WITH THE VETERANS

Now and Afterwards.

"Two hands upon the breast,
And labor's done;
Two pale feet crossed in rest—
The race is won;
Two eyes with coin-weights shut,
And all tears cease;
Two lips where grief is mute,
Anger at peace."
So pray we oftentimes, mourning our lot;
God in his kindness answereth not.

"Two hands to work addrest
Aye for His praise;
Two feet that never rest
Walking His ways;
Two eyes that look above
Through all their tears;
Two lips still breathing love,
Not wrath, nor fears."
So pray we afterwards, low on our knees;
Pardon those erring prayers! Father hear these!

—Dinah Maria Mulock Craik.

Just Before Gettysburg.

Writing to the Philadelphia Ledger, George R. Prowell of York, Pa., gives the following recollections:

An article which appeared in the Public Ledger, and signed by H. C. Potter at the cavalry engagement at Hanover, Pa., June 30, 1863, deserves attention. The facts which governed the legislative committee of appropriations concerning this battle are found in volume 27, parts I and II, War of Rebellion series, published by the government. These volumes contain the official reports of the battle, sent to their superior commanders by Maj. Gen. Kilpatrick, on the Union side, and Maj. Gen. J. E. B. Stuart, on the Confederate side. These official reports and those of Gens. Custer and Richmond, each of whom commanded a brigade on the Union side, and Gens. Chamblias and Fitzhugh Lee, on the Confederate side, are the evidences of what took place in Hanover, June 30, 1863, the day before the battle of Gettysburg opened.

The Union loss, according to these reports, was ten killed, sixty-two wounded and about 100 captured. Gen. Kilpatrick states in his report that he had 4,000 men under his command of two brigades, each having one battery. Brig. Gen. Pennington, now of the regular army, commanded the battery belonging to Custer's brigade of Michigan cavalry. Farnsworth's brigade, afterward commanded by Richmond, had also a battery of six guns, in charge of Capt. Elder. According to their own reports, six of these guns were planted on the heights, 200 yards north of Hanover, and played on the Confederate batteries, south of the town for two hours. Gen. Stuart does not give an official statement of his loss in this battle, but Gen. Payne, now residing in Virginia, told me a year ago that their loss in killed and wounded was not less than 100 officers and men. Adjt. Gall of the Fifth New York cavalry was among the killed. Gen. Payne, mentioned above, then commanded the Second North Carolina regiment, known as the "Black Horse cavalry."

According to his own statement, he was captured while leading a second charge into the town against Farnsworth's brigade. He was taken as a prisoner of war to the headquarters of Gens. Kilpatrick and Custer, in a hotel n Center Square, Hanover. After the enemy made the first charge into the town they held it for one hour, and were driven out by the commands under Farnsworth and Custer. When the fight opened, Kilpatrick, commander of the Union forces, was at the head of his division, six miles northeast of Hanover, at Abbottstown. When he heard the roar of the guns, he ordered the whole line, six miles in length, to countermarch to the scene of the action. He, himself, rode across the fields, his horse jumping the fences, until he arrived at the edge of the town. These are facts stated by the general himself in an address delivered to the citizens of Hanover shortly before his death.

Gen. Stuart commanded the entire cavalry corps of the Army of Northern Virginia, under Gen. Robert E. Lee. Two-thirds of this force was at Hanover on June 30, 1863, according to his own statement, written a few weeks later. The fighting on the part of the Confederates was done by Gen. Chambliss' brigade and the brigade commanded by Fitzhugh Lee. Gen. Wade Hampton, who brought up the rear of Stuart's forces at the time of the battle of Hanover, was guarding a train of 100 baggage wagons, which had been captured a short distance northwest of Washington a few days before. He did not participate in the engagement at Hanover, but arrived just after it had ended. Capt. Cable, now living in Virginia, was then an aide on Gen. Stuart's staff. He states that he was seriously wounded by a saber cut over the left shoulder, while leading a charge when the battle began. At the same instant several Confederates were killed. They were buried near the spot where they fell, but their remains, in 1866, were removed by their friends to their former homes in the South.

At this time, June 30, 1863, Gen. Stuart was cut loose from communication with the Army of Northern Virginia, under Gen. Lee. In order to protect his wagon train and his mounted men, he made a tour through Jefferson and New Salem. When he arrived within sight of York he heard that Gen. Early's division, with 9,000 men of Ewell's corps, had fallen back from York toward Shippensburg. He proceeded northward with his three brigades to Dover, seven miles northwest of York. Here, on July 1, the day the battle of Gettysburg began, he paroled 140 Union prisoners whom he had recently captured at Hanover and vicinity. It was at this point that Col. Venable of Gen. Robert E. Lee's staff, attempted to reach Stuart at Dover and order him to move toward Gettysburg, but he was unable to pass through Kilpatrick's line, which was a few miles to the west. Stuart was still unconscious of the whereabouts of the remaining part of the Army of Northern Virginia. He proceeded northward through Dillsburg to Carlisle, where his advance, under Fitzhugh Lee, shelled that town and burned the government barracks there. Meantime the battle of Gettysburg was in progress. Stuart then hastily marched toward the scene of the battle, arriving there on the evening of the second day. It is this fact that gives importance to the cavalry engagement at Hanover, and makes it one of the most historic spots in southern Pennsylvania. It is this fact that led the Pennsylvania legislature one year ago to pass a bill, which was signed by the governor, appropriating $7,500 for the erection of a cavalry statue, or monument, in Center Square, Hanover, where a part of the hand-to-hand fighting took place. Of the sixty-two Union soldiers wounded, the official report shows that thirty-two were saber cuts. Gen. Pleasanton, who commanded all the cavalry of Meade's army at Gettysburg, stated to me, at his home in Washington, in 1892, that the engagement at Hanover was in every sense a battle, and was one of the chief causes that decided where the great contest between the invading army, under Lee, and the Army of the Potomac, under Meade, was to take place. His headquarters on June 30, 1863, when the fight took place at Hanover, were sixteen miles to the southwest, at Tarrytown, Md., and near the headquarters of Gen. Meade, the Sixth corps, under Gen. Sedgwick, was twelve miles south of Hanover. Gen. Slocum, with the Twelfth corps, was at Littlestown, seven miles southwest of Hanover. These facts, obtained from official reports, will show the condition of affairs when the battle at Hanover ended and Stuart found himself in close quarters and in danger of capture.

One Christmas Week.

"Speaking of Christmas week," said Sergeant Sam Grimshaw, "companies B and C of our regiment, the Fifty-second Ohio, were on picket duty on Christmas eve, 1862, on the College pike, west of Nashville. It was cold for that latitude, and we had a good fire. Doc Mercer wrapped up in his blanket, and lay down, feet to the fire. As he went to sleep he straightened out, getting his feet so close to the fire that the heat drew the soles of his shoes off, and almost blistered his feet. When he awoke he couldn't grasp the situation and jumped up and went through so many contortions that the boys thought he had gone daft. They didn't know he had hot feet and at first he had little sympathy or assistance. But when the boys understood the case, Doc was well cared for and went to camp the next morning with his feet done up in rags.

"While Bob Mercer was standing his trick on the pike, between 8 and 10 o'clock p. m., there came to the lines, from the city, the colonel of a cavalry regiment, camped that night out near the college. The colonel had gone to the city on a pass in the afternoon, had overstayed his time, and was returning without the countersign, but pretty well loaded with commissary whisky. He undertook to ride through the lines, whether or no, and Bob pulled down on him, but his musket missed fire. The two men standing with him came to a ready, when the colonel sobered on the instant, wheeled his horse and wanted to know if they were going to kill him then and there. Mercer answered yes, if he tried to force his way through the lines. He went back to headquarters and in about an hour came out with the countersign. Who was he? We never knew. The cavalry regiment was at the college, ready for the advance the morning after Christmas, and went out of our range to do a good deal of fighting in the next week."—Chicago Inter Ocean.

Sheridan's Ride.

The claim made by George Mixell that he started Gen. Sheridan on his famous ride is criticised as follows by a Chicago Chronicle correspondent:

"The letter on Sheridan's ride recently published contains more misstatements or inaccuracies than is often printed in such small compass. Such statements are now passed for facts and a generation has grown up which, while much interested in the history of the war and, in fact, eager to read reminiscences of the actors in that mighty struggle, has not the means to differentiate fact from fiction.

"In the first place, the writer of the story places the historic Cedar creek 'near Winchester,' when it is twelve or more miles from Winchester and to the south. 'City Point, where Grant was at the time, is about twenty-five miles south and west of Winchester, in West Virginia.' Think of that! The story has Sheridan leave Fairfax at 2 o'clock in the morning, when Sheridan in his memoirs says that he left Winchester at about 9 o'clock in the morning.

"This man says he (the teller of the story) was at Fairfax, 'and gleefully relates how Sheridan seemed put out when he heard the sounds of cannonading, as if distant thunder, when aroused from sleep.' No wonder 'this incident is the old veteran's most treasured memory of the war,' and, again, no wonder 'he delights to tell how he sent Sheridan galloping down the valley at 2 o'clock in the morning of Oct. 19, 1864.' Sheridan went up instead of down the valley."

Pat's Advice.

When Grant's army left Milliken Bend, on the Mississippi river, to march by Vicksburg and eventually to cross the river at Bruinsburg, the roads were almost impassable, and teams, pack mules and men were plodding along toiling with all their patience, patriotism and endurance. Our attention was attracted to an unlucky cook whose overburdened and poorly fed mule had fallen with its load of blankets, camp kettles, mess pans, skillets, etc., and was floundering half buried in the mud, the disconsolate cook still holding on to the rein. An interested group of soldiers had gathered around and, presently an Irishman came up and was eyeing the situation with keen interest. The cook broke the silence: "Pat, what would you do?"

"Well," said Pat, "I think I'd turn him over and sop him on the tother side."

New Governor at Leavenworth.

The board of managers of the National Homes for Disabled Volunteer Soldiers has appointed Col. Sidney G. Cooke to the governorship of the National Home at Leavenworth, Kan. The former governor, Co. J. G. Rowland, died a few months ago.

Old Timers Did Good Work.

Truman Newton of Vergennes, Vt., has recently shingled his house, the first time it has needed it in sixty-two years. The shingles that were on it were made by his father, and were put on with old-fashioned nails.

Mule's Long Service.

Will Beesnor of Henry County, Mass., has a Missouri mule that is 36 years old. The animal still does its share of farm work.

AGRICULTURE

Indiana Corn Growers Meet.

The Indiana Corn Growers' Association met at Indianapolis early in January.

A number of very interesting papers were presented and much of the time at the first session was devoted to the discussion of a score card, Indiana's exhibit at the world's fair and the raising of corn for feeding purposes. One of the most interesting talks was that by F. H. Rankin of the Illinois agricultural college. He insisted that the score card is of importance in that it calls attention to the essential points to be observed in the selection of seed corn. According to the Illinois score card a perfect ear should be 10 to 12 inches long and 7½ to 8 inches in circumference. The ear should yield 88 per cent of grain. It should taper but slightly and should be well filled at both ends, with straight rows and wedge-shaped grains. Corn growers should select seed ears of the same color, uniform in size, with grains as nearly of the same size as possible. Mixing should be avoided, and the best way for the farmer to improve his corn is by very careful selection.

Prof. A. T. Wiancko, in discussing the breeding of corn, stated that the experiment station at Purdue is now carrying on a number of breeding experiments in increasing the different constituents of corn. If a farmer wants to raise corn to sell to a starch factory, he should select seed in which there is an unusually large amount of starchy matter in the kernel. For feeding and fattening, corn should be selected with large hearts and a considerable percentage of protein.

Feeding cattle for the best markets was discussed by A. O. Lockridge. He advised selecting two-year-old steers, with special reference to their ability to produce high-priced cuts of meats. When preparing animals for export trade farmers should use whole corn which has been crushed or soaked, as this will be made use of freely by healthy animals. The ration of fattening cattle should be a varied one, to keep up the appetite and induce animals to eat large quantities. He does not believe in feeding silage largely to animals intended for export, but prefers plenty of bluegrass pastures. Fattening cattle should be dehorned with a saw and should be sold when they reach 1,400 pounds.

Prof. J. H. Skinner of Purdue university suggested that clover hay, bran and other protein feeds should be fed with corn, in order to make beef most economically. Great care should be taken in feeding young animals to supply the elements most essential to rapid growth.

At this corn growers' session farmers and stockmen were urged to attend the second corn school and stockmen's convention, held under the auspices of the Corn Growers' association at Purdue university, Jan. 25 to 30. The best authorities on corn growing in the middle west will be present and give instructions.

The following officers were elected: President, H. F. McMahan of Liberty; vice president, B. F. Maish of Frankfort; secretary, Scott Meiks of Shelbyville.

Growing Peanuts.

The peanut as a forage and pasture plant is rapidly, and deservedly, becoming popular with the Texas farmer, says B. C. Pittuck in a Texas bulletin. Being a legume, it exercises a beneficial effect on the soil, and at the same time furnishes a highly nitrogenous feedstuff, greatly relished by stock as green feed or as hay. Peanuts are partial to loose soils of a light color. The land should be well drained and not too rich in vegetable matter. Barnyard manure should be used only in small quantities. Phosphoric acid and potash are the main elments of plant food required by the peanut for best results. To much lime in the soil will result in a large per cent of unsalable nuts. Wood ashes, Kainit, cotton seed meal, acid phosphate and the manures will be found profitable applications when used judiciously. Dark soils have a tendency to produce dark-colored nuts, and light soils light-colored nuts, the latter having a higher commercial value, though for feeding purposes the vines and nuts are practically of the same value. Peanuts should be planted early in the spring after all danger of frost is passed, in rows three to three and one-half feet apart and eighteen inches to two feet apart in the drill. The land should be finely pulverized. For pasture and forage purposes the Spanish peanut is most generally used, as its habit of growth is more upright than the larger sorts, and consequently much easier harvested. The general method of flat cultivation given the corn crop will answer every purpose with the peanut. Keep the weeds down and stop the cultivation as soon as the nuts begin to form. Peanuts should be harvested before frost, as the crop will suffer serious injury when subjected to such conditions.

How Trees Breathe.

Besides giving out oxygen in assimilation, trees also take in oxygen from the air through their leaves, and through the minute openings in the bark called lenticels, such as the oblong raised spots or marks on the young branches of birch and cherry and many other trees, says a student of tree life. All plants, like animals, breathe; and plants, like animals, breathe in oxygen and breathe out carbonic acid gas. This process of respiration or the breathing of the tree goes on both day and night, but it is far less active than assimilation, which takes place only in the light. Consequently more carbonic-acid gas is taken into the tree than is given out, and the surplus carbon remains to be used in growing.

Too Close Tree Planting.

We should make 32 to 35 feet the minimum distance apart in planting, and we will always get better results from 50 trees to an acre than from 75 to 100. Trees planted too close will not do well when they get to bearing age. The branches interlace and shut out the sunlight that should get in about them, and if you could see the roots, they are interlaced far worse than the branches. Then, it is impossible to spray such an orchard properly.—G. C. Caston.

The greatest nations of Europe strain every effort to make science the handmaid of war. Let it be the glory of the American people to make science the handmaid of agriculture. —Jerry Rusk, ex-Secretary of Agriculture.

A woman will always boil over if her husband will refrain from getting hot when she begins to roast him.

LIVE STOCK

Some Feeding Points.

In an Oklahoma bulletin we find the following conclusions on the value of various substances for feeding: Where corn can be raised with reasonable certainty of a good crop it will be found the best fattening food. Its fodder and stover are also valuable foods, although the long time after ripening before winter feeding begins causes more loss in the shock and much more to the standing stalks than in more northern states. As the kernels become very hard when thoroughly dried, grinding the corn is a help; soaking is a fair substitute for this. Where hogs follow cattle there is little loss when either ear or shelled corn is fed. Kafir corn is a healthful, palatable and nutritious food, but its feeding value is somewhat less than that of corn. As shown both by feed lot trials and by digestion experiments there is a great loss in feeding this grain unthrashed to cattle—in some cases of sixty per cent but hogs will utilize most of this waste. There is little difference in the waste whether the grain is fed unthrashed or thrashed. In some cases, at least, the loss is greater when soaked grain is fed than when it is fed dry. In some trials steers fed Kafir meal made better gains for a long time than did those fed corn meal, but this was not true in any extended period. Hogs digest the unground grain better than do cattle. In general hogs have made gains from four-fifths to five-sixths as great when fed on Kafir as when fed corn. Sheep seem to digest Kafir better than any other class of farm animals. Kafir stover apparently has practically the same feeding value as corn stover and often is in better condition. Running the entire stalk through a thrashing machine puts the stover in excellent condition. Alfalfa is the best hay for either horses, cattle or sheep and is a help to hogs during winter.

After the Pigs Come.

As the little fellows get older, they drag more heavily on the parent, who should now be fed liberally, says a Canadian swine raiser. When they show signs of picking for themselves, a few grains and sliced roots may be thrown to them on a clean floor, when the mother is out. Or have a room partitioned off, and an opening for them to creep through, where they can eat without molestation, or drink from a small trough. Do not give them too much food, or let it lie and become stale. Feed the mother well, and this is a very good way of feeding them. They may be weaned any time after four weeks. Eight weeks old is a good time to wean them. In weaning them the sow should be let in with them at least twice, a day or two intervening. At this time they demand your most particular care and attention, as by exposure to cold and damp, over-feeding and under-feeding, it is possible your hopes may be blighted. Feed warm milk, slops from the kitchen thickened slightly at first with shorts, bran, and a little oat and barley meal. Feed grain sparingly for the first one hundred pounds of their weight. Give them all the roots they will eat also a little clover, green or in hay, and an occasional feed of ashes, sulphur and salt. Oats, barley and peas, mixed and chopped make a good feed, but rather expensive. Give less of peas at first, and increase as nearing the finishing period. One of the best lots I ever had was a spring litter fed on soaked peas, slop thickened with a little shorts, and finished on grass.

Live Stock Husbandry.

One of the important foundation stones of agriculture is live stock husbandry. By many this is believed to be the most profitable branch of farming. Some practice the feeding of all they grow to live stock raised on their farms. Certain it is that the nation that tries to farm without live stock runs the chance of impoverishing its lands. This has sent more than one nation into decay. Still, to raise live stock successfully one must have a good brain and lack laziness. There are some farmers that hold to grain growing because they have to work only a few months out of the year and have the balance of the time in which to rest. Such men are blamed, sometimes because they do not go into stockraising in addition to grain-raising. The probability is that if they did go into the raising of stock they would neglect it and so lose money. By bad methods it is easy to lose money rapidly in stock-raising. Every man that is willing to study his work and has had experience in the general work of farming can go into the business of breeding and feeding farm animals with good chances of success; but before taking such a step the full cost should be counted.

The Unbalanced Ration.

The fact should not be overlooked that there are cases where the balanced ration is not the most economical. This will be influenced by the relative market price of feeds and the animals that are to be fed. For instance if corn is very cheap the feeder will not be justified in paying high prices for mill stuff to feed in very large quantities to fattening steers, unless it be for the finishing period. The carbohydrates that he would waste are too cheap in 15 cent corn to justify him in buying high priced protein to save them. But generally, feed containing enough protein at a reasonable price can be had on the farm at a price that will justify an approximate balanced ration in the majority of cases. Besides the loss of food nutrients, there are detrimental results caused by an unbalanced ration. Growing stock are stunted; dairy cows are dried up, in breeding stock the animal system is weakened, etc. For such cases as these the balanced ration will pay even if it is necessary to purchase such feeds as oil meal, etc., that are generally considered high priced.—F. C. Burtis.

First Laying of Ducks.

From the Farmers' Review: Our experience with ducks is that they do not make any nests at the first laying or early in spring, and if it is desired to get these eggs, the ducks must be penned up every night, as they lay very early in the morning. If running out, they will lay in the brook or wherever they may be. Later in the summer some of them will make nests and will probably get broody. Straw or leaves or almost anything will serve as material out of which to make nests.—Charles Smiley, Parke County, Indiana.

Catholics in America.

There are about 11,000,000 Catholics in the United States.

HORTICULTURE

Value of Style in Fruit.

Benjamin Newhall, a Chicago fruit commission merchant, in a paper contributed to the last session of the Illinois state horticulturists, said:

Quality pays; style pays still better; and both together best of all. You growers know this, but probably we dealers realize it even more fully. For instance, recently we received a carload of apples most of which sold at $3 per barrel, but in that car were some that sold at $1.50 per barrel. Both were called No. 1, but the $3 apples were high in flavor and color, and perfect as to shape, put up in an attractive package and finely packed. The $1.50 apples were sound, but were dull and uninviting in color, of poor flavor and put up in a slovenly looking package and were poorly packed.

We sold Seckel pears at $3 and $2 per barrel this fall on the same day, and we got full price on both. It was quality and style that made the difference. Not once, but many times we have sold Jonathans, sound and freshly received the same day at $2 and $10 per barrel. In fact, this very thing is one of the chief annoyances of our trade. Few shippers realize the value of just a little of Nature's tinting on the skin of an apple or how slight a difference in this line will mean a difference of from 50 cents to $1.00 per barrel in the price.

"You say you sold John Jones apples at $5 straight and for mine you got only $4, both packed by the same man on the same day, the orchards within a mile of each other. How is this?" What a hopeless task to reply to such a question! "My apples were just as good as his, just as large, just as smooth, just as carefully packed, with just as good cooperage." All this is true, my friend, but they were worth $1.00 per barrel less in our market just the same and are harder to sell at the difference. And why? It is excellence set off by style. That is why the fruit from sunny valleys of the far west outsells the best selections of the middle west. It may not have more intrinsic merit, but it has style.

Quality pays. Choose your varieties wisely; take pains with your orchard treatment. Study the market needs; but above all cultivate style in fruit packing and package, and when to this style you add quality, you have a combination that will sell your fruit at prices that will often surprise you.

Forest Regeneration.

The object of forestry is to utilize to the fullest possible extent the product of forest land, and at the same time to maintain the conditions which render forests beneficial, says a report of the Rhode Island station. Utilizing the timber is as much a part of forest management as is inducing the growth of trees and protecting them during their growth. The important consideration of how to replace the trees when cut is known as forest regeneration. Two methods are available, the artificial and the natural. Artificial regeneration may be by means of seeds sown and covered by hand or by means of planting trees. Both these methods are too expensive to be used except where no others will succeed. Manifestly on the open prairies they are the only methods available when forests are to be started on land where no trees now grow. Natural regeneration is the more common method, and the one more practicable under normal forest conditions. It may be by means of shoots or by means of seeds. The former utilizes the vigorous shoots which spring up when most broad-leaved trees are cut. The resulting growth is known in forest literature as coppice. The method cannot be used with conifers, and not all broad-leaved trees can be depended upon to send up satisfactory shoots. Such shoots make a more rapid growth in their earlier years than seedling trees, but they generally attain their best development within thirty years and are not suitable for the production of large, long-lived trees. Coppice growth, therefore, is adapted only to short rotations and the production of such classes of timber as basket material, firewood, fence posts, telegraph poles, hop-poles, etc. In the regeneration of forests by seeds nature is again ready to help, for she contrives many ways in which seeds are scattered that they may find places to grow. The wind is ever ready to carry them, and naturally the trees which become most widely scattered are those bearing light seeds with some kind of appendage enabling them to be easily carried by the wind.

The English "Crab."

A recent report of the Virginia station says: "This variety is only a small form of the common apple. Tree hardy but a slow grower; upright, forming a roundish head. Trunk measures 13½ inches at base and about 11 inches at head. Planted in 1891 Thus far has not shown susceptibility to disease. First bloom noted in 1895, and trees bore a small crop that year. Small crops produced again in 1897, 1899 and 1901. At no time has this variety borne a heavy crop. Fruit larger than ordinary crabs, dull red in color and of excellent quality for eating out of hand. This is a winter variety and will keep till January if storage conditions are favorable. It has value for amateurs, but we do not recommend it for general planting.

The Present Stock Feeder.

There was a time when the feeding of live stock could be carried on in an ignorant and haphazard way and yet afford the feeder a profit. That was in the days when land was cheap and there was little market for grain, chiefly because it could not be hauled to where it was needed. That day has passed, and both land and grain are in demand and showing a strong tendency to rise still higher. The haphazard feeder long ago went out of the business on account of non-success. The successful stock feeder of the present day is able to discriminate between good and poor animals and to tell the difference between good and poor feeds. He is able to sit down and combine a ration that will give the best possible results. He no longer believes that one kind of hay is worth as much as another kind. And how came he to know these things? By taking heed to the work done by the scientist in the analysis of the different feeds. The first-class feeder of cattle no longer believes that timothy hay is the very best hay for beef making. He has learned that clover and alfalfa far exceed it in value.

It's the uncertainty as to whether the mystery in a woman is false fire or the beacon light to bliss that renders her so fascinating to a man.

FARM SCELLANY

Breeding Army Horses.

It is a well known fact to most of our readers that during the recent war in South Africa, Great Britain obtained most of her cavalry, artillery and transport horses and mules in this country. It will be news to most of them, however, to learn that our horses proved more lasting and reliable than those obtained in any other country. It is even said that American horses were found better than those bought in Canada, which is difficult to believe but is perhaps to be explained on the score that Morgan blood is found in the foundation stock of many of the horses procured in our own country, while Canada cannot boast of such capital foundation material. The old Morgan has given us perhaps the best procurable army horses. They had plenty of lasting, staying abilities, good, sound bone, fine, good-wearing feet and lots of nerve for work, combined with docility of disposition which is highly desirable. It is further alleged that certain portions of the west have been found peculiarly adapted for the production of sound, hardy army horses. In Montana especially were found hundreds of sturdy, fleet and sound horses that gave the best of satisfaction in the field and one naturally turns to that part of the country as most suitable for the production of the class of horses in question. To come to such a conclusion is however quite erroneous in our opinion. The fact that Montana has given perhaps the best class of army horses to date is largely explained by the fact that the native mares have been of the tough broncho sort used to hard living and exhaustive runs over extensive territories. Again the mountainous pastures in high altitudes have developed good lung power while the lime formation has doubtless had much to do with the production of fine flinty bone and sound, tough hoofs. There are many equally good locations in the country for the production of such horses. Such districts are found, where nitrogenous foods luxuriate and where the climate is somewhat rigorous and the soil full of mineral matters rather than rich in humus. There are millions of acres of such land in northern Wisconsin, Minnesota, Dakota and Nebraska, while over the line in the Alberta country settlers may well assist in the production of army horses of the right type and character. It appears evident that before long the government will give special attention to this business of army horse production and appoint ex-officers to work with a commission of expert horse breeders towards the selection, approval and registry of stallions and mares suitable for the production of the class of horses required. The right sort is said to be dying out, on the plains, and it is time to commence stocking suitable districts with the chosen class of breeding animals for the work in question. What the breeding stock will be remains to be seen but it is likely that preference will be given to horses possessing some Morgan blood, although a full supply of such horses will be hard to find. When such have been located it is proposed to register them and provide for standard fees to be charged for the service of the stallions upon approved mares also recorded and to keep track of the progeny which will be bought for the army at fair prices to be decided by market values at the time of purchase. Montana should take a lively interest in this proposition, but the other districts we have indicated should certainly have a share of the business and should the government decide to establish breeding farms in suitable districts we would like to see one placed in each of the locations we have suggested. We do not mean that these are the only desirable locations for such breeding farms but we do consider them eminently well adapted for the production of the class of horses needed in the army. The soil and climate are just what is required and the horses there produced will certainly be sound in wind and limb, possessed of stamina and vim and sufficient size to meet all of the requirements. We understand from the Chicago Tribune that Representative McCreary has introduced a bill in congress looking to government encouragement and partial control of this class of breeding.—Farmers' Review.

At Farrowing Time.

In an address to Kansas farmers John Cownie said: Have your pigs come about the same time—within a week or two—so that they will all be of one age and one size. That is one great secret in successful swine raising. It will save a great deal of difficulty at farrowing time. I used to have a great deal of trouble at farrowing time in losing sows. I remember one year I lost fifteen sows that could not give birth to their pigs. You have all, no doubt, had trouble of that kind. I have lost some valuable sows, finely bred, because they could not give birth to their pigs. At that time I did not know what was the matter. Now I know all about it. That may be saying a good deal. But I never lose a sow now in farrowing—not one. There is no grain produced that is more fat-producing than corn. We fed our young hogs altogether too much corn. The reason that these sows died was that they had been fed too much corn and their pigs were too large and fat, and they could not give birth to them. I had fed corn, as my neighbors had done. Now I scarcely feed an ear to my brood sows. They are not fed a great deal and there is no trouble in farrowing; haven't lost a sow for a dozen years. I feed a sow to make bone and muscle. I am not feeding the sow then; I am feeding the embryo pig, and what I want in that pig is bone and muscle. I remember once I had fifty sows farrow in two weeks; had as fine a lot of hogs as I ever raised. I was proud of those hogs.

Difference in Soil.

One field of a farm may have a soil that will hold but half an inch of water, while another will hold two inches out of the ten inches that may fall. Crops grow differently on these two soils.

The finest class of animals of any bred will deteriorate if poorly fed and cared for. This is the real cause of many a man's failure to get out of highly-bred animals as much as he expected.

Prof. Shaw says: The breeders of the Saxony Merino sheep obtained a finer staple in the wool than did the breeders of other types of Merino sheep, but they did so at the sacrifice of vigor.

NOTES ON SCIENCE

Measures Distance at Sight.

A rather interesting distance-measuring telescope has been recently patented which would seem to have many practical applications. The fact that the distance of an object—say a ship at sea, or a spire seen above the houselops—may be determined instantly and without calculation by this device places the glass in a class by itself. The instrument is based on the law of optics, that if the same object be viewed simultaneously from two different positions, the distance between the two lines of vision will be proportional to the distance of the object. In other words, the angle formed by the two lines of vision will vary as the distance. In practice, a long telescopic tube is provided with two reflectors about thirty-six inches apart, and an object glass which receives the two reflected images of the object observed. These images, owing to the disposition of the reflectors, appear on the object glass one above the other, and the horizontal distance between them is proportioned to the distance of the object. A micrometric scale—determined by actual measurement for one point, say a mile, and computed for the other distances up to the limits of visibility—is superimposed on the object glass, so that the distance of the object viewed can be read off accurately. For convenience

Distance-Measuring Telescope.

the telescopic tube is supported on a standard in such a manner that it can be readily lowered, or raised, or adjusted instantly to any part of the horizon. Suitable lenses are used to enable distant objects to be viewed without effort.

Invented by a Woman.

It is so easy in cities and towns whenever a loaf of bread is needed to slip out to the store and buy a fresh one that comparatively little baking of bread is done in the homes of the country nowadays. Once in a while some one will complain that baker's bread is not as good as home-made, and call for the latter, but the exception to the rule is so slight that it makes no impression on the enormous quantities of bread that are baked in the large factories every day. Indeed, the demand for the manufactured product has grown to such an extent that it would be almost an impossibility to find bakers enough to knead the dough by hand in the old-fashioned way, and machines have had to be introduced to mix up the flour and water and rising material. One machine shown in the drawing has just been designed by a woman for this work, being operated on much the same principle as the old method of using the fists in doing the mixing. The driving shaft is geared to the dough container, so that the latter is revolving constantly, and each plunger has a cam body on its upper portion, which is grooved on its face in such a manner that the plunger rises and falls as the shaft revolves. When it becomes necessary to remove the mixture from the container the plungers are elevated simultaneously by means of the counterpoise weight, the gear wheels which revolve the plunger shafts being disconnected as the plungers rise, and remaining out of gear until they are again lowered into the mixing trough.

Maria E. Beasley of New York City is the inventor.

Electricity a Disinfectant.

An Italian scientist claims to have established that electric tramways are great mediums in the disinfection of towns. He points out that the electric spark, which is so frequent an occurrence to the overhead trolley, and the emission of light from the car wheel when the rail is used for the return current transform the oxygen of the air into ozone which has a purifying and disinfecting influence. The high discharges, he says, are frequent enough to influence greatly the atmospheric constituents, especially where the line passes through narrow thoroughfares. They become antiseptic agents.

With the Scientists.

The Smithsonian Institution's expert pronounces the meteor which fell at Lodi, Cal., not only genuine, but the largest ever found in the United States. It weighs between ten and twenty tons.

Dr. Johnstone Stoney has calculated by application of the dynamic theory of gases that any water vapor introduced into the atmosphere of Mars would escape into space, the gravitation there being insufficient to retain it.

M. Bernard reports that he finds arsenic is a constant constituent of the organism, and that all parts of the hen's egg contain appreciable quantities of arsenic. In the 1-200th of a milligramme found in one egg from one-half to two-thirds is found in the yolk.

Tiffany's diamond expert recently, during a lecture in New York city, showed radium glowing through a glass tube, a rubber tube, a piece of lead pipe, a piece of iron pipe, three copper cylinders and a jar of water, the wonderful substance apparently shining as clearly through all of these substances at once as it did through any one of them.

None for Her.

"Really, Mrs. O'Toole," said Mrs. Naybor, "you should send little Denis to the kindergarten."

"Phwat koind av a thing is that?" demanded the contractor's wife.

"Kindergarten? Oh, that's simply German for—"

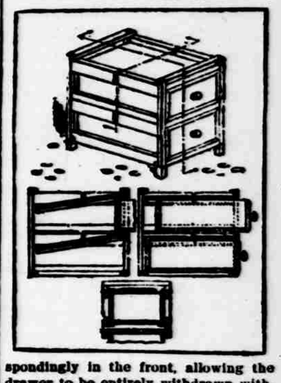
'Enough said, ma'm. Oi'll hov no Dutch in moine, thank ye koindly, ma'm."—Philadelphia Ledger.

Prof. Lapworth, regarding the moon with a geologist's eye, feels convinced that it is an active and living world.

KEEPS OUT THE DUST.

Invention of Practical Value to the Housewife.

Many a housewife and museum curator has had good reason to regret that drawers as a rule are neither dust nor vermin proof. To have your treasures, whether they consist of linens, books or unreplacable specimens ruined when they were apparently secure from anything less than a fire is disheartening to say the least. Two Swedish inventors of Providence, realizing the field that exists for a dust and insect proof drawer put their ingenuity to work and have evolved a very simple but effective construction. The essential feature of the construction is a wooden or metallic cover for each individual drawer. Three edges of this cover, the sides and the rear, are provided with a downwardly extending flange, adapted to close in the sides and back end of the drawer. The front edge terminates under a flange forming an integral part of the supporting framework. This cover is pivoted at some nearly central point, and as a drawer is withdrawn beyond this pivotal point the cover drops down at the back and raises correspondingly in the front, and as a drawer is withdrawn beyond this pivotal point the cover drops down at the back and raises correspondingly in the front, allowing the drawer to be entirely withdrawn without displacing the cover. The drawers and cover may be made of wood, metal or any suitable material.



Russian Poplar Splitting.

W. R. M.—Russian poplar trees 8 years old, about 18 feet high and 21 inches in circumference are commencing to split from the bottom; the largest one is split about 4 feet and about 2 inches into the tree.

Ans.—It is rather difficult to say what causes this bark splitting of the Russian poplar, but it is more likely to be due to climate difficulty than anything else. If you find it mostly on the south and west sides of the tree, then this surmise may be considered to be confirmed. This bark splitting is caused by the rapid thawing and subsequent freezing of the sap early in season. Ice crystals are formed beneath the bark which destroy the tissues and lift the bark from the wood. The remedy is to shade the tree on that side. No system of banding will be satisfactory because a band would simply strangle the tree. If the split extends through the wood and is likely to divide the tree, the two halves can be bolted together by using ordinary bolts of a length sufficient to clear the diameter of the trunk. The holes can be bored, the bolts driven through and the burrs put on. The new growth will soon cover them up. When the bark peels up roughly and curls outward, it is best to trim it down somewhat smoothly on the sides and dress it with paint or grafting wax.

Plastering a House With Cement.

D. McL.—Would you recommend plastering the outside of a house with Portland cement and sand? Would it be likely to crack?

By using Portland cement to plaster your house, it would make a far better job than doing it with lime, for Portland cement would stand the weather far better. All cement work, where it has a large surface, or where the walls are of a considerable length without any joints or openings in them, are apt to crack, and plastering will do the same, especially where the heat of the sun is great. Rough casting or plastering on the outside used to be quite common, but of late years it is seldom done.

Peppermint Culture.

J. C. R.—Will you please give data about how best to propagate peppermint whether by seed and cuttings, or seed alone, and how cuttings are managed?

Ans.—The peppermint is propagated exclusively by sets which are in reality cuttings of the running root stocks. These root stocks are cut into short lengths and are sown in drills fifteen or eighteen inches apart. The soil should be rather moist and cultivation the first year should be as thorough as if one were growing carrots or beets. The crop ought to be renewed every three or at most four years; that is to say, the field is likely to run out in that length of time.

Drying Damp Grain.

A farmer who had a quantity of damp corn on his hands discovered that it could be quickly dried by placing drain tiles in the crib along with the grain. After a layer of a few feet of corn he places a layer of tile a few feet apart. They can be inserted either horizontal or parallel, with sticks running through to keep them in place. The tiles permit a free circulation of air through the grain and absorb a large amount of moisture. The scheme is said to be admirably adapted for cribbing soft corn, and the grain always dries out without the least heating. The scheme is also applicable to a bin of damp oats, buckwheat or other grain.

Hens Eating Eggs.

E. R.—What is a good method of curing hens of eating their eggs?

Ans.—First of all, have darkened nests so arranged that the hens have to make two or three turns in their way into the nests; then place four or five crockery eggs or round stones painted white in each nest. If this is not enough, pare the points of the fowl's bill until they are tender, so that they will not enjoy pecking a crockery or stone egg.

A Driven Well in Quicksand.

J. M. T.—In driving a well, would it answer to cease driving when quicksand is reached, or should it go lower?

It is rather hazardous to have quicksand at the bottom of a well. It would be much safer to pierce the quicksand deposit and reach a more stable formation.