had a place. The ill-will of events had been displayed long before. It was time for this vast man to fall. His excessive weight in human destiny disturbed the balance. This individual alone was of more account than the universal group. Such plethoras of human vitality concentrated in a single head—the world mounting to one man's brain—would be fatal to civilization if they endured. The moment had come for the incorruptible and supreme equity to reflect; and it is probable that the principles and elements on which the regular gravitation of the moral order as well as of the material order depend, had rebelled. Steaming blood, overcrowded graveyards, mothers in tears, are formidable pleaders. When the earth suffers from an excessive burden there are mysterious groans from the shadows, which the abyss hears. Napoleon had been denounced in the infanzita, and his fall was decided. He troubled God. Waterloo is not a battle, but a change of front on the part of the universe.—[Victor Hugo.]

The Value of Education.

A little girl, 4 years old, happened to be sitting upon the ice during the recent frost, when she suddenly fell heavily, and was evidently badly hurt. At the sound of her sobs a friend rushed to her assistance and caught her in her arms. "You poor little thing, how did you fall?" she asked sympathetically. The mite raised her head and replied, between her sobs, "Vertically." She had been educated in the newest mode.

A Cure for Sleeplessness.

Prof. Blackie was once staying at Tynemouth. Before he retired to rest he informed his host that he had two requests to make—first, that they allow his bedroom door to stand wide open; and, secondly, that they were not to be alarmed should they hear him singing in the middle of the night, for when he could not fall asleep he wooed Somnus with a song. Accordingly, at 2 o'clock in the morning, the old professor was heard singing in strong, cheery tones, "Scots wha hae wi' Wallace bled," like a veritable Highlander on the warpath. And again, in the stillness of the night, he sang out—"Green Grow the Rashies, O." The last lines were sung in more subdued tones, and sleep came to him ere he had finished his song.

Motto for the Week:

A great mind is above injury, injustice, pain, and mockery. A great mind would be invulnerable if it did not suffer through compassion.—[La Bruyere.]

Popularity of the Bicycle.

Some definite idea of the growth of the bicycle business in this country may be gained from the fact that whereas the total number of bicycle manufactories in the United States was but six in 1885, with an output of only 11,000 wheels, and in 1890 but 17, with an output of 40,000, at the present time there are 126 factories, which will make an aggregate of nearly or quite 500,000 machines this year. The increase in the last five years has been nothing short of marvelous, and it is probable that the next five years will see a very great advance upon the present product of these fast-multiplying concerns. And now that bicycling is becoming so much more general than hitherto there is added reason why we should improve our country roads. If road reform was necessary five years ago, it is far more necessary and desirable now.—[Providence Journal.]

The Charm in Scotch Words.

I wonder if persons who can write Scotch are sufficiently aware of the great literary advantage they have over writers who are not born to that ability. It is no credit to them that they can do it. I never heard of any one who learned by artificial means to write Scotch. Scotch writers do it, and no one else. It has long been obvious that the proportion of good writers to the whole Scotch population was exceedingly large; but I do not remember that it has ever been pointed out how much easier for a Scotchman to be a good writer than another, because of innate command of the Scotch tongue. There are such delightful words in that language; words that sing on the printed page wherever their employer happens to drop them in; words that rustle; words that skirt, and words that clash and thump.—[April Scribner.]

The "Tipping" Nuisance.

A Paris journal, discoursing of tips to servants in private houses both in England and on the Continent, says that it is difficult for one to form an idea of the enormous sums in the way of gratuities absorbed by domestics employed in the homes of the English aristocracy. It gives the amount realized annually by the butler of a rich resident in Grosvenor Square, London. This individual receives in tips from visitors, the sum of £1,000, or \$5,000, in addition to his regular pay. The Prince of Wales, who is naturally a heavy sufferer from exactions of this kind, has undertaken, so far as Sandringham House is concerned, to abolish the custom. He has given orders, according to the French journal, that any servant who accepts a gratuity from a visitor shall be promptly dismissed. The Duchesses of Rutland and Portland have decided to pursue a similar course. This habit of tipping servants employed in private houses, has, of course, been largely imitated and abused in this country. In the matter of a visit to a private house or stay in a hotel, in the way of the figuratively extended palms, there is little to choose. Labouchere, who has written on this subject in Truth, is of the opinion that it is more economical to stop at the most expensive hotel than to accept hospitality at an English country or town house. He refers not only to the gratuities expected by the servants, but to other exactions which are extremely irksome and annoying if a hotel should, in addition to its regular charges, insert in the bill a stated amount for tips to be distributed pro rata by the proprietor.

Paris' Model Streets.

London has not come out more brilliantly this last winter than at any other season of equal severity with regard to the comfort and convenience of her streets, notwithstanding the added taxation which the present administration has thought fit to lay on the citizens. Superior as the immense metropolis is on many points to other large and wealthy cities it has always remained lamentably inferior to Paris in matters of edility. The French capital is amply justified when it claims to be at once the cleanest and best groomed of towns. The municipality grudges no expense to maintain the purity and elegance of its thoroughfares, and the result of the outlay is eminently satisfactory. During the sharp frosts and heavy snowfalls of February and January the sum of 7,000,000 francs was cheerfully spent on the toilet of Paris, on her scavenging and the maintenance of the streets in proper order. The surface to be thus disencumbered of all temporary obstacles has been estimated at 15,562,000 square meters, and necessitates the daily employment of an army of 3,000 sweepers. These are enrolled in 149 brigades, or working squadrons. The central one has a chief, a deputy

chief, and 20 to 25 subordinates, both male and female. In the annexed district zone the brigades consist of a chief, four experienced road laborers, and fifteen to twenty sweepers of both sexes. The latter, except under stress of weather, are only on duty half a day, from 4 to 11 a.m. Able-bodied men are paid 34 centimes per hour; women, children, and old men 27 centimes for the same time. The monthly salary of the chiefs is 120 to 125 francs, that of the foremen uniformly 105 francs, out of which they are bound to pay every month 5 francs into a savings bank as a reserve fund for the time when their engagement ceases with the return of milder weather.

Had the Last Say.

Bismarck Decided Whether the Duke of Argyll's Son Should Wed His Choice.

Apropos of the marriage of the third son of the Duke of Argyll, says Kate Field's Washington, it is related that when his affections became attached to an untitled woman he felt bound to ask the old gentleman's consent. The Duke answered that personally he had no objection to the match, but in view of the fact that his eldest son had espoused a daughter of the Queen, he thought it right to inquire her Majesty's pleasure on the subject before expressing his formal approval. Her Majesty, thus appealed to, observed that since the death of the Prince Consort she had been in the habit of consulting the Duke of Saxe-Coburg on all family affairs. The matter was therefore referred to Duke Ernest, who replied that since the unification of Germany he had made it a rule to ask for the Emperor's opinion on all important questions. The case now came before the Kaiser, who decided that, as a constitutional sovereign, he was bound to ascertain the views of his Prime Minister. Happily for the now anxious pair of lovers, the "Iron Chancellor," who was then in office, had no wish to consult anybody and decided that the marriage might take place.

Beginning his life very poor, the Duke of Argyll will probably end it very rich. His uncle had left the estates terribly "dipped," and then there were jointures to still further deplete it. In fact, at one time he contemplated selling Roseneath, his beautiful historic seat in Dumfriesshire; but his slender means led to saving habits, which grew steadily upon him, and he has all his life lived so quietly and unostentatiously that he has gradually cleared away debts and now enjoys a splendid income, a large portion of which he saves. His eldest son's wife, the Princess, receives \$30,000 a year from Parliament, besides having a marriage portion in cash of \$150,000. The next son became a partner in Coutt's banking-house. The third married a Manchester lady of fortune, and bought an interest in a stockbroking house which does a great deal of business for the Rothschilds. A fourth entered Parliament and the fifth the navy. One daughter was married to the eldest son of the Duke of Northumberland, with over a million a year. The Duke himself has for many years been in receipt of large public pay.

A Triumph of Faith.

The 55th report of the new Orphan Houses and the Scriptural Knowledge Institution for Home and Abroad has recently been given to the public by their founder, the venerable George Muller, of Bristol. It is full of interest and of inspiration for Christian workers. With the famous Deaconesses' Institution at Kaiserwerth, the Franke Homes at Halle, the Rauhe Haus at Horn near Hamburg, and Dr. Barnardo's Homes in London, these orphanages of George Muller deserve to be classed. They are among the most remarkable in the world. We know of no place in the south of England so well worth a visit. And yet this great undertaking began in a rented house, furnished by Mr. Muller, and into which he received at first 30 children. Between April, 1836, and May, 1894, there have been 9,176 orphans under the care of these homes, and nearly \$5,000,000 have been contributed to the cause. Mr. Muller says, very emphatically: "Without anyone having been applied to for anything by me, as the result of prayer to God over £902,532 have been given since the commencement of the work." In addition to this over £370,000 have been contributed for other purposes. Mr. Muller is now a very old man. He will not be able to continue his work much longer, but when he has gone it will remain an enduring memorial to his faith and consecration. In the following paragraph we give a resume of this report:

"The total amount of money received by prayer and faith for the various objects of the institution since March 5, 1894, has been over £1,341,826; 120,438 persons have been taught in the schools supported by the funds of the institution; 268,110

ASK FOR INFORMATION.

Persons who have sufficient interest in knowing what the experience of life insurance companies that have kept abstainers and non-abstainers in separate classes has been, to send a postal card to the manager of the Temperance and General Life Assurance Company at Toronto, Ont., stating their desire to get this information can have it by a return mail.

Bibles, 1,409,842 New Testaments, 21,092 copies of the Book of Psalms, and 217,599 other portions of the Word of God in several languages have likewise been circulated since the foundation of the institution; 103,335-249 books, pamphlets, and tracts in several languages have likewise been circulated from the commencement of the institution. From its earliest days missionaries have also been assisted from its funds, and for more than 40 years a considerable number of them. On this object and on the mission schools there was expended during the past year £3,355, and from the commencement £245,109; 9,076 orphans have been under our care, and five large houses, at an expense of £115,000, have been erected and fitted up for the accommodation of 2,050 orphans at a time and 112 helpers. With regard to the spiritual result of the operations of the Scriptural Knowledge Institution for Home and Abroad, we have the fullest reason to believe that many tens of thousands of souls have been blessed, but the day of the Lord alone will fully reveal all the good which, through his wondrous condescension, has been accomplished within the last 60 years by means of the institution."

HEALTH AND HAPPINESS.

How It Was Found by a Lanark County Lady.

She Had Suffered for Years from Weakness and Pains in the Back—Solation Complicated the Trouble and Added to Her Misery—Her Health Almost Miraculously Restored.

(From Brockville Recorder.)
On a prosperous farm in the township of Montague, Lanark county, live Mr. and Mrs. Joseph Wood, esteemed by all who know them. Mrs. Wood was born in the village of Merrickville, and spent her whole life there until her marriage, and her many friends are congratulating her on her recovery to health and strength after years of pain and suffering. When the correspondent of the Recorder called at the Wood home, Mrs. Wood, although now not looking the least like an invalid, said that since girlhood and until recently she was troubled with a weak back, which gave her great pain at times. As she grew older the weakness and pain increased, and for nearly twenty years she was never free from it. About a year ago her misery was increased by an attack of sciatica, and this with her back trouble forced her to take to bed, where she remained a helpless invalid for over four months. Different doctors attended her, and she tried numerous remedies said to be a cure for her trouble, but despite all she continued to grow weaker. She was advised to try Dr. Williams' Pink Pills, but she had dosed herself with so many medicines that her faith in the healing virtues of anything was about gone, and she had fully made up her mind that her trouble was incurable. At last a friend urged her so strongly that she consented to give the Pink Pills a trial. Before the first box was all used she felt a slight improvement, which determined her to continue this treatment. From that out she steadily improved, and was soon able to be up and about the house. A further use of the Pink Pills drove away every vestige of the pains which had so long afflicted her, and she found herself again enjoying the blessing of perfect health. Eight months have passed since she ceased using the Pink Pills, and at that time she has been entirely free from pain or weakness, and says she is confident no other medicine could have performed the wonder Dr. Williams' Pink Pills have done for her. "I feel happy not only because I am now free from pain or ache, but because if my old trouble should return at any time I know to what remedy to look for a release."

Dr. Williams' Pink Pills are especially valuable to women. They build up the blood, restore the nerves, and eradicate those troubles which make the lives of so many women, old and young, a burden. Dizziness, palpitation of the heart, nervous headache and nervous prostration speedily yield to this wonderful medicine. They are sold only in boxes, the trade mark and wrapper printed in red ink, at 50 cents a box, or six boxes for \$2.50, and may be had of druggists or direct by mail from Dr. Williams' Medicine Company, Brockville, Ont.

A young minister, unexpectedly called upon to address a Sunday school, asked, to gain time, "Children, what shall I speak about?" A little girl on the front seat, who had herself committed to memory several declamations, held up her hand and in a shrill voice inquired, "What do you know?"

"I didn't know you could read, Br'er Downey." Downey (apparently much interested in his paper)—"Oh, yes, I've read eber since I wuz er boy." "Den how comes it you're readin' dat paper upside down?" "I always read dat way, den I see gets at de bottom ob de fac's widout habing ter read down de whole column."

"Here's an account of a hen which laid three eggs at once, and then died," remarked Mrs. Sumway. "From over-eggsetting, probably," commented her husband.