

BRAINY PAUPERS.

Brilliant Inventors Who Reaped Pitiful Rewards.

DIED IN POVERTY AND WANT.

Some Men of Genius Who Were Deemed to End Their Days in Obscurity, While Their Fruitful Ideas Made Millions and Fame For Others.

Now and again a man is born whose brain fairly bubbles with inventive genius. New ideas stream from him, and all branches of science are mastered with hardly an effort.

Such was Frederic William Martin, one of those many brilliant Italians who left their native land to seek fortune in a foreign country.

Martin came to England, and his name is most familiar from the Martin-Henry rifle, the breechblock of which was one of his numerous inventions.

It is an irony of fate that Martin's name should go down to posterity solely through a warlike invention which he himself thought little of when his greatest work was done in the cause of peace, for Martin was the discoverer of the process for converting basic slag into manure, a discovery which has put millions into the pockets of German manufacturers, but from which he himself, it is stated, never reaped a penny.

The fluted rib for umbrellas, a new process for the extraction of nickel from its ore, a new development of platinum—immensely important in electric work—and a brilliant invention for the reduction of gold ore, these are only a few of Martin's discoveries. And yet he was so lacking in business capacity that in spite of his extraordinary output of valuable ideas he died at Glasgow in 1903 a comparatively poor and obscure man, while dozens of others have been made richer by his genius.

In 1860 the chemist Lenoir patented a motor driven by an explosive mixture of air and gas. He used electric ignition obtained from a battery and a Ruhmkorff coil, actuating a sparking plug very similar to that in use in the modern motor. The system of valves by means of which the suction of the piston drew in the charge of gas for the next explosion was also designed by Lenoir.

In 1862 he actually produced a car which, if crude, was similar in all respects to that in use today, save that he employed coal gas instead of petrol, and this he actually drove himself through the streets of Paris.

Yet for reasons similar to those which caused the failure of Martin he never received the reward of his genius, and it was left for Daimler, nearly thirty years later, to produce the first of the practicable automobiles.

Lenoir died in 1900, poor and unknown. Three years later, in 1903, the life of George Shergold came to an end in Gloucester workhouse. Shergold, originally a shoemaker, was the inventor of the safety bicycle. He built a machine of this order in the year 1876, the front wheel of which was twenty-seven inches and the rear wheel some thirty-one inches in diameter.

In 1900, when it first became generally known that the man whose invention had made millions for others was as poor as when he had cobbled shoes, a public subscription was raised, and for some time an allowance of 5 shillings a week was made to Shergold. But the funds became exhausted, and poor Shergold ended his life in the workhouse.

How many people have ever even heard of Scheele? Yet this poor Swedish chemist was perhaps the greatest discoverer of facts that the world has ever known.

We always hear in England that Priestley was the discoverer of oxygen. Yet Scheele made this most important of all chemical discoveries simultaneously with Priestley. And it was Scheele who discovered chlorine gas. Chlorine is perhaps the most important of all gases in commercial chemistry. It is the great bleacher that gives us white linen or white straw hats. It is also the best disinfectant known. It is essential to the manufacture of the great pain killer, chloroform, and it is used extensively for the extraction of gold from its ores.

Chlorine's value to the world has been incalculable, yet Scheele, the man who discovered it, lived hungry and died a pauper. Professor Gore died a comparatively poor man, yet Gore was the inventor of the modern safety match, of the method of electroplating and of many other processes which have put millions into the pockets of manufacturers. Gore's book, "Electrometallurgy," published in 1870, is still a standard work on the subject.—London Answers.

Value of Cinders.

A few years ago great heaps of cinders piled up, often being dumped into low places where new earth was needed. Manufacturing concerns were glad to get rid of the accumulations. But now the cinders are in great demand for use in the foundation for cement and concrete work. They form a perfect drainage material, and it has been found that frost acts very lightly on them. Furthermore, concrete work in which cinders are used is said to be of extreme durability. When cinders are ground and mixed with cement the mass becomes very hard.

The road to success is as easy as the road to ruin.—Benjamin Franklin.

THEIR LAST HANDCLASP.

The Final Meeting of Charles A. Dana and Jacob A. Riis.

I like to think of my last meeting with Charles A. Dana, the "old chief," as he was always called in the office. In all the years I was on the Sun I do not think I had spoken with him a half dozen times. When he wanted anything of me personally his orders were very brief and to the point. It was generally something—a report to be digested or the story of some social experiment—which showed me that in his heart he was faithful to his early love. He had been in his youth, as everybody knows, an enthusiastic reformer, a member of the Brook Farm community. But if he thought I saw he let no sign escape him. He hated shams. Perhaps I was on trial all the time. If so I believe that he meant to tell me in that last handshake that he had not found me wanting. It was on the stairs in the Sun office that we met. I was going up; he was coming down—going home to die. He knew it. In me there was no suspicion of the truth when I came upon him at the turn of the stairs, stumbling along in a way very unlike the usual springy step of the old chief. I hardly knew him when he passed, but as he turned and held out his hand I saw that it was Mr. Dana, looking somehow older than I had ever seen him and changed. I took off my hat, and we shook hands.

"Well," he said, "have you reformed everything to suit you, straightened out every kink in town?" "Pretty nearly," I said, falling into his tone of banter, "all except the Sun office. That is left yet and as bad as ever."

"Ha!" he laughed. "You come on. We are ready for you. Come right along!" And with another hearty handshake he was gone. He never saw the Sun office again.

It was the only time he had ever held out his hand to me after that first meeting of ours when I was a lonely lad, nearly thirty years before. That time there was a dollar in his hand, and I turned it into a dollar in mine. I turned it into a dollar in mine. I turned it into a dollar in mine. I turned it into a dollar in mine.

THE LAND OF CHEESE.

Switzerland Has the Proud Honor of Deserving This Title.

Cheese, although an important product of our dairy farms and a reasonably popular article of diet in the United States, has never held quite the position with us given it in some European countries.

English and Germans are far greater consumers of cheese than we, while both are surpassed by Norwegians. But above all Switzerland is the land of cheese. On more than one occasion travelers have dwelt upon the functions, social and sentimental as well as astronomical, performed by the cheese of Zermatt—that remarkable cheese which is so hard that it has to be scraped with a knife or cleft with an ax.

It is said by one authority that the patriotic rank of a Swiss family in that part of the confederation is estimated by the age of its cheese, and the greater the respect due to or the affection for a guest the older is the cheese set before him. There are said to be families who own cheese that dates back to the time of the first French revolution, which is served only on solemn occasions, such as christenings, weddings or funerals.

There are in each pantry at least as many cheeses as there are boys and girls in the family, for at the birth of every child a cheese is made, which is named after the newcomer and is first cut into on his or her wedding day, on which festive occasion all guests partake of a piece of the groom's and the bride's cheeses in order to secure for them all earthly thrift and happiness. The rest is served as a token of friendly souvenir and heartfelt mourning after the tomb has closed over his or her mundane career.—New York Tribune.

New Mexico's Early Name.

What a pity the name "New Mexico" cannot be changed to "Cibola." (Alabama, Arizona, Arkansas, California—Cibola! How well these would sound in the already musical roll call of the states! Such was the primeval name, and the country was known as the "Land of the Seven Golden Cities of Cibola" after Vaca brought the first reports of its marvels into Mexico. The sensitive imaginations of the Spaniards, whetted by the tales told by Vaca and inspired to new flights by an occasional Indian's romancing, pictured seven noble cities, each as large and as beautiful as the City of Mexico. Fancy painted mirages wherein were gold and silver and rare gems without limit.—D. H. MacAdam in Metropolitan Magazine.

Enlightening the Minister.

"We are going to have pie for dinner," said Bobby to the minister. "Indeed!" laughed the clergyman, amused at the little boy's artlessness. "And what kind of pie, Bobby?" "It's a new kind. Ma was talking this morning about pa bringing you to dinner so often, and pa said he didn't care what she thought, and ma said she'd make him eat humble pie before the day was over, and I suppose we're going to have it for dinner."

In the Future.

Magistrate—What! Drunk again? When you were here last time you promised to sign the pledge. Prisoner—Well, I'm going to, yer honor. I've been takin' lessons, but I haven't made much progress yet.—Toledo Blade.

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Two-quart Side-handled Baker, regular price 25c, free with each 4-quart Covered Porridge Pot. Price of pot is only **75c**

One Cup and Saucer, regular price 25c, free with each 3-quart Coffee Pot. The price of the Coffee Pot is only **75c**

Two-Quart Deep Stew Pan, regular price 25c, free with each 14-quart Dish Pan. The price of the Dish Pan is only **90c**

Cereal Cooker Inset, regular price 75c, free with each No. 180 Seamless Pattern Tea Kettle. The price of the Kettle is only **\$1.25**

Two-quart Covered Bucket, regular price 30c, free with 10-quart Seamless Water Pail. Price of Water Pail is only **90c**

Three-quart Deep Mixing Bowl, regular price 25c, free with each 6-qt. Crown Sauce Pan. Price of Sauce Pan is only **95c**

Three-quart Lip Sauce Pan, regular price 35c, free with each 2-quart Seamless Cereal Cooker. Price of Cooker is only **90c**

No. 28 Wash Basin, regular price 25c each, free with each 17-quart Dish Pan. Price of Dish Pan is only **\$1.10**

Three-quart Lip Preserve Kettle, regular price 35c, free with each 3-in-1 four-quart combination. Price of Combination is only **\$1.00**

Four-quart Deep Pudding Pan, regular price 25c, free with each 6-quart Covered Windsor Kettle. Price of Kettle is only **95c**

Two-quart Windsor Dipper, regular price 30c, free with each 12-quart Seamless Water Pail. Price of water pail is only **\$1.10**

Three-quart Side Handled Baker, regular price 35c, free with each 6-quart Preserve Kettle. Price of Preserve Kettle is only **75c**

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VALUE OF SYSTEM.

Whether In Working or Thinking It Helps on to Success.

Working or thinking without system enfolds the mind and leaves the mental faculties in a clogged condition, so that they do not work sharply. The mind must be kept clear and clean for the present problem, so that it may seize and grasp with all its might the thing it is attempting to accomplish.

There is only one best way to learn how to act. That way is the way of system. Systematize your thoughts, your energies, your abilities. Learn early in life to do this, and it will prove the master habit that wins success.

Systemless men are always surprised that the heads of great enterprises can find so much time for social life, for hobbies, for travel. They cannot understand it at all. They do not realize that a man of great organizing ability, with a splendid system, can do more effective business in a single hour at his office than a systemless man can accomplish in twelve. It is not the number of hours, but the effectiveness of the system, that tells.

One of the advantages of a college course is that it trains the mind to work by system. Whether he likes it or not, the student is forced to concentrate his mind when the time comes, no matter what his mood or how he feels. Four years of training in this should put the mind into working order. It should tune the intellect so that all the strings will be in harmony. A good college education should train the mind to think concisely, deeply, effectively at will.—Orison Swett Marden in Success Magazine.

ANIMALS IN A FRENZY.

There's Danger Afoot When Captive Wild Beasts "Go Bad."

What those who have charge of wild animals in captivity, and especially trainers, dread most among the large beasts is that inexplicable change of temperament on the part of the animal known in the parlance of the menagerie as "going bad."

Lions are likely to go bad about the tenth year of life; tigers, two or three years earlier. The male tiger is the dread of the profession when he reaches this condition, because he is more likely to go into a frenzy without warning, and once gone bad nothing will satisfy him but murder.

He will leap for any man within reach, and when once his teeth are on the bone nothing but fire will make him relinquish it, and not always that. This "going bad" may come in the nature of a sudden attack or it may develop slowly and be counteracted if taken in time. An old trainer can usually detect the symptoms of this curious ailment. It seems to be in the nature of a disease, and other animals recognize it and shun the affected one.

When its progress is apparent the danger is not great. All that is required then is a level head and the wisdom to refrain from further interference with the animal. Sometimes this bad temper will last but a short time, and again it will become the permanent condition of the animal. In that case he is sent to the lonely cage to spend the rest of his life in comparative obscurity, disturbed merely by the passing crowd and his daily meals.—Pearson's Weekly.

Not Worth Bothering About.

Customer—Confound you, that's a piece of my ear! Barber—Only a small bit, sir; not sufficient to affect the hearing!—London Opinion.

Look not mournfully into the past; it comes not back again. Wisely im prove the present.

PRESSURE OF AIR.

It May Readily Turn the Thermometer Into a Fibber.

THE BOILING WATER POINT.

On the Scale This Is Marked at 212 Degrees, but Under Certain Conditions It May Be Several Hundred Degrees—The Critical Temperature.

On an ordinary Fahrenheit thermometer there is written opposite 212 degrees "Boiling point of water" and opposite 32 degrees "Freezing point of water." Neither of these is correct except for a certain condition of the atmosphere, and that is when it gives on the barometer about thirty inches, or fifteen pounds pressure to the square inch. This is the ordinary pressure at what is known as sea level, and to this all thermometers are calibrated. In a mountainous region the pressure is hardly ever so much as fifteen pounds, and water boils at sometimes as low as 200 degrees.

If water is boiled in a diving bell, where the pressure is forty or fifty pounds a square inch, its temperature will be several hundred degrees instead of 212. If water is boiling in a near vacuum the temperature is so small that the hand thrust into the water would actually feel cold.

What has been said about the boiling point applies to some extent to the freezing point, but here it differs for different materials, whereas the remarks about the boiling point of water apply to the boiling points of all liquids.

Some substances when they freeze become larger, while others become smaller. On this depends the freezing point at different pressures of atmosphere. Water expands on freezing; so do type metal and some other things. All other substances become smaller on freezing. Water pipes burst when the water freezes. Coins of gold and silver are stamped instead of being molded, for the metals grow smaller on freezing or solidifying, and consequently the coin would be wobbly.

It has been found that the things that expand on solidifying, as water, freeze at a lower temperature when the pressure is increased, while the others freeze at a higher. When a substance that expands freezes under higher pressure than usual it has to exert more force to shove the pressure away, and consequently has to use up more of its heat energy, thus losing more heat and becoming colder.

Take the substance that contracts when it solidifies. The pressure will help it to get smaller, and consequently the greater the pressure the less heat it has to lose on attaining the solid state, so it will freeze at higher temperature. If the pressure is great enough it may freeze or solidify at a thousand degrees temperature, which is high enough to change most substances to vapor under ordinary atmospheric pressure.

This is one of the reasons advanced to prove that the interior of the earth is solid, for the assumption is that the core is made up of substances that contract when freezing, and there is, of course, an enormous pressure a few hundreds of miles below the surface.

In regard to the boiling points of liquids, there is an upper limit to the point at which a thing boils—that is, changes to the state of vapor. It is called the critical temperature. No matter how great a pressure exists on a substance, if it is at a temperature greater than its critical it will change to vapor anyhow.

The ignorance of this point held back the making of liquefied gases—such as air, carbon dioxide, etc.—for many years. The experimenters tried

to liquefy gases at ordinary temperatures by enormous pressures, whereas if they had just cooled the gases below their critical temperatures before applying the pressure liquefaction would have ensued immediately.

This is the method employed today in making liquid air. The air is compressed at first and then allowed to issue from a small orifice, thus expanding and cooling, is then pumped back and compressed by the pump, allowed to go through the orifice again, thus cooling still more, until at last it is below the critical temperature, when the compression caused by the pump liquefies it.—Lawrence Hodges in Chicago Record-Herald.

In Trouble.

"Yes," he said regretfully, "I'm in a tight corner. My sweetheart is wild on the subject of germs and microbes, and she insists that I must choose between her and my mustache. I'm to lose one or the other."

"Lose the mustache, my boy."

"That's just the trouble. If you ever saw me without it you'd pity my haunting fear that when it's gone I'll lose the girl too."

The Simple Answer.

A society man at a luncheon said of a well known suffragist: "She accomplishes a great deal, but some of her methods are not quite fair. A man once inquired of her husband: 'Do you give your wife an allowance, or does she ask for money when she wants it?'"

"Both," was the simple answer."

In Doubt.

"Were you ever up before me?" asked a magistrate. "Sure, I don't know, yer anner. What time does your anner get up?"—London Answers.

PAGANINI HELPED HER.

The Great Violinist Didn't Play the Miser on This Occasion.

The following story places Paganini in a better light than this musical miser was accustomed to appear. And really one is led to wonder which is the true Paganini—the miser or the kind artist giving his talent to assist a poor servant girl. One morning the maid who waited on him in Paris came to him, weeping, and told how her lover had been conscripted and sent away to the war, and she, of course, was too poor to buy a substitute for him.

Paganini resolved to aid the girl and took a unique way to do it. He procured a wooden shoe and so fashioned it that it could be strung up and played like a fiddle. Then he advertised that he would give a concert and play five pieces on the violin and five on a wooden shoe. Of course this strange announcement drew a good house. The violinist had given the girl tickets to the concert, and after it was over he went to her, and pouring 20,000 francs into her lap, he told her that she could now purchase a substitute for her sweetheart and with the remainder set up housekeeping. He also gave her the wooden shoe that had brought her such good fortune and told her to sell it. Of course this curious instrument brought her a goodly sum, which she added to the amount which was to bring her domestic happiness.—W. Francis Gates in "Anecdotes of Great Musicians."

Wanted Regular Work.

A farm hand had worked in the field from dawn till darkness, doing the chores by lantern light. "I'm going to quit," he said to the farmer at the end of the month. "You promised me a steady job."

"Well, haven't you got one?" was the astonished reply.

"No," said the man; "there are three or four hours every night that I don't have anything to do and fool my time away sleeping."—Success Magazine.

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