

### TWILIGHT.

...in waves which strive no more;  
The cry of night birds, flitting by,  
And to the day is o'er.

The crescent moon lies, rising slow,  
With one attendant, radiant sphere,  
A cloud across the sunset glow,  
And lo! the night is here!

—NINETTE M. LOWATER, In Youth's Companion.

## The Sword and the Altar.

BY WALKER Y. PAGE.

MONG the almost innumerable incidents of our Civil War, heroic, pathetic and otherwise, which from time to time have found a place in the columns of the leading magazines and newspapers of the day, I have failed to see any mention of the simple story which I am about to relate, which, while it is not wholly destitute of pathos, will at the same time serve to illustrate most forcibly the undecurrent of genuine religious sentiment and personal piety that pervaded all ranks and conditions of the men engaged in that fratricidal strife—an undecurrent none the less deep and strong that the surface was stained with the blood of brothers and strewn with the wrecks of war—the dying and the dead.

In was in the early spring of 1862, when the Federal forces, under Major-General B—, were advancing on that memorable campaign in the valley of Virginia. Every foot of ground, from the Potomac to Stanton, had already been fought over—at one time occupied by Federal hosts, at another by Confederates.

General B— had advanced his lines as far as Middletown, in the upper valley and beyond, while the Confederate army, under General J—, was occupying the Luray valley, near Stanton and Harrisonburg, made famous in history by the not far distant battle of Port Republic.

It was one of those calm, quiet Sunday mornings, suggestive rather of peace on earth and good will to men than of the fiery passions born of war and bloodshed, when General B— rode out from his headquarters in the town, accompanied by his personal staff, on a short tour of reconnaissance. It was a slightly foggy day, and the appointed band, with their bright sabres flashing in the sunlight, and their gaily caparisoned steeds impatient of the control of bit and bridle.

An hour's rapid ride through field and wood brought them in sight of a small country church, nestled away just within the vestibles of a forest, with its modest spire still pointing heavenward, having not yet had the desecrating hand of war laid upon it.

As the cavalcade approached, they became aware of the fact that a congregation had assembled, and that the services had already commenced.

Concluding that he was still by several miles within his picket lines, General B— ordered a halt, and after a brief consultation with his officers, and the stationing of four sentries commanding all the approaches to the building, the whole cavalcade dismounted, and leaving their horses in charge of their orderlies, proceeded in a body to the church.

The beautiful morning service—the distinguishing feature of Episcopal worship—was just ending as this unexpected accession to the congregation entered.

The organ was playing forth its almost human cry of "Jesus Saviour of my soul, let me to Thy bosom fly," and, quietly and with most respectful solemnity, this small but distinguished band of officers took their seats.

Small as was that little country church, there were numbers of empty pews, and those that were occupied were occupied mostly by women and children, with a small contingent of gray-haired men.

There was a most noticeable absence of men worshippers—only two or three old men with whitened locks, and three others, two young men and a manly boy who had seen scarcely fourteen summers, all three dressed in Confederate uniform.

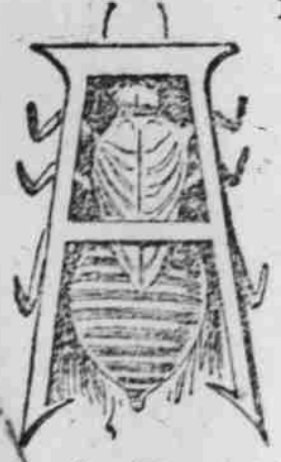
The momentary ripple of excitement occasioned by the appearance of a prostrate man gave way before the spell of pious devotion which pervaded that little sanctuary as though some angel had whispered to their hearts: "Peace, be still."

And now came from the chancel the voice of the aged pastor, as he announced his text—a voice deep, sonorous, and pathetic. Standing there, with his long white hair and flowing beard, his very presence seemed a sermon in itself. But from the moment he announced his text: "Come unto Me, all ye that are weary and heavily laden, and I will give you rest," every eye was riveted upon him, every ear was strained to catch his holy utterances.

He stood within the chancel rail, without manuscript or note. He said: "Come unto me this Sabbath morning, my beloved brethren, with a gracious message from heaven. I come as the ambassador of Christ, to offer rest to the weary, and relief to the heavily laden—rest, sweet abiding rest, to earth's toil-worn and sin-laden sufferers.

"Let us first consider, my brethren, who it is that makes this gracious offer. When I tell you it is Christ Himself, mighty to save all who come unto God through Him, all will recognize not only the ability, but the willingness of the gracious offerer. We all know, my brethren, what rest means to the hungry and thirsting soul. It is His love that offers you the sole condition is: 'Ho, every one that thirsteth, come ye to the waters, and he that hath no money, come ye, buy and eat—yea, come, buy wine and milk without money and without price. Incline your ear and come unto Me, and your soul shall live.'"

"This gracious Saviour offers a balm for every wounded heart in Divine presence this morning—the oil of joy for mourning, and the garment of praise for the spirit of heaviness. Here are many of you, I know, who really need this Divine Comforter.



Those habiliments of woe (the ladies of the congregation were all in mourning) speak to me of bleeding hearts beneath them. To you my text commands itself with special emphasis. The grave has shut forever from your eyes the loved forms and faces of those who were once your joy and pride. Did I say 'forever'? Oh, no! not forever. Hear the righteous Job, and let his holy confidence be your abiding consolation: "I know that my Redeemer liveth, and that He shall stand at the latter day upon the earth; and though after my skin worms destroy this body, yet in my flesh shall I see God, whom I shall see for myself."

"Yes, my beloved brethren, be assured there will come a time when all of these tears shall be wiped away, when our loved and lost ones shall be restored to us, when reunited we shall sing together the song of the redeemed. (Song 1.) This is the only condition. He imposes. Come just as you are. Weary and heavily-laden, it may be, with the burden of your sins, heavily oppressed with sorrows manifold, many of you, like Rachel, weeping for many children, and who would not be comforted because they were not. Come to the only Fountain that can wash away sin, the only true balm and consolation for wounded hearts; come, for earth hath no sorrow that heaven cannot heal.

"The Jesus bids you come. Will you slight His gracious invitation? Come, my beloved brethren, to the table of your Lord, which is spread for you this day; come with your bruised and broken hearts. He has said: 'I will refresh you.' Come to the foot of the cross this morning. View your crucified Redeemer agonizing there. See in His feet and hands the nail prints, and the spear thrust in His side. Behold that crown of thorns, and hear that mocking cry of 'Jesus of Nazareth, the King of the Jews.' Was ever other king so crowned?"

"Let us commemorate, my brethren, that scene in our hearts this day. Let us feed on Him in our hearts by faith with thanksgiving."

The above is but a meagre sketch of the sermon of that eloquent old man. When he closed, there but few dry eyes in that hushed and awed congregation. Perhaps it was expected that the visitors would retire quietly at the close of the discourse. But no! they remained and participated in the ante-communion service, and when the communicants were invited to approach the sacred table, the church presented a most impressive scene. Eight Federal soldiers, together with their general and three Confederate officers, including the boy, knelt together around that holy table and partook of the broken bread and shed blood of a common Lord and Saviour.

Not until all had communed, and the old pastor had invoked a blessing upon all, did these Christian soldiers offer to retire; and when they arose to go, it seemed as though they were loath to quit the sacred precincts of that old country church, where they had doubtless been brought near to God and nearer to their loved ones, worshippers of the same Almighty Father, in temples far away.

With bowed heads and deeply reverential manner, they filed two and two out of the church, led by the commander, the congregation remaining in their pews until all had passed out.

This solemnly enacted, once more in the saddle, formed an imposing group to look upon; the general, man of rare personal presence, seated on a magnificent charger, and surrounded by his staff officers, each of whom was but second to his commander.

The spell of the sanctuary was still upon them, for as yet not a word had been spoken, as they waited in silence for the command "Forward!" It did not come. Their leader seemed pondering upon some thought which had taken possession of his mind to the exclusion, for the moment, of the soldier's instinct of mental alertness.

Suddenly he spoke. "Call an orderly," he said.

From the soldier came forward, he thus addressed him:

"Orderly, go to the church and present General B—'s compliments to the three gentlemen dressed in Confederate uniform, and say that he would be glad to see them for a moment."

Without a moment's hesitation, the three came forward, accompanied by the orderly. After the salute, which was graciously acknowledged by the general and his entire staff, the general, addressing them as "soldiers," said: "I recognize you as gentlemen, because I suppose you cannot possibly be aware that you are several miles within our lines, which have been very recently moved forward. I do not know how you propose to get back to your command, but I do know, that any way you may choose will be attended with much risk and perhaps capture as prisoners of war. After what has transpired to-day, I feel anxious that you should get back without being subjected to the danger and annoyance of arrest and probably indefinite detention." Then, tearing a leaf from his pocket portfolio, he wrote:

Give the bearers safe escort beyond the Federal lines. Signed B—  
Major-General Commanding.

This he repeated three times; only when he wrote the boy's passport, he said: "Confederate boy soldier." He bowed graciously as he handed each one his passport. As he handed the boy his, he said: "My son, you are young to be a soldier; I hope you may live through this terrible conflict to be a blessing and a comfort to your mother." The boy's heart was touched, for as he turned away, unbidden tears were in his eyes.

The general continued: "Gentlemen, please present our thanks to your worthy pastor for his sermon to-day. So, saying, 'Forward! double quick!' and almost before the three Confederates had rejoined their friends in the church, the Federals were out of sight in the distance.

When five or six minutes had elapsed in discussing the event of the day, and before the congregation had dispersed to their respective homes, they were startled by the appearance of a horseman in their midst, riding a noble steed, black as a raven's wing, except where his glowing hide was flecked with foam.

The rider, who, at the head of his command, sat like a centaur, as he drew rein in front of the church, was recognized at once by all the congre-

gation as the famous commander of the "Black Horse Cavalry." When informed of the character of their distinguishing features, the party they were taken in the service of the day, and the generous manner in which the Confederate soldiers had been treated, he made no comment, but merely remarked: "We knew they were here, and rode hard to capture them, and should have done so, but for the time consumed in a skirmish with their picket line.

"After what has happened," continued the famous chief of the "Black Horse," "I am glad that we did not arrive in time. Even now we might cut them off before reaching Middletown; but let it pass! We will return to our headquarters empty-handed, as we came."

The Confederate horseman disappeared as suddenly as they had appeared, leaving the congregation standing in the old churchyard dazed and uncertain whether it had not all been a Sunday morning's waking dream, the baseless fabric of some distorted vision.—Blue and Gray.

### A Durable Watch.

After hanging on the limb of a tree all winter, exposed to the rain and snow, a valuable gold watch and chain belonging to O'Hara Darlington, who lives a short distance above Sharpburg, Penn., has been discovered, and to-day is keeping time just as it did before it was lost early in last November.

Mr. Darlington owns the old Darlington mansion with its broad acres at Gray's Neck, where the noted Irish chieftain bearing the same name is supposed to be buried. Last fall he was in the woods superintending the burning of some brush.

The day was warm and slippy, and on his way home he carried his coat and vest over his arm. At the supper table he had occasion to look at his watch, but it was not in the accustomed pocket, neither was there any trace of the heavy gold chain to which the watch had been attached to the vest. A careful search failed to reveal the missing valuables. Hastily leaving the supper room, Darlington called his hired men, six in number, who in turn gathered together a large number of neighbors.

Procuring lanterns and rakes, the party went to the woods and spent the entire night in searching for the missing watch and chain. Early the next morning Mr. Darlington went back in the woods again, and the search was kept up for two weeks. The entire woodland was raked from one end to the other, but no trace of the watch and chain was found. The search was finally abandoned and Mr. Darlington gave up his watch for lost.

One afternoon recently Fred and Frank Stout, sons of Harry A. Stout, manager of Tibb's glass house, Sharpburg, went to the wood for a stroll. The two boys had not gone far and one of them had his hat knocked from his head by the overhanging branch of a tree. Glancing up to see what he had run against, he was astonished to see right before his eyes and within easy reach a gold watch and chain.

The boys approached the limb to which the watch was hanging, cautiously, lest by some awkward movement a pretty optical illusion should be dispelled. However, they soon became convinced that they had not been made the victims of a trick, and a few moments later they were flying home, with the watch and chain safely stowed away in one of their pockets. When Mr. Stout came home in the evening and was shown the watch he, too, was greatly surprised, for along with a party of other neighbors he had gone on an all-night search for that watch five months before. How the watch came to be in the position in which it was found is a mystery.—Pittsburg Dispatch.

### Transportation of Frozen Fish.

John Wallace, a prominent fish shipper at Kalama, Washington, gives, in ice and Refrigeration, some interesting facts in relation to the rail shipment of frozen fish, which is now of general value. As our readers will know, a large quantity of frozen salmon finds its way from the freezing plants at the fisheries to the East. In shipping the trade recognizes the fact that fish frozen solid will in part refrigerate themselves. They therefore pack them tightly in boxes and load into refrigerator cars. These cars are first reduced to as low a temperature as practicable, and then the floor is covered with several inches of chilled sawdust. The boxes of fish are then loaded in, leaving a space of several inches between the sides, ends and top of the car, which also is filled with cold sawdust. Then the car is closed and sealed. No ice is placed in the tanks of the car, but it has been found by quite extensive experience that fish packed for shipment reach their destination in perfect condition in reasonably warm weather without ice, and that, too, after a passage of fifteen to eighteen days. The saving effected is the first cost of the ice; then cost of freight on the ice, and also a gain of 1500 pounds of fish in lieu of that much weight of ice, which by the practice of the Northern Pacific road is allowed free.

### English Canals.

There are so many navigable canals in England that you could voyage from this Regent's Canal end to Liverpool by barge. So completely was this country covered by these artificial waterways during the canal fever, that there was said to be in 1836, including navigable rivers, no place south of Durham that was over fifteen miles from water traveling. Railways, of course, soon rushed past the slow-moving canals in public favor; but there are still more than 3800 miles of canals open in the United Kingdom, while 120 miles have been turned into railways.

The longest canal tunnel is on the Thames and Severn, and is called the Sapperton Tunnel. Its length is 3808 yards. No horses tug the boats through, but men—like birds for once—rest on wings; that is projecting bits of wood, and "leg" the barges along, or push them with poles. The Lappel Tunnel on the Birmingham Canal, is almost as long, extending for 3795 yards; and it has also the reputation of being the narrowest—only seven feet nine inches in width. The Blisworth, on the Grand Junction, is 3056 yards long, and here steam tugs are used to haul the barges through.—Casell's Magazine.

## SEA MESSENGERS.

### FAST-FLYING PIGEONS IN UNCLE SAM'S NAVY.

#### Encouraging Results Were Obtained Through Their Employment on the Constellation—Successful Tests Made With Ten Birds.

UNCLE SAM'S cruiser New York is to have its pigeon cote and birds for messenger service. The offer of Mr. George W. Childs to provide the cote and that of his friends to furnish the birds for it were approved by Captain Philip and favorably mentioned by him to the Secretary of the Navy, and the official sanction followed.

The official acceptance of the cote and pigeons, and the fact that pigeons were used as messengers in the naval service, are steps, some people think, in the direction of the establishment of National lofts with pigeons for messenger service under Government control.

The cote upon the New York will be No. 2 of the United States naval messenger service, No. 1 being that originally on the Constellation, an affair so small that when in place it rests upon a capstan, but which, nevertheless, will pass into history as the beginning of such service in the navy.

Cote No. 1 is four feet high, three and a half feet wide and four and a half feet deep, with only four nest places, and when first placed on board the Constellation last July for the cadets' summer cruise had its occupants eight youngsters reared by the Naval Academy staff and the old birds.

Of the work of the ten birds Lieutenant W. S. Benson, in his report to the Secretary of the Navy, says: "The cote was kept closed for a fortnight, when it was opened and all were allowed to fly about the vessel, then at anchor off New London. At night all but two, one an old bird, the other a youngster, returned. After this time the cote was open every day, when the weather was good and in a very short time the pigeons became accustomed to the unusual noises of the people about the decks, fapping of sails, washing clothes, etc., and would return to the cote even when the awnings were spread and it was concealed from view."

"Four of these birds were frequently taken ashore, by boats and to other cotes, and they all returned. They were taken several miles overland and out of sight of shipping and still returned. On several occasions they were taken ashore and not liberated till the ship had left her anchorage and was several miles out, under sail and light yards down, and yet they got back in a very good time."

This proved conclusively the usefulness of pigeons as messengers to the vessels at sea, and the experiments of communicating with the shore, from the vessel while at sea were more extended, but through lack of time for preparation, the results, although they surpassed expectations, did not reach the limits of success obtainable under better conditions.

The incentives for the flight from the Constellation to the shore were the prizes offered by Mr. George W. Childs—ten for best returns the day of liberation, a special prize for best word and a special to be placed by Professor Marion.

The entries were ten birds owned by the Messrs. W. Jarmin, W. B. Laudenslager, C. D. Stickney and J. A. Webber, of Atlantic City; six by Theodore P. Green, of the Royal Blue Line, at Woodbury, N. J.; four by L. A. Mehler and W. J. Jones, of Philadelphia; two by P. E. Galligan, Providence; two by Fred Bowers, Fall River and five from the Naval Academy loft at Annapolis.

This table shows the prize winners:

Name	Start	Finish
Mr. Jarmin	Atlantic City Aug. 16	2:37 p.m.
Mr. Green	Atlantic City Aug. 16	6:39 p.m.
Mr. Jones	Atlantic City Aug. 18	11:20 a.m.
Mr. Bowers	Woodbury Aug. 18	Noon
Mr. Jones	Woodbury Aug. 18	5:00 p.m.
Mr. Green	Woodbury Aug. 18	5:40 p.m.
Mr. Jones	Annapolis Aug. 24	3:32 p.m.
Mr. Bowers	Annapolis Aug. 24	4:36 p.m.

The specials for best work were awarded to the two Philadelphia birds, J. Q. A. Herring and Miss Conover, of Louis Mehler.

These birds were in regular training from the Southwest, had never been flown in any other direction, and the week previous to being sent on board the Constellation had returned from High Point, N. C., 387 miles. It was expected that the two would be held until the vessel was off Cape May, but Captain Chester, wishing to advise Philadelphia that the Constellation was on her way, let the two go when off Point Judith, R. I., giving the birds fully 225 miles journey from the northwest. Both returned, one bearing an empty quilt, the other delivering its despatch intact.

This one experience was worth all the experiment cost, as it overturned the pet theory that pigeons need to be taught the way; that to do good work they must always be kept upon the one course, because if put upon another, they would become demoralized.

The birds were let go at 9 a. m. of each day. The Atlantic City returns were about ninety miles from home, when started, the course all over water. Of the ten three returned the same day.

The Woodbury birds were liberated from about fifty miles off the coast, and all sent returned. The New England birds were let go the second and fourth days out, but only one, Miss Read (known at home as Small Hopes) was reported. Morpheus, of the Innes estate, was shot when within sight of home the day of liberation.

The Naval Academy birds were let go off Point Lookout, about sixty miles from land.

Other birds owned by Mr. E. B. Caverly, Washington, were used from the Constellation, but without being regularly entered, and it was to Madame Chester, let go at sea and 200 miles distance, that Professor Marion awarded the special prize placed at his disposal.—New York Herald.

### A Petrified Man.

"A remarkable case of petrification came within my observation not long since," said H. G. Bartlett, who is a guest of the Lindell. "While in Carlyle, Ill., a body was exhumed from a neighboring graveyard, which had turned to stone in the course of six years. The body was that of John Russell, who had died six years before, and his friends lately saw fit to remove his body to a new cemetery. The place where Russell was buried is a low, wet part of the cemetery, with a kind of limo stratum running through it. Time had not played and havoc with any particular part of the burial outfit. The pine box was but little decomposed, and the coffin was in a very fair state of preservation. Though the clothing had molded away from the body, the flesh had undergone a queer and complete change.

"It had taken to itself the property of lime, had hardened into a perfect stone condition, so that four men could not barely move the coffin. Perhaps the frame was more compact than it had been in life, but otherwise the features, according to friends, were as of the living man. The body, however, of Russell's father, by whose side he had been buried, was also exhumed, and showed no trace of petrification. It was in an excellent state of preservation, however, and might have in the course of time undergone the same change. By what wonderful process the body could absorb ingredients that would harden its every pore is more than I can comprehend. It seems to me, and I suggested it at the time, that it might be policy to analyze a portion of the frame and learn again, if possible, the perfect way of preserving bodies."—St. Louis Globe-Democrat.

### People Living in a Volcano.

Thirty miles from the city of Kumamoto, Japan, is the volcano Aso San. This volcano has the largest crater in the world. It is more than thirty miles in circumference, and peopled by 20,000 inhabitants, says the Chicago Times.

Think of walking for miles among fertile fields, prosperous villages, peering into the school-house windows and sacred shrines, all within the shell of an old-time crater, whose walls rise 800 feet all about you. It gives one a queer feeling. Hot springs abound everywhere. In one place I saw the brick-red hot water utilized to turn a rice mill. The inner crater is nearly half a mile in diameter, and a steady column of roaring steam pours out of it.

The last serious eruption was in 1884, when immense quantities of black ashes and dust were ejected and carried by the wind as far as Kumamoto, where for three days it was so dark that artificial light had to be used. But what interested me most was to learn that out of that old-time crater had come not only a stream of pure water, but many kinds of farm product, but young men who, seeking a wider school and home than the mouth of a vigorous volcano, had found their way to Kumamoto, Kyoto, and America, and were now foremost among the Christian educators and preachers of Japan.

The pulpit orator of Osaka, the principal of an English school at Kumamoto, who is a graduate of Andover and one of the Doshisha professors at Kyoto, a New Haven graduate, all came from that valley of death.

### Kangaroos.

The kangaroo plague has always been a great nuisance to the Australian squatters, for on an average these animals consume as much grass as a sheep. It is stated that on a sheep run of 60,000 to 80,000 acres 10,000 kangaroos were killed annually for six consecutive years, and yet their numbers remained very formidable in the locality. In the colony of South Australia hundreds of thousands of kangaroos are slaughtered annually for their skins and the bones offered by the authorities.

The number of these marsupials in New South Wales in 1889 was estimated to be over 4,000,000, and yet about 500,000 kangaroos and 650,000 wallabies were destroyed in the colony in that year. A bonus of sixteen cents for each kangaroo killed is offered in Australia; hence the colonists are gradually exterminating these native animals. Over half a million skins are annually shipped to England and a large number to North America, to be converted into leather.

The macropid include several kinds of kangaroos and wallabies. The progress of settlement in Australia has driven these animals from the more densely populated parts of the Australian continent, but in the country and unsettled districts they are still numerous enough to cause very considerable damage to the natural grasses. So serious has been the injury thus wrought that the colonial governments and run-holders pay a small sum per head for the destruction of the kangaroos.—Hardwicke's Science Gossip.

### Must Have Sailing Vessels.

There is a great deal said from time to time about the decline of the sailing ship and the near prospect of her total disappearance off the seas. But, in point of fact, there never were such a large number of fine sailing vessels, both adroit and building in our yards, as the British merchant service boasts to-day. As our colonies thrive and increase—for with them our chief ocean intercourse lies—so must the demand for shipping necessarily become greater, and there will always exist many branches of commerce in which sailing ships may be far more profitably employed than steamers.

New Zealand annually gives work to a very large fleet of clippers, outside the regular liners, in carrying the frozen carcasses of sheep to the European markets; the wheat trade of California employs every season many thousands of tons of our shipping; the wool exports from Australia, the jute traffic of India and the slowly expanding industries of the South American seaboard, are all trades which still give more work to sail than to steam.

The sailing ship will never again carry passengers, but so long as coal is an average of a pound a ton remains a condition of the employment of the steamer, so long is the clipper ship likely to go on flourishing in those trades where prompt dispatch is not a matter of the very first moment.—English Illustrated Magazine.

## FEEDING AN OLD HORSE.

Requires good feeding to fatten any old animal, and especially a horse whose system has been run down by hard work. The best kind of feeding is oat hay, wetted slightly to make the meal adhere to it, and mixed with it eight or ten quarts daily of ground oats, with two quarts of linseed meal. This is for a day's feeding. Salt should be given in moderation—a small handful with each feed in the morning. At noon loose hay may be given. Thorough currying of the skin is helpful to the digestion.—New York Times.

### VERMIN ON POULTRY.

A very good plan to exterminate vermin from poultry is to take a common oleum, fill it with kerosene emulsion, or whatever you prefer using, go to the henhouse after dark with a bright light—the fowls will remain quiet—apply the oil to the head and under the wings of all fowls of your flock; put it on thick, it will do more good than harm to them, only keep it out of their eyes, ears and mouth as much as possible. Kerosene the roots well and the lice will pick up their traveling bags and depart. Sulphur burned in the henhouse will also rid them of lice, but apply oil to the fowls and the work is done.—New York Independent.

### HOW TO PLANT SEED.

Farmers lose a large amount of seed by covering too deeply, which is money thrown away, says a writer in the Practical Farmer. Red top, tall oat, orchard, meadow, Italian eye, millet grass and red clover should not be covered more than half an inch to secure the largest per cent. of growth. Of the above grasses, all except red clover, if covered from three-quarters to one and a quarter inches, only half of the seed will grow. Of red clover, if covered from one and a quarter to two and a half inches, only the same amount will grow. Timothy and blue grass should be covered only one-quarter of an inch for the greatest per cent. to grow; if covered three-quarters to one inch only one-half will grow. The above shows the importance of having a fine, level seed bed to sow on. There are 960,000 seeds in two quarts of medium red clover, which would give over twenty-two plants to the square foot, more than twice as many as will grow on it. Last spring we used only one bushel per acre and never had a better start. After sowing we go over with a light smoothing harrow.

### RAISING TOMATO PLANTS.

No crops have received such a vast increase in the area planted within the last few years as the tomato. This is partly due to the establishment of canning factories and also to the increased demand for the fruit in city markets. The price of early tomatoes has decreased from 80 to 81 per bushel twenty years ago to \$3 now owing to large shipments of Southern tomatoes, which were formerly unknown. But the average price is higher now and the yield has increased from 100 to 300 or 400 bushels per acre.

The price paid by canneries is twenty-five cents per bushel. Two years ago the farmers of this section tried to raise the price by selling higher prices and made contracts more favorable to the farmers, but they failed, mostly because they lacked confidence in each other; and those who were most enthusiastic in forming the combine were the first to rush to the factories to secure contracts.

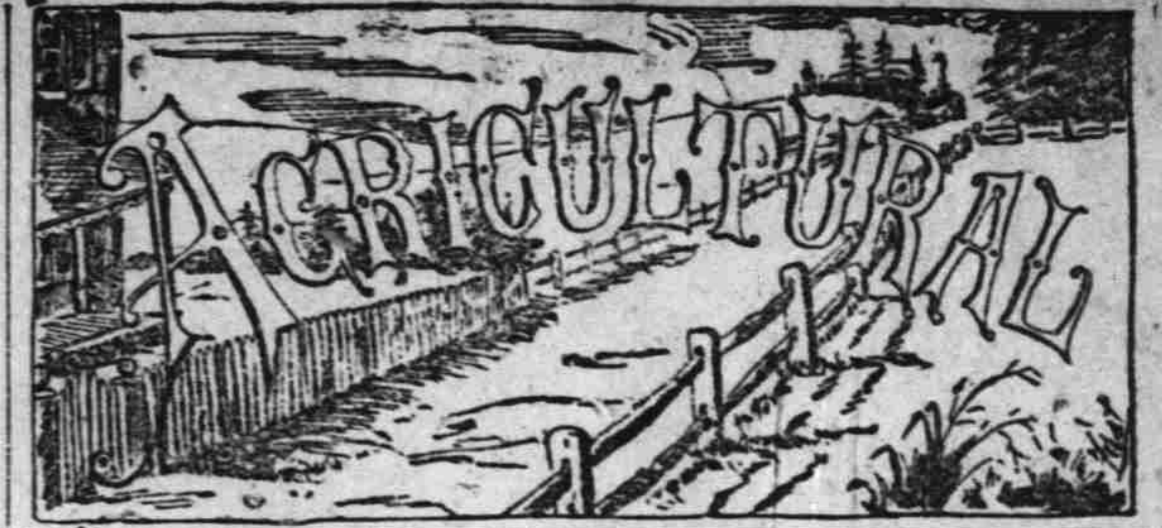
The tomato is very susceptible to the care bestowed upon it. One must try to secure a rapid, vigorous growth during the early part of the season and a slight check then will very materially decrease its yield. If the seed is not sown in a hothouse during March plants can be bought at \$1 per thousand. The houses used to force early tomatoes are generally heated by box stoves which take two foot wood, one at each end of the house under the beds, and the pipes are extended beneath the beds to the further end of the house, gently inclining upward to secure a good draught. The temperature is kept at about sixty degrees and the soil for the beds is composed of equal quantities of rotted manure and sandy soil sifted together.—New England Homestead.

### HUMANE WATERING OF HORSES.

That a horse should never be watered oftener than three times a day is not only a mistaken idea but often an inhuman practice. A horse's stomach is very sensitive, and will suffer under the least interference, causing a feverish condition. Keeping a horse principally on grain and driving it five hours without water is like giving a man salt mackerel for dinner and not allowing him to drink before supper time.

If you know anything about the care of horses and have any sympathy for them water as often as they want to drink. By doing this you will not only be merciful to your animals, but benefit yourself, as they will do more work, look better and live longer. If you are a sceptic and know more about horses than any one else, you are positive the foregoing is wrong because you have had horses die from watering too much, and boldly say that agitators of frequent watering are fools in your estimation and you would not do such a thing.

Just reason for a moment if an animal would have overdrunk and chilled his stomach if he had not been allowed to get overthirsty. A horse is a great deal like a man. Let him get overworked, overstarved or abused, and particularly for the want of sufficient water in warm weather, and the consequences will always be injurious. Sensible horsemen in all large cities are awakening to the advantages of frequent watering. Street car horses are watered every hour while at work. It is plenty



### What old foggy methods amount to may be seen in the change of medical practice to man. Twenty-five years ago a person suffering with fever or pneumonia was allowed but little water, and then it had to be tepid. To-day the best practitioners allow their patients all the cold water they can drink and cold bandages are applied to reduce and control the temperature of the blood.—Colman's Rural World.

### RAISE PLANTS OF FRUIT.

There is perhaps not one person in a hundred who does not like fruit, but not one in ten has all he wants of it, writes Doctor W. F. Bird. Yet every one who owns an acre of ground could have this want fully supplied at a slight cost. Even a village or city lot could be made to accommodate a small strawberry bed, a row of raspberries, a tree or two of plum, peach, cherry, pear or apple and half a dozen grapevines. I believe, however, that few people of moderate means are far better supplied with fruit than farmers, though the advantages of the latter are far greater. The plea of "no time" to look after it might be given if everybody did not know that the plea was learned in younger days when you played so long that there was no time left for the tasks your father assigned you. An acquaintance who has charge of an extensive basket factory finds time to cultivate in a most successful manner more than half an acre of strawberries, doing nearly all the work himself before seven o'clock in the morning and after six o'clock in the evening, and he is nearly eighty years of age. When showing visitors his strawberry beds he seems twenty years younger. Dismissing the meeting of our State Horticultural Society, the last of December, Doctor Vaughan, of the State University, read a paper on the food value of fruit. He produced some facts that all should know. Fruit is not only nutritious, but its health giving properties are far greater than most people suppose.—Orange Judd Farmer.

### THE FARMER'S VEGETABLE GARDEN.

Every farmer should have a good vegetable garden. Nothing will contribute to the health and well being of a family more than an abundance of fresh vegetables, and the cost and labor is comparatively so small that even the busiest farmer can find time to give the garden the necessary attention.

Perhaps the best situation for the average garden is an open, unshaded piece of land sloping slightly to the south. Abrupt slopes in any direction are undesirable because of their liability to wash in heavy rains.

The best soil is a deep, rich, friable loam, and the nearer your soil can be made to resemble this the better. It is impossible to put in the drains, a cheaper system may be had by leaving smooth-bottomed furrows at intervals of from ten to thirty feet, which will carry off the surface water.

The best form for a garden is a rectangle, several times longer than wide, and if arranged for horse cultivation, much time and labor may be saved.

As soon as the ground can be worked in the spring apply well rotted stable manure and plow under. Use the harrow until the soil is thoroughly pulverized, and the surface level. Cover soil on all sides by minute particles of soil from which to absorb moisture. Plaster, wood ashes and other commercial fertilizers may be used to advantage. Sow the wood ashes broadcast just before planting and harrow in.

After the ground is prepared the different seeds should be sown as nearly as possible in the rotation in which they mature, so that as soon as one crop ripens it may be cleared away and a later one planted. When selecting seed be sure to secure it of a seedsman who has a reputation for honesty and fair dealing and select the old approved varieties rather than new untried ones.

It is of the greatest importance that the rows should be perfectly straight, not only in the rotation in which they mature, but because of the greater ease with which they may be cultivated.

Do not think that as soon as you have planted the seed your work is over, for, in truth, it is only just begun. Destroy every weed as soon as it appears. If this is done the later work will be much lighter, and the improved appearance of the garden and improved quality of the vegetables will amply repay you for your work. As the roots of the plants grow larger and stronger cultivate shallower so as not to injure them.

Last, after all the vegetables are safely stored, clean up all rubbish and burn. Give a liberal application of coarse stable manure and plow under so that the frosts and snow of winter may benefit it as much as possible.—Farm, Field and Fireside.

### FARM AND GARDEN NOTES.

Over-feeding is an evil to be guarded against.

Pea-vine hay is recommended as food for live stock.

Sunflower seed is good used now and then for a change.

For good nutrition the ewes and lambs need grain food.

Color has nothing to do with the laying abilities of chickens.

A constant succession of green crops is desirable for soiling cattle.

Oats are recommended for the summer season instead of wheat and corn.

Lined metal is excellent for poultry. It should be given in small quantities about once a week, then it will act as a tonic to the system.

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