Freeland Tribune

Established 1888.
PUBLISHED EVERY
MONDAY AND THURSDAY,
BY THE
TRIBUNE PRINTING COMPANY, Limited
OFFICE: MAIN STREET ABOVE CENTRE.
FREELAND, PA.

SUBSCRIPTION RATES:

One Year	$1.50
Six Months	.75
Four Months	.50
Two Months	.25

The date which the subscription is paid to is on the address label of each paper, the change of which to a subsequent date becomes a receipt for remittance. Keep the figures in advance of the present date. Report promptly to this office whenever paper is not received. Arrearages must be paid when subscription is discontinued.

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Germany paid last year more than $41,000,000 in pensions to the aged poor. It was a much-needed and graceful charity. But far better would be a social and industrial system under which such alms would not be necessary.

Yale mathematical professors have been discussing a popular way of writing the year 1899 in Roman numerals. According to the present system it would have to be written MDCCCLXXXXIX. This is a bewildering array of figures, and many of the Yale professors favor writing it MCIM, says the New Haven Evening Register. It is thought that this method will be generally adopted by those who have occasion to write the Roman numerals.

The London Telegraph has produced a Sunday edition. It is the first of the large London papers to do so, and has been followed by the Mail. Can this be the result of the recent closer communion between England and America. We have been told that savages when brought into contact with civilization rapidly acquire its vices; but testimony to the reverse tendency is imperfect. Certainly the rule is that the older civilization corrupts the younger. It is a puzzling thing to make facts fit scientific theories.

The status of woman in Japan has changed to a remarkable extent in the last few years. It is an invariable rule that with the advance of civilization in any country we find enlarging liberty for women and the concession of greater rights to them. It appears that in spite of the unfavorable conditions under which Japanese women of the generations preceding the present one have lived they still have asserted themselves to a marked degree in the literature of their country. One writer tells us that a large and important part of the best literature that Japan has produced was written by women. A good share of the ancient heroic poetry of Japan is the work of women. The two greatest Japanese books which have come down from past centuries are by women. It would seem that with her larger liberty and her immensely improved opportunities for education the Japanese woman would become a much larger contributor to art than she has ever been before.

No other country has shown such a rapid increase in the production of coal during recent years as the United States, according to statistics just made public by the Treasury Bureau of Statistics. The quatity of coal produced increased from 32,868,690 tons in 1870 to 147,860,380 tons in 1897, while the total quantity exported increased from 227,918 tons in 1870 to 4,008,936 tons in 1897. In the first mentioned year the United States supplied but 17 per cent. of the world's total output; at present it furnishes about 25 per cent. thereof. It is when comparison is made with the increases in the production of other countries that the magnitude of the strides made by the United States can be best appreciated. The average annual output of Great Britain showed an increase of 45 per cent. in the period from 1871-75 to 1891-95, that of France an increase of 70 per cent., that of Germany an increase of 115 per cent., and that of other countries, not including the United States, a gain of 132 per cent., whereas the increase shown by the United States in the same period amounted to 193 per cent.

Origin of Silhouettes.

Silhouette, a profile in black, is so called from Etienne de Silhouette Controlleur des Finances, 1757, who made great savings in the public expenditures of France. Some say the black portraits were called silhouette in ridicule; others assert that M. Silhouette devised this way of taking likenesses to save expense.

Dead Game.

Weary Watkins—If I was to find a dollar an' buy a lottery ticket an' win the capital prize I'd first take a bath—Hungry Higgins—What! "Take a bath. I'd play the whole string out, you bet!"—Indianapolis Journal.

MARVELS OF LIQUID AIR.

A Scientific Discovery That May Effect a Revolution in Industrial Methods During the Twentieth Century.

SOME NOVEL AND AMAZING EXPERIMENTS.

The most extraordinary exhibit ever given in Washington was witnessed at the Arlington Hotel a few nights ago by the scientific circle of the city, members of the Cabinet, Supreme Court, Diplomatic Corps and other public men. It was given under the auspices of the National Geographical Society, presided over by Professor Bell, the inventor of the telephone, and furnished an opportunity for Charles E. Tripler, of New York, to show for the first time in public the new motive power which he has discovered and calls liquid air.

Briefly and simply stated, Mr. Tripler takes 800 gallons of ordinary air drawn from any window and by compression and cold reduces it to one gallon of a liquid that looks like glycerine and retains its form at a temperature of 312 degrees below zero. As it warms it expands into vapor and then into air, just as water is expanded into steam by heat. By controlling this expansion Mr. Tripler proposes to furnish a new motive power for the use of transportation companies on sea and on land, for factories, furnaces and for every other purpose for which steam and electricity are now used. The expansive force is equal to 2000 pounds a square inch, and without an exhaust pipe the pressure is so great that there is now no material of sufficient strength to restrain it. In other words, a pint or a quart or a gallon of this liquid will burst any vessel in which it may be confined unless there is an opportunity for its gradual escape.

Liquid air is manufactured by apparatus which Mr. Tripler has invented. The first gallon or two is made by the use of coal or any other ordinary fuel, just as ice is made in a factory, but thereafter he is able to reproduce ten gallons of the fluid by the expenditure of two. A railway locomotive or a steamship will therefore create its own power from the atmosphere as it passes along its way, and a factory engineer will simply turn the key of a ventilation pipe, start his machine and manufacture fuel as he needs it. Mr. Tripler insists that his energy can be used with no more difficulty and at a cost seventy per cent. less than steam, and, having mastered the secret of its production, he now proposes to apply it to practical use.

Mr. Tripler brought six gallons of liquid air with him from New York, and in the presence of four or five hundred persons performed the experiments that are described in McClure's Magazine. He dipped the stuff out of his can with an ordinary tin dipper, just as a milkman would dip milk. He dropped a potato in it, lifted it out in two or three minutes and threw it on the floor, where it broke into a thousand little crystals. He took a rubber ball, immersed it in the liquid and then broke it as if it was glass. He dropped in a piece of beefsteak and in a moment it was broken into little fragments that looked like petrified wood. He immersed a tumbler of alcohol, and in a few minutes it was frozen into a block of ice. He filled a pasteboard box with mercury, which when immersed in the liquid air became as hard as steel, and he used it as a hammer to drive nails in the table. He immersed copper, tin, iron and strips of steel in the liquid air, and they crumbled like piecrust. He demonstrated the expansive power of the liquid in a similar manner, and altogether performed experiments that were not only novel but amazing.

The liquefaction of air is one of the scientific achievements of the last quarter century. In the first successful experiments only a few drops of liquid air were obtained, but six or seven years ago the British scientist, Professor James Dewar, demonstrated that it could be produced in quantity. The expense, however, was enormous—a pint costing about $5000. Mr. Tripler declares that he has produced gallons of liquid air at a cost of about twenty cents a gallon. He further claims that liquid air can be used to make liquid air in larger quantities—that he has actually obtained ten gallons from three.

He holds that there is no reason to doubt that this process can be repeated indefinitely, and that, therefore liquid air can be produced in unlimited quantities at practically no cost (except, of course, that of plant and labor). Mr. Tripler also expresses confidence that the commercial and scientific applications of liquid air are so numerous and so important that it must effect no small revolution in modern life.

"It is a fact of science," said Mr. Tripler, "that air liquefies at a temperature of 312 degrees below zero. The problem has been how to obtain, and subject air to, that degree of cold. I have discovered that air—compressed air—can be so used as to produce that degree of cold, and, consequently, to liquefy other air; and I have invented a machine by which the liquid product can be made in great quantities at a low cost."

Liquid air is a clear and fluent substance, which, upon exposure, evaporates rapidly in a heavy mist. It is so intensely cold that the hand held over it is speedily chilled. If the hand is plunged into it, the sensation is that of burning, and unless it is immediately withdrawn the skin is blistered and scared. When the hand is removed, it becomes almost instantaneously dry, for the liquid which had adhered immediately gathers in bright beads and drop heavily to the floor.

For liquid air, as power, Mr. Tripler claims that it has about one hundred the times the expansive force of steam; that expansion immediately begins under the influence of the prevailing temperature, and that every additional degree of heat applied yields twenty pounds of pressure. Steam pressure is not obtained until water has been heated to a temperature of 212 degrees Fahrenheit, and each additional degree of heat produces only one pound of pressure. He asserts, moreover, that liquid air can be applied as a substitute for steam to any engine, with substantially no further change than the displacement of the boiler by the smaller and lighter receptacle holding the air. Its general adoption, therefore, as motive power would not mean the discarding of expensive engines now used. Hence, the first cost of its adoption would be slight, and with its vastly greater potentiality, it must (he claims) supersede steam, if it can be made cheaply enough.

For that Mr. Tripler provides by his application of liquid air to the manufacture of larger quantities of liquid air. He asserts that he has accomplished such a result; that he first used steam as the power requisite in the process of making liquid air; that he took liquid air thus made, applied it to an engine as a substitute for steam, operated the engine thereby, and used the power thus obtained as he had used the steam-power.

"I find in this matter," he said, "that I have been generally misunderstood. I don't claim to create energy, to make something out of nothing, to upset any of the laws of nature. I do say, though, that the scientists have been wrong in some of their notions, and that they will have to change them. I assert that by the use of a given quantity of liquid air, substituted for steam power, I can make, and have made, larger quantities of liquid air. I use over and over again the liquid air employed in the making. It seems simple enough to me, and the principle is so simple that it ought to have been grasped by any scientific mind at once, but, to my surprise, it has not; what my critics say appears plausible, but in fact their contentions are all aside from the mark, for they have got hold of the wrong end of the proposition, and do not comprehend at all what I am about."

"Then, whatever the modus operandi may be, you do distinctly claim that by the use of any given quantity of liquid air you can make a larger quantity?"

"I positively and absolutely make that claim."

"You claim also that by the use of three gallons of liquid air you have produced ten?"

"I have done that very thing," replied Mr. Tripler with emphasis.

"Does its success as a great revolutionizing agency in modern industry and life depend upon the production of larger quantities from given quantities?" the reporter asked.

"If I had not achieved the abolition of steam in the manufacture of liquid air I should have accomplished nothing. That is, although liquid air might still be of use in some special application—as, for instance, in surgery and medicine—it could not become the supreme and universal power-producer which I expect it to be."

"You believe that it will supersede steam?"

"I do—for the traction of railway trains, for the propulsion of ships and for the operation of machinery in general. As a motive-power its advantages over steam are great. It will cost far less, it will save bulk and weight of plant and apparatus, it will be vastly more efficient."

"Do you expect that its use will enable railway trains and steamships to attain greater speed?"

"I do look for such a result. There is every reason to believe that, given this greater power than steam, higher speed can be produced."

"How would it be used—stored or made in transit?"

"It seems to me to be quite feasible to make it in transit not only on steamers and trains, but also in flying-machines."

"You believe that it brings nearer the day of aerial navigation?"

"Certainly. There is no other agency which, with such small weight and bulk, can produce such motive power as liquid air."

"To what extent has it been used in surgery and medicine?"

"Thus far cancer has been treated with it, and the most gratifying results have been obtained. It is too early to say just what its value is. I do know that its application to cancer has stopped the spread of the disease, and in one case the wound has contracted to a very small one. In another case, after a number of applications to a cancer on the breast of a woman, it fell out into the operator's hand. A number of cases of cancer have been under treatment, and in all which were in incipiency or had not been rendered incurable by the free but vain application of the surgeon's knife, it has arrested the cancerous growth. It has, besides, a marked effect in removing the pain accompanying the disease. A patient suffering from cancer of the nose said that the shooting pains which had previously afflicted him disappeared entirely after the first application of the air. It is quite possible that it may have some special value as a local anæsthetic. It appears certain that gangrene can be arrested long enough for amputations to be made that will save a life. But, of course, I am not a physician or a surgeon, and it is not the curative properties of liquid air which have chiefly interested me. Its use in medicine and surgery is now under careful study by physicians. I may add in this line that liquid air appears to be an irresistible germicide, and that I think I have incidentally discovered means by which it can be so applied as safely to reach the lungs and destroy the bacilli of tuberculosis. Indeed, the physicians have succeeded in applying it to parts of the body where I thought it could not be applied, and, therefore it seems a distinct probability that means will be devised by which disease germs, wherever they may be in the human body, can be reached and killed.

"As for its use for refrigerating purposes, that is as wide as the need of refrigeration is. Ice can be made with it; it can take the place of ice in refrigerators; it will be useful in packing-houses, in markets, in hospitals, and in hotels and houses in summer."

Mr. Tripler referred to Hudson Maxim, the brother of Hiram Maxim, who had been present in the laboratory a few days before, drawn by reports which he had heard of the possibilities of liquid air as an explosive. Mr. Maxim had been told that a small quantity of cotton waste saturated with liquid air had been placed in a small iron pipe, which had then been encased in a larger pipe, as protection from the possible effects of the explosion, and that by means of a long fuse the waste had been touched with fire; he had been shown the fragments of the inner pipe and two great holes which had been blown through the outer one. Mr. Maxim desired to see precisely the quantity of cotton waste which had been used, and to know whether the ends of the pipes had been closed. The merest palm-full of waste had been exhibited, and the ends of both pipes, he was told, had been left open.

"There is no explosive in use," Mr. Maxim declared energetically, "which, in such small quantity and with so little confinement, could have produced anything like this effect." His interest was so much aroused that he at once made an appointment with Mr. Tripler for a business interview on the use of liquid air in combination with an explosive which Mr. Maxim had invented.

Professor W. C. Peckham, of Adelphi Institute, Brooklyn, from whose pen an article on liquid air appears in the Century, has also written on the subject in the Scientific American. In the latter journal he has given this description of the plant and process of Mr. Tripler:

"It (the plant) consists of a triple-air compresser, a cooler and a liquefier. The compresser is of the ordinary form, having three pumps upon one piston shaft working in a line. The first gives sixty pounds pressure; the second raises this to 750 pounds, while the third brings the air under a compression of 2000 pounds per square inch.

"After each compression the air flows through jacketed pipes, where it is cooled by city water. For this work about forty horse power is employed. After the third compression the air flows through an apparatus which disposes of some of its impurities, and it passes on to the liquefier. It is this part of the apparatus which constitutes Mr. Tripler's special invention. By means of the peculiarly constructed valve, whose details are not made public, a portion of the compressed air is allowed to expand into a tube surrounding the tube through which the remaining air is flowing. This expanded air absorbs a large amount of heat from the air still under compression in the inner tube. The contents of the inner tube are thus cooled. In this way the air is brought below the temperature of liquefaction and its pressure is very much reduced, so that, upon opening the valve at the bottom of the apparatus, a stream of liquid air is received, flowing out with scarcely more force than the water from our ordinary city service pipes. Thus the liquefaction of the air is accomplished by the 'self-intensification of cold' produced by the expansion of a portion of the compressed and cooled air, without employing any other substance to bring about this result."

Science Crowds Out Pallbearers.

The latest novelty in the line of funeral equipments has just been introduced into Portland. It is in the nature of a casket-lowering device which does away with the pallbearers lowering the body into the grave. By this new invention the casket is brought from the hearse and placed on the device, which is automatic in its operation, and at the proper time the undertaker touches a spring and the casket is, by invisible means, lowered quietly into the grave. Thus does science smooth our passage to the cold and silent tomb.—Portland Oregonian.

TALES OF PLUCK AND ADVENTURE.

A Trapper's Narrow Escape.

Pierre Le Count, an old trapper, of Wisconsin, who died recently, retained a distinct recollection of almost every incident of importance in his long life. Encounters with fierce beasts were of so common occurrence that it was with difficulty he could be induced to refer to them or to give details once the incident was mentioned. The killing of three bears in as many minutes—one with a bullet from his old-fashioned muzzle-loading rifle, the second with an axe and the third with a knife—was one of Le Count's recollections, and four great scars across his breast, which were visible when his body was prepared for the grave, bore evidence of the fierceness of the battle.

"That happened in 1843," said the old man. "I was trapping on the upper waters of the Chippewa that fall. It was in the latter part of October, if I remember right, and I was following up a line of traps one afternoon when I broke through an old windfall and fell over a log, landing right in a nest of four bears—two full grown and two six-months cubs. I was a trapper and not a hunter, and usually let such varmints alone unless they tackled me; but this time my rifle was up to my face before I knew it, and I brought down the old male with a bullet in his brain. The other three started off, and as they went I let go at one of the cubs with my little trapping axe. There wasn't one chance in five hundred that I would hit him in a place that would hurt him, and I just threw it more under the impulse than with any expectation that I would bring him down. But as luck would have it the axe hit him square in the head and he went down with a roar. His yell turned the old mother into a devil. She had started off on a dead run, but as soon as she heard the cub cry she turned and came back on a gallop. Twenty feet from me she went up on her hind feet and came toward me like a snowslide. She looked as big as a buffalo and as ugly as a catamount. My empty gun was of about as much use as a snowshoe, and as there was no time to think of a tree I just whipped out my knife and faced the music. She was about three seconds in knocking me over the windfall, but as we closed I drove the ten-inch blade of my knife between her ribs. Her nails found my shoulder and breast, and I was laid up eleven weeks. The scratch didn't amount to much. I would have been well in a week, but my partner was a greenhorn from Vermont, and when I sent him out to get slippery elm bark for a poultice he got basswood."

What Pluck Did.

It is the bulldog fearlessness and tenacity of an Englishman that makes him a conqueror even when he faces a mob of barbarians. After the bombardment of Alexandria by the English fleet had driven the Egyptian troops out, the city was looted by thieves and cutthroats. Three or four hundred bluejackets were landed, who stopped the outrages by arresting every person found with plunder in his possession.

On arrest a person was tried by drumhead courtmartial, and the sentence, shooting or flogging, was executed without delay. An Englishman, Mr. Hulme Beaman, who assisted in punishing the robbers, describes in his book, "Twenty Years in the Near East," a dangerous experience from which he was enabled to emerge by cool, fearless, bulldog pluck.

He had been detailed to superintend the flogging of two prisoners and the shooting of a third, the sentence to be carried out at their native village, a nest of thieves. There were ten thousand of the riffraff looking on. Five policemen (Egyptians) and three Englishmen represented law and order. The prisoner, sentenced to be shot for a murder, was fitted into a shallow grave, and the policemen fired a volley, amid the execrations of the mob.

Only Mr. Beaman and the Egyptian officer commanding the police understood what the mob were saying, and the Egyptian begged the three Englishmen to get away while yet there was time. They, however, insisted on seeing the flogging carried out, and remarked that the slightest symptom of fear would excite the mob to murder them.

The flogging exasperated the crowd, already excited by the execution, and they pressed close round the Englishmen.

"It is time to put an end to infidels torturing believers!" said a portly old Arab sheikh, close to Beaman's elbow.

The Englishman seized the Arab, and told the mob they should be ashamed of themselves to sympathize with a murderer and thieves. A sullen silence followed. The prisoner, placed in a carriage, in which a policeman and two Englishmen also rode—the third riding horseback alongside—was driven at a walk through the dense throng to Alexandria, where a courtmartial ordered them to be flogged.

The next year that sheikh called on Mr. Beaman at Cairo, brought with him little presents, admitted the justice of his punishment, and he and Mr. Beaman remained the best of friends. The faintest sign of weakness would have turned that mob into furious wolves.

A Perilous Swim.

While our soldiers and sailors were advancing the flag, last summer, a deed as brave as any of theirs was done by a man of kindred race in far-off Sierra Leone. This thrilling incident of the native uprising is described by a correspondent of the London Standard.

At Rotofunk, a mission station some fifty-five miles from the coast, four of the white missionaries had been literally hacked to pieces by the natives. It was said, however, that Mrs. Kane, the wife of the superintendent of the mission, had succeeded in escaping into the bush.

With the hope of rescuing her, a force was dispatched from Freetown, with orders to push through to Rotofunk without delay. On arriving at the Ribbi River, however, the force found that the natives had collected at Mabang, a town on the opposite bank, and had withdrawn all canoes and boats. As the river is over one hundred and fifty yards broad and six fathoms deep, a serious obstacle presented itself.

The only officer who knew this part of the country was Lieutenant W. R. Howell, of the First Glamorgan Volunteer Artillery, a member of an old Cornish family, who had raised a force of volunteers at the commencement of the rising. He appealed for volunteers to swim across the river and bring back as many canoes as possible, but there was no response, as not only would the swimmers be exposed to the full fire of the enemy, but the river was known to swarm with alligators.

At length Lieutenant Howell, in spite of the protestations of his fellow-officers, resolved to make the attempt himself. The enemy, evidently seeing what he was about to do, assembled in force on the opposite bank, but were driven back some distance and kept at bay by the firing of the British volunteers over Lieutenant Howell's head.

When the Lieutenant had just reached mid-stream and was in the full current, he was seen to swing round rapidly on his back; his leg had being seized by an alligator. It was only by swinging sharply round that he succeeded in freeing himself, but even so his thigh had been torn and lacerated in a shocking manner.

Notwithstanding this injury and the work of the enemy's guns, the gallant officer continued his perilous journey, and at length reached the opposite bank, only to find that his errand was fruitless, as all the boats and canoes had been destroyed.

For more than half an hour he continued his search, but finding the enemy again pressing him, and feeling weak from loss of blood, he was compelled to take to the river again, and got back in safety.

A Hero of the Zulu War of 1879.

It was at the time of the storming of the formidable fortress of Inhlobane mountain. This was a fastness considered by the Zulus impregnable, a huge square mass, with precipitous sides, and a flat top, four or five miles long. At either end was a passage up the mountain, each wellnigh inaccessible.

Major-General Redgers Buller had charge of the operations at one end, and before daylight his troops began the arduous ascent. All went well for a time, when suddenly they encountered a large force of Zulus approaching at an almost incredible speed. It was necessary to retreat, and Buller attempted to accomplish this though the other troops were unable to cover him in the perilous undertaking.

The Zulus thronged around the precipitous path, pouring volley after volley at close range upon the deserted band. But for Buller's heroic exertions the whole force would have been exterminated. He rallied them again and again, cheering and encouraging them by voice and action. Many troops were dismounted, and to these he proved an angel of salvation. He took two who were in imminent danger of being cut off, on his own horse, to a comparatively safe place. He personally saved six lives, besides all that were saved by his orders and his example. Although he had been forty-eight hours in the saddle, and was suffering from a painful contusion, he himself covered the retreat, charging again and again at the Zulus, thus gaining time for his men to extricate themselves from the terrible volley of rocks.

Miss Hanna Shot a Wild Cat.

Miss Ruth Hanna, daughter of Senator Hanna, is the heroine of a wild cat hunt which occurred on her father's game preserve near Thomasville, Ga., recently. For some time a large wild cat has been annoying the other occupants of the preserve, and finally Miss Hanna determined to get its scalp.

Accompanied by Howard Hanna, her cousin, both being mounted on fleet horses, she started on the chase before sunrise. The scent was taken up by hounds, and for nearly two hours the two cousins rode over rough country. Miss Hanna shot the cat when it took refuge in a tree. She rescued the carcass from the dogs and bore it home as a trophy. Sportsmen said it was one of the biggest animals of the kind ever seen in that part of the State.

Too Realistic a Drama.

In Cardiff, Wales, recently, at a tea entertainment given to the parishioners by the National School, the play "Red Riding Hood" was acted. The children had rehearsed in their ordinary dresses, and consequently the wolf-skin was not seen by some of them until worn on the stage. On the wolf's appearance at the bedside of the grandmother, the child who was playing the part of grandmother gave a realistic yell of dismay and scrambled out of bed head foremost; the sight of her fat little form in a tight nightdress caused much laughter among the audience as she disappeared behind the curtains.—Weekly Telegraph.

HORTICULTURE

Weak-Growing Apple Trees.

There is a great difference in varieties of apple trees as to their habit of growth, and judgment is needed in portioning out the manure to be used on each. The strong-growing varieties like Northern Spy will need very little stable manure until they begin to fall from old age. But there are other kinds of slow and feeble growth that even while young can bear some stimulation with stable manure, especially if it is composted, and its deficiencies of potash and phosphate are supplied. Coarse manure ought never to be applied to apple trees at any age. It is the fermentation of manure in the soil that is the prolific cause of the fungus growths that injure foliage and fruit more than the manure can help the tree. The only fertilizers that can be always used with safety are the minerals potash and phosphate.

Seedless Fruits.

We have not taken much interest in talk about seedless fruits, for the reason that the trees or plants on which they grow must be propagated by layers or cuttings, both of which involve much skilled labor. But one advantage may make these fruits profitable. They would be exempt from attacks by insects which place their eggs at the blossom end of fruits, that being the place where the egg may be most safely and securely deposited, and from which there is an open way to the core. The seedless apple would be like a navel orange, solid all the way through, and with no blossom end. But if all orchards were seedless would not the always enterprising insect contrive some way to meet this emergency, and perhaps become more destructive than ever.

Saving Brush For Kindling.

In pruning orchards the branches cut out are often piled in heaps and when dried are burned, often injuring the trees in their vicinity. There is a much better way than this. Apple, pear or peach wood makes when dried a very hot fire, and should be saved for the stove when the branches are too large to cut readily. Even the twigs have their value. They make the very best of kindlings when dried, and if they somewhat crooked they are all the better, because they will not pack closely together as the straight sticks are pretty sure to do. An old story is told of a farmer who once boasted among his companions what a good, patient wife he had. She never complained of anything he did. One of them suggested that the next time he drew up wood for the house, he should make a load of the crookedest sticks he could find. He did so, and as he drew up the load to the house his wife came out smiling to meet him. "Mary, how do you like this load of wood?" was the inquiry, while the farmer's companions stood by expecting a storm of abuse. Instead the reply was given in the sweetest tones, "Oh John! that is capital wood. We always used it at home when I was a girl, and mother used to say that the rounded pieces made the hottest fire because they fitted so nicely around the kettles."

The Care of Roses.

June roses require pruning but once a year. This should be done in spring, as soon as one is able to see where the strongest and healthiest shoots are going to be. The old wood should be cut back nearly half, and all weak, unhealthy branches should be removed. If the branches are thick, they should be thinned out well. Air should have free circulation through the plant.

Hybrid perpetuals require a different treatment. As their flowers are produced on new growth only, they should be grown on a system which insures the constant production of such growth. This is done by making and keeping the soil very rich, and by cutting the plants back sharply after each period of flowering. The term perpetual is a misleading one, because it carries with it the idea that the roses in this class are, under all conditions, ever bloomers. But such is not the case. They bear a profuse crop of flowers in June and July. After that, by pursuing the treatment advised above, they bloom at intervals during the season, but never in such profusion as in early summer. Without the treatment advised they will not do this. Many varieties are shy bloomers, and will only give an occasional flower after July. The freest bloomers are not prolific enough to suit the lover of fine roses, but their flowers, though few in number compared with those of the first crop, are so large, so fine in form, so rich in color, and so fragrant as a general thing that we cannot afford to overlook this class in making our collections of roses. It requires more attention than any other, but the results are well worth all the care we expend on it.

Of the June roses the best for general use are the mosses, in red, pink and white; the Province and the good old damask, both delightfully sweet, large, double, and of fine shape, and produced with wonderful freedom; the yellow Persian, which well merits the name "Cloth of Gold," so rich is the color; and the small low-growing Scotch and Austrian varieties. There are others in this general class which deserve a place in any collection, but I have named those with which the amateur gardener will be most likely to succeed. When he or she learns to grow these well, other sorts can be added with a reasonable chance of success.—Harper's Bazar.