

PROGRESS IN PRINTING

ONE OF THE MOST POTENT FACTORS OF CIVILIZATION.

The Origin of the Art is Shrouded in Mystery—First Practiced in the Far East—The First Movable Type Made in 1426—Improved Modern Methods.

The origin of the art of printing is shrouded in mystery. It is impossible to say when or by whom it was first used, even in its crudest form. Marco Polo found the art being practiced in the Far East, and it is on record that in the remotest antiquity the Orientals used stamps, with colored inks, on their documents of various kinds. A similar sort of printing Captain Cook found common in the Sandwich Islands, and he brought home with him from one of the Leward Islands a stamp with which the natives printed designs on the borders of their clothes. We have records that similar work was done in Saracenic Sicily in the eleventh century, on coverlets and vestments, in several colors. It is claimed that the reason why the ancients did not fashion some mechanical means of preserving their poems, scientific memoranda and ecclesiastical works was that the manuscript scribes were slaves, and that their maintenance was only a matter of about five cents a day, so the inventive minds of the age saw no possible profit in any attempt to multiply the few books, or scrolls, called for, and as these manuscript scrolls of papyrus or parchment were only sought by the wealthy, the demand was easily supplied by the artisans of the pen and brush.

But as civilization began to advance and a thirst for knowledge became more general and the distribution of the thoughts of the brightest minds demanded some ready means of spreading broadcast the teachings of the masters. It was no longer possible, as in the days of the Greeks, to satisfy the longings of the people by hearing read in the Athenian theatre the poems of Aeschylus, Sophocles and Euripides. The thousands in Europe beyond the reach of the theatre were seeking for that culture and an understanding of the great forces of nature which could only come to them through the researches of the great minds of the age.

In 1426 Laurens Koster, of Haarlem, conceived the idea of cutting with a knife alphabets of separate movable type, which, when set in rows, formed words and sentences, and when bound together and placed on the bed of the rude presses of the period could be inked and impressions pulled from them much in the same manner as is now done on the ordinary Hoe hand press. Another method practiced, as is shown in an illustration in "Paphos History," was productive of much better results. It was not unlike the present way of taking proofs of galley's of type with a roller. By this method after the form was inked an ordinary wooden cylinder, possibly covered with some soft cloth, was passed over the type or wood blocks, and a printed sheet was the result. From 1426 to 1900 is a long jump, but skilled labor and busy brains have made great strides as the years rolled by. It was not until 1810 that a machine printing press was constructed by Frederick Koenig, of England, who had a patent issued to him in that year. It is easily within the memory of living persons when all books were printed on the hand press.

Let us assume a work illustrated with wood engravings. Then a form of say eight pages of an octavo could be printed on the hand press. From this, the quality being first-class, the day's work would result in the neighborhood of about 400 impressions, and this would require a careful pressman and helper. To-day of the same work it is possible to imagine a thirty-two page form on a modern stop cylinder press, and after being made ready we can safely count upon at least 5000 impressions in a working day, this being five times the number of pages possible on the hand press and twelve and one-half times the amount of product, and this result can be obtained day after day until the plates are worn out, and the last sheet should be substantially as good as the first, inasmuch as when the form is made ready, the impression carefully adjusted and the flow of ink properly gauged the only call upon human agency is to see that the sheets are regularly fed, the form kept clean and the ink fountain filled, and the press reels off the sheets to the end of the edition.

With the daily press the output is a marvel. There are presses in this city that can turn off 30,000 to 40,000 impressions an hour. This makes it possible to keep certain pages open until the last moment for the latest news, and we have then the complete records of the world's happenings at our breakfast table. How Koster and Gutenberg would open their eyes if they could drop in upon us in this twentieth century of our Lord! Among other things that would set them wondering is the printing of both sides of the sheet and its delivery on the table, a finished product, folded and ready for the market! And no less a marvel is the press that will print six colors before the sheet leaves the machine, with color values all preserved and the register perfect!

It is said that the pen is mightier than the sword. If we couple the pen with the sword the statement is incontrovertible, inasmuch as the records of the sword would rest on very meagre traditions: if they were not imperishably preserved by "the art preservative of all arts," to be handed down to all time. The printing press is the most potent factor of modern civilization, and with one daily journal in its best estate with conscientious gathering of the news and clean presentation of the world's progress it stands as the

mighty recorder that marks our advance from the Dark Ages.—New York Journal.

WISE WORDS.

It is misleading to dwell so entirely on one side of human nature as to lose sight of other sides. Man is so intricate and complex a creature that the very fullest and broadest estimate will fail to exhaust his possibilities, and any attempt to narrow him down to a single line or course of action will inevitably come to naught by its own meagreness.

"The more one has to do, the more one is capable of doing, even beyond our proper path." The diligent man cuts out time and opportunity for whatever work he sets his mind on doing; it is the idle man who "can't find time."

It is a blessed thing, indeed, that none of us can take our rubbish to another world; for, if we could, some of the many mansions would be little better than lumber rooms.

The art of putting men in the right places is the highest in the science of government, but that of finding places for the discontented the most difficult.

Workers must expect sometimes to be warriors. Nothing is really worth working for that is not worth struggling for.

Force yourself to take an interest in your work, and the effort will soon become a pleasure instead of a hardship.

The men who succeed best in public life are those who take the risk of standing by their own convictions.

The charities that soothe and heal and bless lie scattered at the feet of men like flowers.

No man is so ready for a quarrel with another as he who has a quarrel with himself.

To be traduced by ignorant tongues is the tough brake that virtue must go through.

Why Pain Is Felt.

"It is a matter of common knowledge that a person who has had a leg or an arm amputated will afterward complain of 'feeling pains' or aches in the toes or the fingers of the amputated member, as they put it, or, more properly, in the extremity of what would have been the limb had it not been amputated," said a Washington physician.

"Some people are inclined to doubt that these sensations exist in the minds of the patient, while others who are willing to accept it are at a loss to understand the cause of the complaint. The reason is comparatively simple, though it is not generally understood.

"If a man's leg be fractured and crushed from the knee down, for instance, he will complain, before amputation, and often afterward, of pain in his foot and toes. He does not feel the sensation of pain in the crushed parts. This is because the pain is felt at the termination of the nerves of sensation in the foot of the injured limb, and not along their course.

"It is upon this principle that a man complains of a pain in 'his foot' when the foot is cut off. The pain is really in the stump of the limb, but the sensory nerves 'refer' it to the former termination of the nerves. This reference acts upon the brain to the extent of causing the patient to seem to feel the ache in the place where the foot formerly was."—Washington Star.

The Flatness of Windsor.

It is a popular error to suppose that the dwelling rooms at Windsor are very sumptuous. The private apartments are scarcely worthy of an ordinary country gentleman's seat. Queen Elizabeth is responsible for a great many of them, and they were built rather hurriedly by her orders. She had taken refuge at Windsor from the plague, which was raging in London, and her maids of honor and her attendants revolted at the uncomfortable condition of their rooms, which were low, dark and cold. The queen herself was furious because her dinner was invariably served up stone cold; but being of an inquiring mind she discovered that the kitchen was nearly half a mile from the dining room, and straightway built the present kitchen, which is very large and commodious. Elizabeth built the octagon library, which she is still said to haunt, and where she was frequently seen. It is said, last year.—London Chronicle.

An Alderman Bull.

Some time ago a follower of one of the city aldermen cast covetous glances upon a desirable newstand under the elevated railroad stairs. Straight he went to his friend, the alderman, and made known his wishes, which were that the newstand should be evicted from the locality.

"All right, my boy; leave it to me," said the city father, and began to pull wires. Finally he got an order directing the newstand to show cause why he should not get out, but that obstinate individual still remained. Then he drew up a formal complaint, which was duly laid before one of the judges.

The complaint, after telling how the news dealer had been ordered to leave and had not done so, concludes:

"And now we have to complain, your honor, that not only is this same stand still there, but the defendant has replaced it by a bigger one."—New York Commercial Advertiser.

One of Nye's Jokes.

When James Whitcomb Riley and "Bill" Nye traveled together giving a joint entertainment, the humorist had great fun with the poet. Once, introducing Riley and himself to an audience, Nye remarked: "I will appear first and speak until I get tired; then Mr. Riley will succeed me and read from his own works until you get tired."—San Francisco Argonaut.

TIPS ON HANDLING GUNS

F OBSERVED THEY WILL MAKE THE SPORT SAFE.

The Accurate Fitting of the Gun to the Beginner a Most Important Factor—A Great Advantage of Sportsmen Who Begin to Shoot Early in Life.

Shooting has become a branch of sport so generally indulged in that the safe handling of firearms is a matter of grave importance, declares a writer in the New York Sun. How to carry the gun, how and when to shoot, accuracy of aim and how to put ourselves and our fellow men in the least possible danger may be termed the most important things to the beginner. To become proficient one must begin young. Familiarity with a gun, when acquired at a late stage in life gives more or less put on. There is no reason, however, why a person of mature age cannot learn to carry a gun in a proper manner and with a few simple precautions place accidents beyond a possibility.

A gun pointed at no object or person can do no harm even if it goes off accidentally. It is very easy to carry the gun with the barrels pointed earthward or skyward. When the gun is carried with the barrels pointing toward the earth and the trigger guard resting on the wrist it is apparently in a position to do no one any harm, but a foot has been shot off more than once by a gun held in this position. To make this method absolutely safe the simple precaution of "breaking" the gun should be followed. With the gun "broken" it is impossible for it to go off accidentally, and it is a matter of but a small part of a second to close the barrels. Closing the gun and bringing it to the shoulder for aim can be accomplished in one motion.

If the gun is carried on the shoulder the trigger guard should be uppermost. This will bring the barrels into a position pointing almost directly skyward. If the reverse method is used, that is, the trigger guard down, the barrels will be on a level with any one trailing in the rear. Many accidents have been caused by crossing a fence with a loaded gun in hand. These accidents may be avoided by laying the gun down within reaching distance of the other side. A still safer method is to withdraw the cartridges from the gun before crossing any obstruction. This last method removes possibility of accident. One famous old rule formulated in behalf of safety was to carry the gun always at half cock, but the rebounding lock now used, which necessitates the gun always being at half cock, has done away with this.

Never shoot in the direction of any one, no matter how great the distance. Guns sometimes carry marvelous distances, and the range of danger cannot be gauged accurately, for of two shells though they are marked the same one is often more powerful than the other. A trifling powder may have been put in one or the difference may be in the explosive strength of two equal amounts of powder. The condition of the atmosphere often has a great deal to do with the distance a gun will carry.

If walking in line never change your position by stepping ahead or dropping behind. If spread apart to the right and left this rule should be even more closely followed. The person on the extreme right is in the safer position on account of the tendency to shoot to the left, whereas the person in the center will probably have the better sport. The left is the more dangerous position because of the tendency to swing the gun in that direction. On the other hand the more reckless shot should be placed on the left.

The first handling of a gun moulds the career of the future sportsman, and for this reason he should be put in the hands of a strict instructor. The policy of beginning with a single barrel gun is a thing of the past. It is very easy to have the lock of one barrel fixed and then when the time comes to do so to free the fixed lock. The object of allowing the beginner to use only one barrel at first is to make him careful of his aim. If he began with both barrels he would think if he missed with the first he would bring down his game with the second anyway. This would tend to make him careless with his first barrel, and this carelessness once acquired cannot easily be got rid of. If he began with a single barrel gun he would have to begin all over again with a double barrel gun for he would have a strange weapon.

To have a beginner measured for a gun is no longer a matter of mere theory, but is the most important feature. It is really the first step in the art of shooting. Take the beginner to a gun shop and pick out several guns. Then let him try the guns, placing the stock about an inch from the chest and three inches below the shoulder. Let the neck of the gun be slightly grasped with the right hand, with the forefinger close to the trigger. The left arm should be extended along the barrel, with a slight bend at the elbow and the left hand grasping the barrel firmly. If the gun is a fit an upward motion of both hands will not only bring the stock into proper position, but will bring the barrel in the direct line of the eye and of any object to which the attention of the eye is directed. When the eye is centred on any object the hands act in unison and the gun is mechanically pointed in that direction.

The next important step is the position of the legs. This should be very steady, with the left foot straight in front, and the right at right angles to the left. In this position one can shoot to the right or left without moving either foot. Perfect balance is necessary, and when it is once acquired it is

never lost. If the beginner stands with his legs apart he has to move them when changing the direction of his shot, and this disturbs his aim.

Let the beginner shoot first at a target so that he can see the effect of his aim. Do not allow him to poke his gun about and seek his aim or he will acquire the "following" trick which has spoiled many a good shot. When the beginner has confidence that his gun is levelled right and has attained the knack of shooting at an inanimate object then let him try a sitting bird or a squatting rabbit. Following this let him try a moving mark, beginning with the game going straight from him. This will be practically an easy mark after his former training, and will not give him any difficulty. After this it becomes more complex, in allowing for movement both in direction and speed of the proposed victim. Whether flying or running straight or obliquely, deflection from a straight line, distance and rate of speed are all problems that must be solved in the fraction of a second.

The judging of distance is the most difficult, and can be acquired by practice alone. In nine cases out of ten the first shots will fall behind the object. There are some rules for this, one of which is called "chucking the gun," which is first to cover the object, then a slight quick movement of the barrels ahead, pulling the trigger at the same instant. Another rule that is much followed, but is very inaccurate, is to pitch up the gun and fire at the spot which you think will be the point of contact. The first is much preferable and develops surer shots.

Lively rabbits are the best marks for a beginner. There is no chance for aim. At whatever point the rabbit is to be shot, the shot must be there at most before the rabbit, and as it is more or less easy to track a miss in this kind of shooting the knack is soon picked up.

It is entirely another matter to carry this principle into effect on fast flying birds without "ride or run" to guide the eye, and it is impossible to formulate a set of rules that will apply to this shooting. If, however, the sportsman has been carefully trained from youth he will soon fall into the knack of bird shooting.

A Fortune From Begging.

For the past thirty-four years, if not longer, a poor misshapen old beggar named Andreas Jungwisch has crouched on the pavement in front of the Royal Hotel here and craved alms from passers-by, says a Budapest special to the London Daily Mail. Owing to his age and infirmities he was not molested by the police.

Julie recently he died, at the age of eighty-four, and although it was expected that he had probably saved up a hundred crowns or so, to everybody's amazement on his wretched garret he had searched shares and Government bonds to the value of 500,000 crowns were discovered.

Now his heirs, all folks in the humblest walks of life, are disputing the validity of his will, according to which the whole of the fortune goes to the city of Pressburg, for the foundation of a Hungarian university.

The case is now before the courts here, and the city of Pressburg is making a fight for the money.

The Doctrine of Evolution.

The one question of absorbing significance to scientific and unscientific alike, the question which more than any other has influenced and tinged the thought of the latter part of the century, is the theory of organic evolution.

Scornfully rebuffed at first, this theory has now met with universal acceptance.

In 1859 Darwin published the work which will make him forever famous—"The Origin of Species"—tracing the connection between all forms of animal life and explaining the superior development of man on the principle of the "survival of the fittest."

The result is that what was formerly a mystery is now demonstrable fact. The most striking result of Darwin's work is the prompt and radical change in literary, religious and scientific discussion which came about in the latter part of the century.—New York World.

A Handy Farm Vehicle.

Among the machines exhibited during the recent exposition at Vincennes, says the Automobile Belge, was an eight-horse power gasoline agricultural automobile, capable not only of rendering the services of an ordinary vehicle in the conveyance of people and crops upon roads, but also of being quickly converted into a locomotive for hauling plows, mowing machines, harrows, etc., over fields. For farm work in the fields it has speeds of one and two miles per hour, while for road hauling it has a maximum limit of nine and a half miles an hour. Its wheels are provided with flanges to enable them to get a purchase in friable soil, while upon the felloes are arranged wide flanges to prevent them from sinking too deep into the ground.

Threw a Princess From Her Wheel.

A story is printed that Princess Victoria, a daughter of King Edward, while cycling in the Long Walk, Windsor Park, which is forbidden to cyclists, was stopped by one of the royal gatekeepers who, not recognizing her, stood in the gateway to prevent her passing. The Princess, not expecting a check, rode on, ran into the gatekeeper and fell from her bicycle.

The man on learning her identity humbly apologized, but Her Highness protested that he ought not to have treated any cyclist, Princess or peasant, so unceremoniously. She was not hurt, and remounting her wheel, rode on to the castle.—London Dispatch, in New York Sun.



Half-Hour with the Children

Little Johnnie's Questions.

Oh, tell me, papa, tell me why So many stars are in the sky? Why does the moon come out at night? What makes the snow so very white? Oh, tell me, papa, tell me quick.

Oh, tell me, papa, this one thing— Why are the leaves all green in spring? Why does the bark grow on the tree? How did the salt get in the sea? Oh, tell me, papa, tell me quick.

Oh, tell me, papa, if you know, What makes the grass and flowers grow? Why do we walk upon our feet? And what has made the sugar sweet? Oh, tell me, papa, tell me quick.

And tell me, papa, tell me how The milk and cream get in the cow? How many scales a fish has got? What makes the heat so awful hot? Oh, tell me, papa, tell me quick.

And tell me, papa, don't forget, What makes the water wet? How holds the sun up in the sky? When you were born, how old was I? Oh, tell me, papa, tell me quick.

—Cincinnati Commercial-Tribune.

Make a Kitchen Garden.

Every boy and girl likes to see things grow. If you are like other boys and girls you might enjoy a little farm on the window sill in the kitchen. All you need is a soup plate, a glass cover, a piece of white blotting paper and some mixed bird seed. Cut the blotting paper just like the soup plate and lay it in. Take some pins for fence stakes and divide the farm into two lots by fastening threads from one stake to another. Sprinkle on the blotter a handful of bird seed and then moisten well. Put on the glass cover and keep in the sun. In a few days the seeds will sprout and your farm will be flourishing.

Where Sarsaparilla Comes From.

During the summer many boys and girls—and grown people, too—line up before the soda fountains in our cities and call for sarsaparilla without stopping to think, and perhaps without knowing what that extract is that gives a rich brown color to the beverage. Sarsaparilla is taken from the root of several species of smilax, a great vine that grows in South American forests. Jamaica, Mexico and Central America also export quantities of the smilax root or the extract. One species of smilax grows to prodigious size in the great forests of the valley of the Amazon, and the Indians of that region sell large quantities of it to white merchants.

The Indians dig the root of this smilax, which sometimes reaches nine feet in length, growing horizontally from the stem. It is then dried and is usually shipped in that state, the sarsaparilla being extracted by manufacturers. These Indians of the Amazon, however, although far down in the scale of civilization, place great faith in the medicinal qualities of the juice, and perhaps the nature of the region in which they abide is responsible for this. They show much skill in extracting the sarsaparilla, which is done through a process of boiling.—Chicago Record-Herald.

An Oriental Kindergarten Game.

One bright spring afternoon a Chinese official and his little boy called at our home, on Filial Piety Lane, in Peking. Father and son were dressed exactly alike—boots of black velvet, trousers of blue silk, waistcoats of blue brocade, and skull-cap of black satin. In every respect, even to the dignity of his bearing, the child was a vest-pocket edition of his father.

The boy carried a 'tao of books, which I recognized as "The Fifteen Magic Blocks." Now, a 'tao is two or more volumes of a book, wrapped in a single cover. The one that the boy had contained two volumes. On the inside of the cover was a depression three inches square, snugly fitted with the fifteen blocks. These blocks are made variously of lead, wood or pasteboard.

All of the blocks are in pairs, except one, which is a rhomboid, and all are exactly proportional, the sides being either half an inch, an inch and a half or two inches in length.

The blocks of Chinese children are not used as in our kindergartens, simply to familiarize the child with geometric figures. The more specific purposes of the fifteen magical blocks is to picture scenes of history and myth that will have a moral and intellectual effect on the budding brain. Of course Chinese children build houses, bridges and wagons just as our do, but primarily their blocks are intended for education.

The first picture my child visitor built for me that afternoon was a dragon horse. I asked him to tell me about it. The little fellow explained that this was the dragon-horse of Fu Hsi. Fu Hsi was the original ancestor of the Chinese people, and he saw this animal emerge from the depths of the Meng River. On the back of the dragon-horse Fu Hsi described a map containing fifty-five spots. These fifty-five spots represented the male and female principles of nature, and out of them the ancient sage used to construct what are known as the Eight Diagrams.—Isaac T. Headland, in Ainslee's.

A London association which has to do with the drinking fountains and watering troughs of the metropolis objects to the water tanks of steam automobiles being filled therefrom.

Railroad bridge builders are adopting the fir timber of the North Pacific coast for bridge building because of its remarkable strength.

CURIOUS FACTS.

A Pennsylvania wheelwright has a tame chicken that follows him about like a dog, and recently took a Sunday walk of twelve miles with him.

A curious effort in behalf of temperance is noted on the part of the Belgian Government, which has offered a prize for the best picture showing the evils of drunkenness.

A Roman chariot has been found near Philippopolis, Bulgaria, in a tumulus. All the metal parts of the chariot and the harness were found, as well as arms and human remains.

Among its many curious products, South Africa includes the "sneezewood" tree, which takes its name from the fact that one cannot cut it with a saw without sneezing, as the fine dust has exactly the effect of snuff.

The Sandwich Islanders estimate women by their weight. The Chinese require them to have deformed feet and black teeth. A girl must be tattooed sky-blue and wear a nose ring to satisfy a South Sea Islander. Certain African princes require their brides to have their teeth filed like those of a saw.

On a sand island in Dublin Bay a new kind of mouse has been found. It resembles the ordinary mouse in all except its color, which is that of the sand, and the naturalists attribute that to an interposition of nature for its protection from the owls and hawks on the island. It is supposed that they are descendants of cast-away mice, and that the protective coloration is a gradually acquired result of their surroundings.

A member of the London Zoological Society during a visit to the Malay Peninsula discovered a curious insect called the lantern-fly, which makes great leaps without the aid of its wings. It was some time before the could find out where its leaping power lies, but he at last discovered a curious projection on the front of its head, like a nose, and this bends back under the abdomen and then releases it suddenly, the effect being like that of a springboard.

The following obituary, which was recently published in the Dublin Daily Express, affords a striking illustration of the dispersion of the Irish people all over the world: "Geraghty—Accidentally killed at Johannesburg, South Africa, John Geraghty, aged thirty-seven years, son of Patrick Geraghty, of Roscommon; brother of George and Kate Geraghty, Roscommon; and brother of James Geraghty, of Pretoria, and of William Geraghty, of Galway, and of Peter, Patrick and Martin Geraghty, of New South Wales, and of Annie Corley, of Suva, Fiji Islands. Deeply regretted. R. I. P."

Losing an Arm in Battle.

Some one asked Captain Lucius D. Creighton, of Missouri, in the Arlington lobby, how it felt to have an arm shot off. Captain Creighton served during the war between the States in a Confederate regiment, and his left sleeve hangs empty at his side.

"It doesn't feel at all," the Confederate veteran answered. "It is chiefly in the lack of feeling that you know you have been hit. I lost my arm at Gettysburg, and when the bullet struck me I couldn't imagine at first what had happened. There wasn't the slightest pain, only a slight tickling sensation, which soon gave way to numbness. In a few minutes my arm seemed to be an enormous weight hanging to my shoulder, but it was not until after the amputation had been made that I suffered actual pain. The after effects of losing an arm are not altogether pleasant; you sort of come to miss it in time, but so far as suffering is concerned I would much rather a bee would sting me."—Washington Post.

"Noiseless Milk."

City people of a wakeful turn who suffer from the racket of the early milkman will rejoice in the true tale that comes from Indianapolis: "A dairyman went to the Hoosier capital for treatment, and while there, lying in bed, was greatly annoyed by being awakened each morning by the man delivering milk. As soon as he got well he had the milkmen shod with rubber heels and rubber soled shoes, and rubber tires put on all his wagons. He presented each customer with a rubber mat upon which to set the milk can by the door, had his horses shod with rubber shoes and then began to exploit his noiseless milk. His business has quadrupled." Hooray for "Noiseless Milk!"

He Was Not Engaged.

The fire of a legal examination is a hot one, but an accused person who stands its test doesn't often emerge with a character the better established.

An individual of somewhat doubtful appearance was applying for a situation as van driver. On being asked for references, he mentioned one of the dealer's old hands, who was called in and questioned as to the applicant's honesty. The referee rubbed his chin meditatively for a moment, and said: "Honest? Well, governor his honesty's been proven again and again. Faith, he's bin tried t'win times for stealing and escaped every time!"

The applicant was not engaged.—Waverley Magazine.

An Indian Toy Factory.

On one of the Indian reservations in New York State is a toy factory which employs several hundred Indians all the year around. The toys manufactured here are being shipped all over the world.