WILL SOON BE A SCIENCE.

HISTORY OF BALLOONING TOLD FROM ITS INFANCY.

Aeronautics Receiving Much Attention in the Last Years of the Century—But Little More than 100 Years Since the Montgolfier Brothers Made the Initial Trip With a Hot Air Bag—The Latest Inventions in Europe Are Steered Against the Wind—Progress Expected.

It is only 111 years since the Montgolfier brothers sailed in the air a balloon filled with heated air, a crude affair at best; now the latest developments and investigations of Langley, Maxim, and Holland are becoming well known to the public. But it is only within a few years that any real progress has been made. June 5, 1783, Joseph Montgolfier, at Annonay, France, assisted by his brother Stephen, sent up a balloon made of varnished paper. They are credited with being "the first that ever burst into that unknown sea." But in ancient times mechanical flight was spoken of in the classics, as, for instance, the fable of Dædalus and Icarus in Greek mythology. In the latter part of the fifteenth century the natural philosopher, Dante (not the poet) is said to have sailed several times over Lake Trasymene, in Italy, by means of a pair of wings, till in decending too rapidly he broke his leg; later still, a smith at Sable, France, was able to decend obliquely through the air by means of wings, but could not lift himself. There are also traditions of the airship of Laurent in 1709, that of the Jesuit priest, Lara, and finally that of the Portuguese, Guzman, of whom it is maintained that he invented an ari balloon with hydrogen gas, which burst at a great altitude, and came down about twelve miles from Paris, where the superstitious peasants destroyed it with hayforks and flails.

THEY CARRIED PASSENGERS.

The first ascension with passengers was undertaken by the marquis d'Arlande and Pilatre de Rozier, coming down in twenty-five minutes at a distance of five miles from the starting point. Dr. John Jeffries, a graduate of Harvard, made in 1785 the first passage by balloon from England to France with the aeronaut Blanchard, paying him over £700 for the cost of the trip. The trip occupied two hours only. A monument was erected at the point of debarkation and Mr. Jeffries was much feted by the municipal council of the city of Guines, in France, and its compte—having descended in the forest of Guines. Improvements were made soon after in the safety valve, hanging the car in a net, the method of using ballast, etc. Gay-Lussac and Biot reached an elevation of 7,000 meters, or 21,000 feet. No further progress was made in the construction of balloons and the scientific development of aerial navigation for nearly a century.

The employment of balloons in warfare was found to be practicable during the siege of Paris in 1870, when Nadar and others established the balloon postal service. Gambetta himself did not hesitate to escape from Paris in this manner. In Tonquin, in the late French war, balloons were employed. The balloon rose to a height of 150 meters, or during battles to 250 meters, and from that height it was possible to inform the commanding officer as to the point where the projectiles fell, the strength of the enemy, etc., by raising the voice or by dropping written communications weighted with stones. It was also through this means that the Chinese were prevented from retiring from Bac-Ninh, and that place was taken without firing a shot.

The use of the balloon in the recent great military maneuvers in France has perfected the science greatly, as shown by M. Debureaux, an officer of engineers, in his report. In concluding his report he claims that if Napoleon at Waterloo and Bazaine at Saint Privat had had a balloon service at their disposal a different result might have been expected from both battles, and thereby the course of history would have been changed. M. Debureaux thinks that at a distance of three miles the balloon would be beyond the reach of artillery, and would command the ground for a distance of more than six miles; and even at night the country is sufficiently illuminated to be compared with a map. It is difficult, however, to distinguish the movements of troops in a wooded country, and there are other drawbacks.

NEW ERA COMING.

If the proposed balloon ventures succeed a new era will have been inaugurated in aerostatics. The greatest of these is the navigable balloon, based on the theory of Lieut. Clement de St. Marcq. It consists in sending an electric current to a motor placed in a casement, which is suspended by a balloon, thus operating a propeller situated in the anterior part of the casement, the current to be conveyed to the motor by means of a pliable cable towed by the balloon, and sliding along an elevated aerial way by means of a trolley. The balloon is an elongated or cigar-shaped form. The central part of the casement is the governing station, where the motorman has access to all the actuating levers. The anterior part is reserved for passengers, fitted up like a saloon steamer, and will accommodate twenty-five to thirty people. The posterior part is reserved for machinery. Here is located a motor of 145-horse power. The speed of the balloon is estimated at twenty-five miles an hour. The electric current is generated by two dynamos of 2,000-horse power each. The track is to be laid from the house in the city to the fair grounds, a distance of about a mile.

The other venture in aereostatics—le chateau aerian—consists, as its name suggests, in having a castle suspended in mid-air by means of a balloon. This gigantic enterprise is not expected to be in operation until late in the summer. The basket, or "chateau," will hold 100 persons at a height of 1,300 feet; connection between the chateau and the ground is to be established by means of fast elevators between heavy cables. The balloon, the chateau, and the elevators are to be equipped with parachutes in case of accident. The moorings of this aerial monster will consist of forty steel cables, so arranged that the airship can be drawn to the ground in a very few moments.

Among the numerous inventions in the field may be briefly mentioned the aerial balloon of M. Champagnon. The propellers of this are not screws or paddlewheels, but eight oblong wings, similar to those of a dragon fly; and they are claimed to develop a propelling force of twice the strength of screw of paddlewheels. Delprad's aerial velocipede seeks to bring the unaided muscular power of man into service for the working of the screw flight.

In France balloons have been made within the year that can be steered against the wind when blowing twenty miles an hour, while in Germany a balloon has been produced which can be steered, which is used in warfare solely, hence the manner of its construction is not made known.

CANADIAN CATTLE IN BRITAIN.

The Wonderful Ignorance Displayed in Great Britain About Canadian Matters.

It has long been well known that the British public in general, and even persons in high positions from whom better things might be expected, have displayed wonderful ignorance about Canadian matters, but it was not so generally known that an accountable ignorance of matters within the bounds of their own little island prevailed among such officials. Prof. Tanner, senior examiner on agriculture in the Science and Arts Department of the British Government, is now on a visit to this country and was interviewed both here and in Ottawa, regarding the reason why the British Government continued the slaughtering embargo on Canadian cattle landed at British ports, and on both occasions he gave as the principal reason that tuberculosis was known to exist in some parts of Canada. Now, while it is unfortunately too true that tubercular diseases do exist to some extent among Canadian cattle, still it is a well known fact that they prevail to a much greater extent among British herds. Cattle from all parts of the Dominion, excepting the Maritime provinces and British Columbia, are being brought regularly for sale to Montreal and are slaughtered in one of the two abattoirs where there is a skilled inspector employed to examine every beef carcase, yet not over one in ten thousand is found to show symptoms of tuberculosis, while according to some recent reports nearly one per cent. of British cattle slaughtered for beef have shown symptoms of the disease, and in some of the large cities twenty per cent. of the cows killed for beef were more or less affected with the disease. Under such circumstances the fear of importing the disease from among the most healthy herds in the world seems rather silly, and in fact it is not the reason given by the British authorities who pretend to dread the importation of contagious pleuro-pneumonia from a country where it has never had any existence. It is difficult to say whether the false charges made by British officials of pleuro-pneumonia existing among Canadian herds, can be laid to their ignorance, pure "cussedness" or to "political exigencies." It is devoutly to be hoped that Prof. Tanner will improve his opportunities while in Canada for getting correct information about the real condition of Canadian cattle.

A NOTE OF KINDNESS.

Not Costly Hospitality—But It Was Given and Received With Hearty Good Will.

An English woman, living in the town of Bergen in Norway, during many years, was in the habit of preparing every Christmas an English dinner of roast beef and plum-pudding, to which she invited all of the English sailors who happened to be in the port at that time.

The sailors ate, drank and were merry, and we hope went on their way better men, as everybody should be better for the touch of kindness given to cheer the hours of life.

But that was not the only result of her gentle deed.

An American woman happened to be in Bergen on Christmas, heard of this dinner, and coming home to America gave an account of it to some of her friends.

They all listened with pleasure; but one said, "Why cannot we do likewise?"

They were all ready to follow. They lived in a large seaport town. When the next winter came they formed themselves into a Scandinavian dinner club, and gave much time to the concoction of hitherto unknown dishes.

They sought out all the Norwegian, Swedish and Danish sailors in port, and invited them to a home dinner on Christmas day. The room was gaily decorated with evergreen and their national flags; the band played their own music, and on the table were their own dishes, chief among which were Risgreynsgrot (rice porridge), and Leit fisk (codfish).

It was not costly hospitality, but it was given and received with hearty good will. The men who probably would have spent the day drinking in taverns were reminded of their homes, their wives and children, and of the holy purpose of the day.

It is not the song of one bird that cheers the summer morning, but it is the song caught up and echoed from every field and forest, until the air is turned into music.

This little note of kindness has been echoed once. Can it go no farther?

Euphemism.

Doctor's Wife—"Have you told Mrs. Blank that her baby is deaf and dumb?"

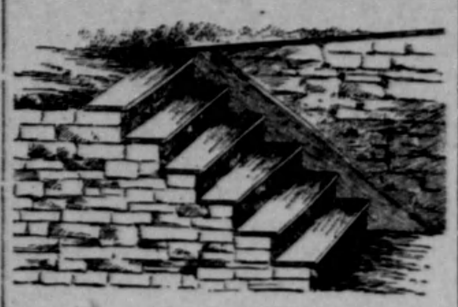
Old Doctor—"Not exactly; but I have told her that if the little girl grew up and married, her husband would be devoted to her."

Every man has his own vocation. There is one direction in which all space is open to him. He has faculties silently inviting him thither to endless exertion. He is like a ship in a river—he runs against obstructions on every side, but one, on that side all obstruction is taken away, and he sweeps serenely over a deepening channel into an infinite sea.

AGRICULTURAL.

The Outside Cellar Stairs.

As usually constructed, the outside cellar stairs become very much dilapidated after a few years of use, and many serious accidents occur by falling or slipping from and upon the decaying steps. If stones of the right length can be obtained, they are the best possible material for the steps, the next best being plank, though neither can be depended upon unless the whole space underneath the steps, down to the level of the cellar floor, be laid up in masonry. Where only small stone, either round or flat, is at hand, lay up the stairs of this material thoroughly imbedded in mortar, making the steps of the needed height. When this is done, cut a plank step of the proper width and length for each step, and place them on top of the stone step, as shown in



DURABLE CELLAR STAIRS.

the accompanying illustration. Upon each side fit a retaining board, and the result will be steps that are durable and generally satisfactory. If possible, make the steps from two-inch pine plank, covering the whole with folding doors, in the usual manner.

Feeding The Dairy Cow.

Mr. M. T. Cole, says:—Where cows are kept for supplying milk for cheese factories and making butter during warm months, a good pasture, plenty of pure water with a liberal crop of fodder corn to supply the place of short pasture (some now use ensilage for summer feeding), there is perhaps not as much labor or care required as in some other branches of dairying. Where one makes butter twelve months in the year, supplies a creamery or ships milk to city dealers, it is very necessary that he knows how to do it. In talking with proprietors of several creameries or butter factories I found that the greatest trouble in running them satisfactorily was the falling off of milk during months when cream and butter were scarce and high. Farmers have to be educated to the business. Many butter factories have failed because they could not get enough milk during the winter months to pay for running.

In looking over my milk account I find that our cows averaged for June 400 pounds per day; for August, 237 pounds per day; for December, 263 pounds per day. We keep twenty cows and milk about the same number all the time. I confess there is too much difference in the showing between the months of June and August, but did you ever see two such extremes? During June the feed was never finer; in August everything parched with drought, flies trying to extract what little juice there was in a cow.

Care should be taken to feed cows with the greatest regularity. We weigh our milk every night and morning. It is truly surprising to see what a variation a slight irregularity will produce. Last week we were going out to an evening entertainment five miles away, consequently milked one hour earlier. The next morning we milked at the regular hour. There was a shrinkage of twenty pounds. The weather and feeding were just the same as usual. As I assist with the milking and feed the cows myself and attend to weighing the milk, it is very interesting to note these variations.

Changes in the weather will affect the quantity of milk. In winter warm weather will increase the flow, while in sharp windy weather it will decrease. To obviate this the stable must be comfortable, and the feeding performed with the greatest care.

There is no use in talking about getting a good flow of milk without plenty of good food. It requires more in cold weather than in warm. It is almost as bad to feed too much as not enough. Only a few days since I came near getting the cows off by not decreasing the rations to correspond with the weather.

It is all right to talk about a complete bill of fare to produce milk, but these times farmers will be governed to some extent by what they have on hand. I know that dairymen do not generally give credit enough to corn as a milk-producing food. I have—and can do it again—produced a good quantity of milk the winter through with no feed but corn in the ear and good corn stalks, with an occasional ration of hay.

The Private Dairy.

At a meeting last winter of the Nebraska dairymen, F. H. Vaughn said a word in favor of private dairying. While not wishing to say anything disparaging to the creameries, yet he thinks that for the man who is imbued with the right spirit, taste and love for the work, that the private dairy presents the most inviting field. It encourages and stimulates him to his best efforts.

All of the various conditions are under his management and immediate control. Step by step through the entire process his perception is quickened, his vigilance made more watchful and zeal more earnest, for the reason that the whole responsibility rests upon him. Quite a large share of this business is beyond the reach and influence of the one who performs, cares for, and directs the work at the creamery.

Yet all of the many important and intricate steps and turns are performed by or under the immediate direction of the private dairyman, who all the while is stimulated by the knowledge that success or failure depends on the quality of his work. By the use of the modern machinery the old-time drudgery imposed on the good housewife has been removed, and the husbandman now performs the work with ease and skill, calling on his wife only to add those artistic touches in which the ladies always excel.

The Use of the Cellar.

To be sure the cellar is not a good place to house farm implements, carriages, or the family provisions and they do sometimes contain worthless clutch, says J. W Ricker, but does not the man who shows a lack of order in the cellar also show the same in the barn above and other buildings? And if so does that prove that he ought to live without buildings?"

If sufficient absorbants are used the barn cellar is not a nuisance, but the best place to make and store dressing that I know of. The liquid manure contains nearly all of the potash which passes from the animal, and we should save as much of it as possible, but at those barns without cellars very little is saved.

Our cellar is a good place to grow pigs in. Even in cold weather they grow about as well as in summer, as they never suffer from cold and are provided a dry nest to sleep in. We have more than doubled the production of our farm and to the cellar is due much of the credit.

FACTS IN FEW WORDS.

Canada's foreign business amounts to $50,000,000 a year.

Chicago is the greatest railroad centre in the world.

In France the bicycle is ridden by more women than men.

There are 13,000,000 men of military age in the United States.

Football was a crime in England during the reign of Henry VIII.

The United States uses nearly one-half of the quinine produced in the world.

Pneumatic tires have deen found very serviceable on hospital ambulances.

There are more muscles in the tail of a rat than there are in a human hand.

Last year Australia produced gold to the value of $5,000,000 in excess of any other country.

The statement is made that during the last 100 years France has lost 6,000,000 soldiers in war.

There are clubs of girls in Sydney, the object of which is to attend the theatre without male escort.

The woodpecker exerts a force with his bill against a tree equivalent proportionately to that of a 20-ton trip hammer.

In China a man who killed his father was executed, and along with him his schoolmaster for not having taught him better.

A Florida turtle's burrow was explored and among its inhabitants were found thirteen species of insects, ten of them new to science.

Bicycle riders in Southland, Australia, are required to dismount twenty-two yards from an approaching horse and draw their wheels past.

Explorers declare that no flowering plant has ever been found within the Antarctic Circle. In the Arctic Circle 762 different kinds are known.

Recent figures show that the total value of the matches made and consumed each year throughout the world is but little short of $200,000,000.

In tests last year in the German town of Dessau it was shown that cooking by wood and coal costs a little more than twice that done with gas.

Whenever a murder is committed in Argentina it is customary to put every possible witness in prison and keep him there until the real culprit is convicted.

Forty-five pounds of corn are said to be worth only a cent and a half in Russia today, and many farmers are sending their cattle into the fields, as the cost of harvesting would exceed the price of corn.

In the interior of Australia is a series of great lakes which are occupied by water only at long intervals. The mud which remains when the water is absent is filled with the bones of geologic monsters.

A notice has been posted on the doors of one of the most fashionable churches in the west end of London to the effect that no more coppers will be accepted in taking up the collections.

President Diaz, of Mexico, has sent out a topographical and geological expedition to the volcano Popocatepetl, owing to the attempts of an American company to buy the mountain.

Two colored women at Sedalia, Mo., run a farm themselves, and, when ploughing time comes, in lieu of using a horse, one woman draws the plow while the other guides it.

Mrs. John Shenk, living near Labanon, Pa., went into her cellar to procure some provisions recently, and while there was stung by a copperhead snake. A favorite cat which accompanied Mrs. Shenk attacked the reptile and killed it.

A Parisian shoplifter carried a bogus baby with her during her predatory excursions. The infant had a wax face and a hollow, leather body. It was the thief's custom to dexterously transfer purloined articles, such as gloves, laces, etc, to the spacious baby.

Remarkable Action against a Surgeon.

An interesting surgical law suit lately took place in Germany. A girl seven years old was taken to a hospital affected with tuberculosis in the foot, and the directing physician, after vainly trying in other ways to prevent the spread of the disease, proceeded to amputate the foot. The father of the child had previously declared he would not permit the operation, and the little patient was already lying on the operation table under ether or chloroform when the father appeared at the hospital to take the child away. But the physician, saying, "It is too late, I will speak to the father afterwards," proceeded with and completed the operation. After this no new tuberculosis appeared, the child regained its strength, and has gone on developing normally. The father brought a case of "wounding by means of a dangerous instrument" against the doctor, but the latter was acquitted. The case is to be tried again, however.

THE WEEK'S NEWS

CANADA.

It is claimed that a stream of valuable mineral water, closely resembling the famous Apollinaris water, has been found at Radnor Forges, Que.

The Ninetieth Battalion, of Winnipeg, has been increased in strength nearly forty per cent. the total strength now being 462, instead of 368, as previously

Tuberculosis is prevalent among herds of dairy cattle in the neighborhood of Vancouver, B.C., and a Government inspector is now examining the cattle.

Mr. Thomas How, manager of the London, Ont., branch of the Bank of Toronto, has been promoted to be general manager of the Montreal branch of the same bank.

One of the large mountain engines of the Canadian Pacific railway burst near Field Station, B.C., on Monday night, killing the driver and stoker, and severely wounding a brakesman.

It is proposed to establish a co-operative colony on one of the many fertile islands along the British Columbia coast, to which the Government has promised assistance. The settlers will engage in farming and fishing.

A farm laborer named Cannuff, who was employed by Mr. VanAlstine on a farm three miles north of Morden, Man, has been arrested on the charge of murdering another laborer named Lard. Cannuff has confessed that he accidentally shot Lard, and through fear buried the body.

The White Star steamer Majestic in a dense fog off the Banks on Monday morning ran down the fishing schooner Antelope. The steamer lowered her lifeboats and picked up seven of the occupants of the schooner. One of the men rescued was so badly injured that he subsequently died.

Mr. L. J. Seargeant, general manager of the Grand Trunk railway, in an interview said that it appeared to him that the Intercolonial Conference at Ottawa was the first step towards the unification of the English people of the world, and the domination of the English language and the sentiments which regulate the lives of the Anglo-Saxon race.

Sir John Gorst, the eminent British statesman, and formerly Under-Secretary for India, who is at present in Montreal, says that Canada is a great country, and must have a remarkable future. He supposed that free trade could not be adopted in this country, but he thought that protection in a great many cases is carried to great extremes.

GREAT BRITAIN.

Mr. Gladstone declines the invitation to visit the United States on account of his advancing years and the recent operation on his eyes.

The house of Princess Soltykoff, at Slough, Bucks, about two miles and a half from Windsor, was entered by burglars on Wednesday night, and jewels to the value of ten thousand pounds were stolen.

A despatch received in London from Buenos Ayres announced that Jabez Balfour, the fugitive ex-member of Parliament, has been surrendered by the Argentine authorities to the representatives of the British Government.

The Arbitration party in the British House of Commons believes the Government favors it, and the prospects are hopeful for the adoption of a twenty-five year arbitration agreement between the United States and Great Britain.

UNITED STATES.

In a lot of cheese seized on Thursday in New York were discovered the bacilli of diphtheria.

The Pullman works were reopened on Thursday quietly. Only two hundred and fifty men were reported for work, although the company expected eight hundred.

There is a plague of black spiders in Crawford country, Ind. Many persons were bitten, and one man died, having swallowed a spider while drinking from a jug.

President Debs says that he will never again be connected with any strike organization. Hereafter he will advise all workmen to seek redress by the ballot.

The annual report of the Gas Inspector for the State of Indiana has been issued, and contains the remark that the limit of the natural gas supply has been reached, and the end is only a question of time.

In the United States District Court in Denver, Col., on Thursday, seven Grand Junction railway men were convicted of detaining the mail by refusing to handle trains on which were Pullman cars. The judge fined them each ten dollars and costs. Much surprise was expressed at the lightness of the sentence.

GENERAL.

Cholera is epidemic at Marseilles, an the authorities are said to be concealing the actual situation.

Chief Malabach, who has been giving so much trouble to the authorities of the South African republic, has surrendered.

The French Government was the first to accept Great Britain's invitation to observe strict neutrality during the war between China and Japan.

A locksmith named Latshowski, his wife and two sons were found dead in Berlin on Thursday morning, all having committed suicide by hanging themselves.

The gold that was stolen out of a consignment from New York to Paris was found in some sacks hidden in a heap of coal near the railway station at Havre.

Dr. Cornelius Herz, the Panama lobbyist who refused to return to France, has been sentenced to five years' imprisonment, and to pay a fine of three thousand francs.

The Japanese Government has instructed its Minister in London to apologize to Great Britain for firing upon and sinking the transport Kow Shing while she was flying the British flag.

Fearing epidemics of disease in Constantinople if the people are any longer allowed to remain huddled in the gardens, where they sought refuge at the time of the earthquakes, the Government is compelling them to return to their homes.

Every single action of our life carries in its train either a reward or a punishment, however little disposed we are to admit that such is the case.