Soils and Crops

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How I Get the Best Work Out of My Few Horses.

Of all the leaks on the farm, it has been my experience that one of the worst is the poor use of horses. There are three reasons for this:

The use of too small or too poor quality horses, the use of too few horses in the team, and the use too few days in the year of the horses kept.

It has been said that the average number of hours per day worked by farm horses is three. This does not mean that the days worked are short, but that the horses stand in the barn or roam the pasture two-thirds of the time. Maybe you think you are not out anything while your horses are on pasture, or that you are only out the feed while they are standing in the stable, but on closer analysis you will see that this is not the case.

The cost items of keeping a horse are: Feed, interest, depreciation, shoeing, and veterinary bills. In addition, there are repairs to harness, though this is not a strictly horse cost, and some man labor. Of these costs, the idle horse is just as subject to those for interest and depreciation and veterinary bills as the one that is working. He is also subject to the feed and shoeing costs, though to a less extent. As to depreciation on harness, this wears out about as fast hanging in the stable as when in use.

Comparing the cost per working hour of a horse working 1,000 hours per year with that for one working 2,000 hours per year, we get figures as follows:

Items of cost.	1,000 hrs.	2,000. hrs.
Oats at 40c per bu.....	$36.00	$45.00
Hay at $18 per ton ...	60.00	54.00
Pasture	5.00	2.00
Interest at 6% on $250	15.00	15.00
Depreciation, 10% a year on $250	25.00	25.00
Veterinary bill	5.00	5.00
Shoeing	25.00	35.00
Total	$171.00	$181.00
Cost per hr. worked	17.01	9.05

The above figures, while they do not hold for every community, are as fair to the 1,000-hour horse as to the 2,000-hour one. You see that the cost is nearly double for the horse which works the smaller number of hours. Applying the figures to a crop like potatoes, on which about 100 hours of horse work are used, we get a difference in cost of production of $8.05 per acre, which, though not large, is worth saving.

To get the best use out of your horses is a problem in farm management. Perhaps the best way I can illustrate is to give my own experience. When I started farming I had four horses. The farm consisted of 140 acres, of which 42 acres were woods. Three acres of potatoes were raised, and seven of corn, and the rest was in hay and oats. Later I raised from 12 to 19 acres of potatoes, and about 10 to 12 acres of corn, besides the hay and oats. The cultivated crops take more horse work anyway, and potatoes take a good deal of teaming to deliver. The result was a great increase in horse efficiency and, incidentally, in income. Then I rented first one 60-acre farm and later another, without any increase in the number of horses kept. In addition to the 260 acres farmed with the four horses, I also had a team on the road for several weeks, and took the job of hauling milk in the winter when there was too much snow for the trucks.

My year was about as follows: April, fitting land; May, fitting land and planting early potatoes, corn, and oats; June, fitting for late-planted late potatoes, planting them, and cultivating corn and potatoes; July, spraying, cultivating, and haying; August, harvesting grain, digging and delivering potatoes, and one team on the road. In September digging of early potatoes continued, and I also kept the team on the road part of the month. In the latter part of the month the corn was cut, and put in the silo. October was given over to digging and delivering late potatoes, and a team was on the road part of this month. November was given over to fall plowing, and the other four months were spent hauling milk with one team, while the other did chores (the manure was hauled every day).

As will be seen, the work was continuous, there being no very slack times nor any times when we were overworked. I never kept exact track of how many days the horses worked during the year, but they were in the harness a part of nearly every good day, and put in most of the time good full days. They worked probably 240 days or more a year. Since then I have bought another 100 acres and a tractor, and now I am just making a change in my type of farming. I am substituting hay for potatoes for the money crop. When the change is completed, the year will be about the same in the spring and fall, but in the summer it will be as follows:

The latter part of June, cutting and drawing alfalfa; July, cutting and drawing timothy and clover; the latter part of July, second cutting of alfalfa; August, harvesting grain and third cutting of alfalfa.

I started with four horses that would not average 900 pounds apiece. I soon found that they were no good for business, and bought a pair weighing 1,300 apiece. Later I bought another pair weighing about 1,500 apiece, and still later I exchanged the lighter ones for horses weighing about 1,600 pounds apiece.

I had always heard about how slow big horses were getting around corners, and about how working on soft ground bothered them; but I have never found that to be the case. I did find that it takes no more grain to feed a big horse than a small one, and but little more hay. Why? Well, a small horse doing heavy work must work on his nerve, while a heavy one is at ease doing the same work.

As to using more horses in the team, there is no reason why many farmers in the East cannot do what is so commonly done in the West—drive four-horse teams.

By letting one man do all the milking with the machine, and the other drive the four-horse team, we are able to do a lot more work than otherwise. I use for fitting a six-foot double-disk harrow. Three horses are needed to pull a six-foot single disk if it is set up to where it ought to be. Four will pull a double disk as easily as three the single one, and do twice the work. And the work is more smoothly done.

Many people would say that this intensive use of horses would be hard on them. In reality, the opposite is the case. Regularity is of more importance with horses than are long vacations. The work horse that does a good day's work every day, gets fed regularly, and has few days off except Sundays, lives longer and suffers less from disease than the carriage horse used to, which did nothing for a week and then put in one or two hard days.

My horses were hard and in fine condition to work in the spring when they had been hauling milk all winter, and I would have half of my spring work done before some of the neighbors had got their horses hard enough to stand a full day's work.

I do not mean that a horse should never have a vacation. It is excellent if you can turn him out for two or three weeks in the spring or early summer, but this is all that I have ever found necessary, and even that can be dispensed with if the horses are turned out nights for a month or so, in addition to the usual feed of grain and some hay.—A. H. S.

Horse Sense

The young foal will make more use of these summer days if he is kept in the stable during the day. Flies and hot weather are not contributing factors to a healthy and vigorous growth. The mare and foal stabled during the day, given a couple of grain feeds, and then turned out at night, will do better than the ones left out all day. A ration of four-fifths parts of oats and one-fifth part of bran by weight forms a good feed at this time.

Careful breeders have probably had their mares and foals in during the day since the first of July. If the mares have been needed for work, a moderate amount has not hurt them and they are better off than they would be if left in a pasture all during the day. The foals are big enough now so that they do not need the mare.

A Word of Warning.

A word of warning, Garden Man,
With pail or hose or sprinkling can:
Pour liberal drink on garden land,
Or else, I pray you, stay your hand.
For if you only wet the top
The thirsty roots get scarce a drop,
And, struggling upward after water,
By hoe or draught are doomed to slaughter.

Cleaning Weedy Corn.

One season the wet weather kept us out of our cornfield until the weeds grew very thick. It looked as though they would take the crop.

Ordinary cultivation would have done very little, if any, good, so we hitched to the lister with one horse, and ran a shallow furrow between the rows, the dirt, of course, being thrown each way, covering the weeds.

As soon as the dirt settled a little, we took the five-shovel cultivator and, letting the horse walk down the shallow furrows, practically leveled the ground between the rows.

By this time the weeds had been given such a good worrying that the ordinary four-shovel cultivator was put in the field, and the ground worked to a good advantage where it would have been impracticable without previous preparation.

Plow Points Wear Rapidly.

Many farmers who are using tractors are learning that plow points wear out more rapidly when propelled by the tractor than when horses pull the implement. This is due to the fact that the tractor travels more rapidly and the increased resistance due to speed wears out the points much quicker. It therefore becomes necessary to sharpen the plow points more frequently than is the case when using horses.

THE CHILDREN'S HOUR

What Wakened Tumpty Toad.

Tumpty Toad sat on the garden walk sunning himself. It was a drowsy day, and Tumpty Toad was feeling much too sleepy to move. Indeed, when two mosquitoes lighted on a nasturtium leaf near his head, Tumpty Toad only blinked an eye at them. They would have tasted good no doubt, but hardly good enough to be worth the effort of putting out his tongue.

Now Tumpty Toad couldn't help hearing what the mosquitoes were saying. It seemed easier to listen than to move out of hearing. They weren't sleepy, he learned, in spite of the heat. They were merely hungry.

"And nothing biteable in sight," said one crossly, "but that old toad."

"You don't call him biteable," said the other. "He's too tough for my taste."

"Hush," warned the first. "He may hear us."

"No danger," returned the second. "Can't you see he's asleep?"

Tumpty Toad kept his eyes shut. Not that he wasn't annoyed. No one likes to be called tough, even by a mosquito.

"Here comes somebody tender," said the first mosquito suddenly.

"Aha," said the second with satisfaction.

And both mosquitoes fell silent. Tumpty Toad could hear them sharpening their bills. He was almost curious enough to open his eyes. Still he felt so lazy! And he could trust his ears to tell him who this tender somebody was.

For steps were coming along the walk, a big, grown-up pair of steps—not the tender ones decidedly—and a little, uncertain, toddling pair.

"Funny toad," said the baby.

Tumpty Toad felt a soft little tickle down his back. He didn't jump or wriggle away, for he knew that the tickle was the baby's finger stroking and patting him. He sat very still, not to frighten the tickle away.

"Nice, funny toad," said the baby.

"See if it doesn't want a fly," said a big, grown-up voice that belonged to the big, grown-up steps.

That was thoughtful surely. Tumpty Toad was almost excited enough to open his eyes. Still he felt so lazy! And he could trust his nose to tell him when the fly was near.

The mosquitoes stopped sharpening their bills.

"Ready?" asked the first.

"Go!" said the second.

Tumpty Toad heard the hum of their wings as they passed. It was a hungry hum. And it was headed straight for the baby.

Tumpty Toad opened both eyes wide. He had forgotten all about being sleepy. Close beside him on the walk, stooping to hold a big fat fly invitingly near his mouth was the baby. Such a gurgling, laughing dumpling of a baby. The first mosquito had settled on one bare little foot, and the second was lighting on the fat little hand that held out the fly.

But Tumpty Toad didn't wait to look at the fly. He darted out his long tongue, once, and wiped the first mosquito off the baby's foot; twice, and hooked the second mosquito off the baby's hand. Bite the baby, would they?

"Serves them right for being hungry," thought Tumpty Toad.

He darted out his long tongue again and the big fat fly followed the mosquitoes down Tumpty Toad's capacious throat. And that was the very best place for them all, if you ask me!

Tumpty Toad winked at the nasturtium leaf, where the mosquitoes had sat.

"I'm not as sleepy as I look," said Tumpty Toad.

My Grain-Tight Hayrack.

I have found that it has paid me to make the floor of my hayrack of good material. At the time I made this one (four years ago), flooring of the ordinary yellow pine cost about $50 a thousand. A good rack builder told me that it would be the very best thing to get edge-grain stuff for the flooring and to get narrow pieces. So I bought four-inch edge-grain flooring at $65 a thousand. I am very glad that I did it, as my rack has to stand out part of the time, and where other newer but cheaper racks are cracked open, so that grain can't be hauled loose, mine is still in good shape, and edge-grain stuff does not sliver up, when shoveling on the floor, as regular flooring does.

This is another case where economy consists in paying enough to get high-grade material. It goes against the grain to do this sometimes, but I have never bought a quality product yet that I regretted afterward.

Here is an idea in fastening the floor of a rack down that is worth while: I blind-nailed the whole top, and find that it pays. This means slanting the pails, and I feel that this will partly prevent their pulling out, as they do when put in straight from the top. A neighbor who has just made three racks used screws on the last one. This serves the same purpose, as the screws do not work out either.

A lot of farmers have found that the hayrack with a tight bottom and a set of sideboards makes a fine box for loose grain hauling.—E. Rogers.

My "Birthday Book."

Do you ever forget when your cow is going to calve, or when your sow is going to have pigs? I have, and I sometimes used to put it down on the calendar and in my notebook, too. Then, usually, the calendar would be used for something else, or I'd lose the leaf out of the notebook. Now I have found a much better place to keep these records, and that is in a breeding book.

I have lined it so that there is a space for the name of the animal, the date bred, the sire, the date conception takes place, and the date birth may be expected.

A year or so ago I had two cows that were about two months late in freshening, and I felt pretty sure that my records were wrong. It caused inconvenience, so I resolved to work out a better plan.

Probably some farmers would need a record for each of the kind of livestock kept, but I find one book sufficient for my purposes.

Most farmers figure that a cow's gestation period is nine months and a sow's four months. This of course, is not exactly correct. I find by carefully watching that in most cases they will come mighty close to the exact number of days. Two sows that I watched farrowed within an hour of the 112 days expected. With cows the time is not less than 280 days, except in rare cases. Calves have been carried for eleven months and have lived and matured. Mares require an average of 330 days.—R. E.

Parents as Educators

Preparing Our Children for Citizenship

BY ALICE WINGATE FRARY

Our children are given regular instruction in citizenship in school, but the best that can be done for them there will not alone give them the urge toward helpful service in the community that they might have with the thoughtful co-operation of their parents. The talks, songs and pageants of school have served to widen their vision and strengthen their grasp of the dramatic events of the past. Fathers and mothers can help them to express their appreciation of the time and country in which they live in terms of every-day service. To teach them that they have an important part in keeping a happy, well-ordered home and that the atmosphere of a community is the atmosphere of its homes, is to-day a foundation for substantial citizenship later. To add to this a sense of responsibility toward a younger child in one's own family or a friend's or toward animal pets, is at least to start the habit of considering the interests of others. Just to keep emphasizing these two points day after day so that they become a part of the children's lives is no small task in itself.

However eager a young person may be to serve his community, his impulse will be dissipated or accomplish harm rather than good unless his efforts are intelligent. In Maud Lindsay's tale of "The Giant Energy and the Fairy Skill" (an effective story to read to children from five to ten) the fairy teaches the eager, clumsy giant to so direct his boisterous impulse to serve, that after days of patient effort he is welcomed as a helper instead of being merely tolerated by those generous enough to overlook his carelessness. A ten-year-old who was crocheting a gift for her grandmother remarked, "Even if it isn't done well Grandmother will like it because it's my work." How much more wholesome for the little girl it would have been if someone had insisted on the charm of offering a neatly made gift, that Grandmother's pleasure need not be marred by apologies. Organizations are too often hindered by the well-meaning but unskilled volunteer worker. The community life of the future will be enriched by every child who has learned to take pleasure in careful, finished work.

"We require from buildings as from men," writes Ruskin in "Stones of Venice" "two kinds of goodness; first the doing of their practical duty well, then that they be graceful and pleasing in doing it." This is one secret of acceptable service, that the doer shall find joy in his work rather than seek all his pleasure as a thing apart. This we can emphasize to our little citizens, showing them as consistently as possible that we do find joy in duties.

Our children will receive their firmest foundation in the matter of their responsibility toward the community from the stress which is laid by happy example and persistent teaching on the safe-guarding of the community welfare by the right sort of homes. Read them Mrs. Kate Douglas Wiggin's charming story "Mother Carey's Chickens." Theirs was a home whose light could not by any possibility be hid. Mother Carey gives the keynote in saying to her children when they move into the village of Beulah, "We must make it a home; as beautiful and complete as we can afford. One real home always makes others, I am sure of that! We cannot be happy, or prosperous, or useful, or successful, unless we can contrive to make the Yellow House a home. The river is our river; the village is our village; the people are our neighbors; Beulah belongs to us and we belong to Beulah."

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THE SUNDAY SCHOOL LESSON

JULY 16

The Handwriting on the Wall, Daniel 5: 17-28. Golden Text—God shall bring every work into judgment, with every hidden thing, whether it be good or whether it be evil.—Eccl. 12: 14. (Rev. Ver.).

Lesson Foreword—Remember that the Book of Daniel was written to minister comfort and encouragement to men who, through persecution, were liable to fall away from their religious faith. In to-day's lesson, encouragement is given by showing that whoever profanes the religion of the Jews, is doomed to punishment. Belshazzar, in his profanity and punishment, is an instance of this.

I. The Cause of the Handwriting, 17-23.

In this section the reason for the appearance of the mysterious hand is set forth.

V. 17. The magicians of Babylon have failed to explain the handwriting and now Belshazzar offers Daniel an attractive reward if he can do so, v. 16. **Let thy gifts be to thyself.** Daniel rejects the gifts and honor which the king has proffered him. **Yet I will read.** No reward was necessary to induce him to interpret what had baffled the others.

V. 18. **The most high;** a title frequently applied to God in the Old Testament. It denotes His supremacy over all the earth and thus clothes Him with awe and reverence. **God gave, etc.** Nebuchadnezzar's kingdom with its splendor and prosperity was by Daniel attributed to the providence of God.

V. 19. Nebuchadnezzar is portrayed as a typical Oriental despot whose sway over his subjects was absolute. **Whom he would he slew, etc.** "His personal will was law in all things" (Driver). In a capricious mood he would have one subject executed and another elevated to honor.

V. 20. **His heart was lifted up.** See Deut. 8: 12-17 and 17: 20. He had become so elevated above his subjects in his pride, that he dealt arrogantly with them and forgot the obligations he owed them as their king. **His mind** hardened, etc. In this respect he was like Pharaoh, Exod. 7: 13, 22. He attributed his success to himself and overlooked God who gave it. As a result he became insusceptible to divine influences. **He was deposed.** The account of his deposition is given in ch. 4: 28-33.

V. 21. **Driven from men.** Nebuchadnezzar became insane and his insanity unfitted him for human intercourse. **His heart . . like the beasts.** His mind and disposition were reduced to the level of the beasts,—irrational and savage. Apparently Nebuchadnezzar himself suffered the hallucination that he was a wild beast. **The wild asses.** Driver characterizes the wild ass as "an untamable animal which roamed in the open plains; to dwell with the wild asses would thus be a special mark of wildness and savagery." **They fed him with grass.** Apparently Nebuchadnezzar imagined himself an animal, and so he was treated as an animal. **His body, etc.** He dwelt in the open fields and shared in all respects the life of the wild beasts. For the neglect of his person see ch. 4: 33. **Till he knew, etc.** Reason was restored to Nebuchadnezzar when he acknowledged the true God from whom he derived his kingdom.

V. 22. Belshazzar had not profited by his father's fate; despising all these warnings he had committed a grievous sacrilege against Jehovah.

V. 23. Belshazzar's sin was twofold: (1) he had taken the holy vessels which were dedicated to the service of Jerusalem's temple, and used them as wine cups at a drunken carousal. (2) In spite of Nebuchadnezzar's awful fate for failing to recognize the God of the Jews as the only true God, Belshazzar continued to worship other gods. Daniel reminded him that these other gods were "mere nothings."

II. The Interpretation of the Handwriting, 24-28.

V. 24. **Part of the hand;** literally, "the palm of the hand." There would be something gruesome and mysterious in the visibility of part of the hand. The Babylonian palaces were built of brick and the walls, to a certain height, were plastered. Hence the writing would be quite visible upon the white background. **Written.** The word means properly "stamped." In Babylon the characters were stamped in them, while the clay was still soft.

V. 25. The exact meaning of the words written is difficult to determine. This was the reason, of course, why Belshazzar was puzzled at them and why Daniel was needed to interpret them. The words, which are Aramic and not Hebrew, appear to be the names of three weights. **Mene;** is the Aramic for the Hebrew weight "minah." **Tekel;** in Aramic corresponds to the Hebrew "shekel." **Upharsin;** denotes the Hebrew "half-minah." Although knowing the sense of each word in itself the king could attach no meaning to the words as they stood in this connection.

V. 26. Mene has in its root the idea of numbering. Hence Daniel says that the days of the Babylonian kingdom are numbered. Its allotted time is completed.

V. 27. **Tekel** means in its root "weighing." So Daniel declares that when weighed, Belshazzar falls short of the standard.

V. 28. **Peres.** There is a double play upon this word. It suggests in its root the idea of "division," and then also it suggests "Presians." Hence Daniel predicts that Belshazzar's kingdom is to be divided among the Persians. In B.C. 539, Babylon fell before Cyrus, the Persian, in whose empire the Medes formed an important and influential element.

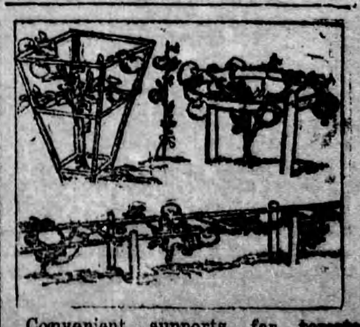
Application.

The noble self-restraint of Daniel, his purpose to "scorn delights, and live laborious days," the much derided Puritan element in life, is in eternal conflict with the luxurious, Sybaritic conception of life as a Sultan's feast. In this conflict through the ages there have been many battles, both lost and won, and the war is still on. In the conduct of one's personal life, in eating and drinking, and managing all human appetites and desires, and also in public life in the enactment of laws and statutes for the common welfare, there is urgent need of the Christian interpretation and enforcement of Daniel's practice as opposed to Belshazzar's indulgence.

To most of those who read this, the present practical application is most assuredly personal abstinence from wine and other intoxicants, and the full measure of one's influence for total prohibition, in the interest of public welfare, and specially for the protection of people with strong appetite and weak will, and helpless dependents injured by these.

Good schools are the greatest defence of the nation.

Short sermons catch the most sinners.



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