

FARMING BY MACHINE.

MODERN METHODS ACCOMPLISH A REVOLUTION.

New Ways of Plowing and Preparing Ground, Sowing Seed, Cultivating Crops and Harvesting the Ripened Product—Agriculture a Science.

Farm machinery may some time do work for us that will be worth \$1,000,000,000 a year, says a writer in the World's Work. Theoretically, it is all ready saving us nearly three-fourths the sum: as far back as 1839, if all the crops to which machinery is adapted could have been planted and gathered by hand, they would have cost nearly \$700,000,000 more than if they had all been planted and gathered by machinery. It has not only added so much to our wealth, but it has made us the foremost exporting nation and it is changing the character of the farmer by freeing him from monotonous hand-toil.

All the great crops are now planted and all except cotton are gathered by machinery. Let us follow a crop throughout a season's work and see the changes that have come in its treatment.

The plowman no longer trudges slowly and wearily back and forth across his field. He rides a sulky plow with a spring seat. There are special plows for every need; turf plows, stubble plows, subsoil plows, plows for heavy work, plows for light work and gang plows turning three furrows at once. So simple are many of them that a boy may drive one. Plowing by steam is not commonly practiced in the middle west, but on the great wheat ranches of the Pacific coast it is common. A farmer of the central west who uses a small traction engine and a gang of fourteen-inch plows says that it costs him from 50 to 62 cents an acre to break his ground. He considers steam economical.

The plowing done, the manure spreader replaces the hand fork and its backache. While the farmer with a pair of horses drives back and forth across his fields, from the rear of his wagon the fertilizer is mechanically spread evenly over his land.

The land made ready for the reception of the seed, machinery still does the work that muscle used to do. The sower goes forth to sow, but not as he once did, dropping his seed into the soil, trudging backward and forward from dawn till twilight. His grass or his grain is broad cast or drilled in with mechanical evenness and the machine automatically registers the acreage sown. In like manner his corn is drilled in, listed or planted in hills, his potatoes are planted and even his cabbage, his cauliflower and his tobacco plants from the seed-beds are set out by machinery, and the work is done better than it could possibly be done by hand—this besides the saving of time and toil.

Promptly after the crop is planted come the weeds. They once meant the hoe, blistered hands, weary backs and in the wet season, a long and weary battle. To-day the farmer has his choice from a great variety of cultivators, either guided by handles, the driver walking behind, or made with wheels and a seat, the driver riding in comfort. Thus corn and potatoes are ridged up and the ground is kept clean and in a good condition.

But it is when you come to the harvest that we will find the greatest marvels in mechanical ingenuity. Every one is familiar with the mower, the tedder and the horse rake to save the hay crop. To these have been added the hay-gatherer and stacker, drawn by horses, and a press operated by horse-power.

To harvest and to press a ton of hay by hand requires thirty-five and a half hours of labor; with modern machinery, seven hours and thirty-four minutes. The greatest saving is in the cutting and the curing of the crop, which by hand requires eleven hours and by machinery one hour and thirty-nine minutes.

But it is the harvesting of the two great crops, wheat and corn, that the greatest advance in agricultural machinery has been made. Drawn by horses the self-binder cuts an eight-foot swath across the field of ripened wheat. Instead of leaving it strewn behind, as the mower does the grass, it gathers it all automatically binds it into sheaves.

Or, if a header be preferred, the heads of the standing grain are cut cleanly and poured in a steady stream through a chute into the wagon driven beside it. But even more remarkable scene—the most spectacular scene in agricultural progress is the combined harvester and thrasher which is used on the great grain ranches in the west. As far as the eye can reach stretches a sea of golden grain. In its glorious sight, this immense harvester and thrasher—the food of a nation—awaits the hand of the reaper.

Where are the harvesters who gather a crop so large? Measured by the methods of small eastern farms, the problem of saving such a crop is hardly less than the emptying of the great lakes with a dipper. But

the steam harvester moves steadily forward into it. On one side the grain falls in a great swath. It melts away before the majestic advance of the machine. On the other side with the same regularity drops sacks of grain ready for the miller. The ranchman following with his teams picks up a sack filled with thrashed and winnowed wheat from the very spot where but five minutes before the wheat stalks stood in the sunshine. In the broad path between the standing grain and the line of brown sacks has passed one of the greatest triumphs of American machinery, the combined harvester and thrasher.

MEN OF OLD WERE LEARNED.

Residents of Babylon 4,000 Years Ago Had Much Enlightenment.

Education in the time of King Hammurabi, some 4,000 years ago, was in a flourishing condition. Vincent Scheil, a German archeologist, recently unearthed a school house in Babylon just opposite the great temple. From inscribed books, inscriptions, etc., Father Scheil has reconstructed the life of an ancient Babylon school.

The scholars sat on the floor in rows, each with a soft brick. On these the small boy engraved the difficult cuneiform characters. When he made them wrong the teacher smudged them over, as is attested by several bricks with the thumbs plainly visible. In one room the scholar was taught how to write the elaborate and highly poetical forms of adulation which are preserved on monuments. Much attention was given to weights and measures, arithmetic and geometry, but the chief branches were grammar, rhetoric and the expression of flattering forms.

Girls, it seems, got pretty much the same education as the boys. Father Scheil found contracts which had been revised and corrected by a woman learned in the law named Amatoben.

On the whole, education and civilization under King Hammurabi were in a very advanced condition. They knew nothing about electricity, steam power and telephones in those days, but considering their limited opportunities, the Babylonians were very clever people. The contracts revised by Miss Amatoben were not trust contracts and probably from the New Jersey point of view were primitive and crude. But they answered the needs of a highly complex civilization and the woman who could draft them was probably as good a lawyer as can be found in New Jersey. Anyhow her name survives 4,000 years. Is it likely that any of our lawyers will be mentioned A. D. 6000?—St. Louis Post-Dispatch.

USERS OF QUININE.

Get to Be Friends for the Drug, Which Helps Them Little.

Habitual users of quinine are slaves to it, but derive little benefit from it. Men with malaria eat it by the ounce and still keep the malaria. The world is full of quinine drunkards, who pour a spoonful into the palm of the hand and lick it down without a grimace. I have seen them chew cinchona bark as one chews gum. Others, not habituated, must take two grains or ten in a gelatine capsule. Before capsules were invented it was taken in molasses—and the chances are that the molasses effected the cure. Too much of it is nearly as bad as too little calomel.

Great fortunes have been made out of it, however, and its cultivation in Ceylon and Java is said to be successful. There are several pretty romances connected with the discovery of "kina," as the native Indians of Peru called the cinchona trees from which quinine is derived. What do you call it—kwinine, kwe-neen, kin-nine, kee-neen, or kin-neen? It is possible that your pronunciation of the word may discover your birthplace. What a lot of names the drug has had. Quinine, cinchona, Countess' powder, Jesuits' bark, Cardinal de Lugo's powder, Peruvian bark, China bark, quina, quinquina, cinchona bark, etc. The world is indebted to Louis XIV. for its general introduction. In France and Italy physicians who prescribed its use were persecuted. Protestants and together repudiated it. Robert Talbot, an Englishman, cured the Dauphin with it, and Louis XIV. Grand was induced to buy the secret. He was the only king that ever subscribed in the drug business.—New York Press.

Poor Maria.

"Maria," said Mrs. Phelps, "I was so angry with you, thinking you were so unkind to the wife of his friend, that I had a dreadful operation performed on her. She is now blind, and I am losing her sight. I have consulted the best ophthalmic surgeon in the city, but he has found her hopeless."

"Yes!" breathless said Jollyboy, "I found her blind in her eye!" "That the poor girl was blind in her eye!" said Mrs. Phelps, "I was so angry with you, thinking you were so unkind to the wife of his friend, that I had a dreadful operation performed on her. She is now blind, and I am losing her sight. I have consulted the best ophthalmic surgeon in the city, but he has found her hopeless."

EDITORIALS

Opinions of Great Papers on Important Subjects.

The Need of Thrift.

WHEN "times are good," laborers employed, production active, and the nation apparently growing rich, the necessity of thrift is overlooked, and the nation may be in reality growing poor. Even the most prudent individuals are apt to be affected by the prevailing spirit of life and extravagance. The fortunate and the sanguine buy useless and expensive things; diamonds and steam yachts, or build palaces too grand for ordinary use. As a rule the money that comes into the hands of promoters is wasted.

After a period of excitement and extravagance, when everybody seems busy, a reaction comes. Hard times or dull times set in. Everybody retrenches expenditure, some because it is the fashion. Labor, it is true, is not fully employed, but that which is employed produces useful things; food, clothing and necessary tools. Less money is sunk in steam yachts or extravagant displays. The nation lives within its income, and saves and grows rich without knowing it. Bad debts are marked off, no enterprises are carried out unless they are demonstrably certain to be remunerative. Extravagant people are too poor to waste the fruits of the labor of others. Thrifty people accumulate slowly, and after an interval of two or three years it is found that the community as a whole is rich. Then begins another era of wastefulness.

This paradox, that when the country is prosperous it is growing poor, and when times are dull it is growing rich by enforced economy, has been established by experience since 1836. The cycle of about ten years—prosperity, excitement, extravagance, deficit, hard times, retrenchment, thrift, accumulation and prosperity again—has been run through many times, and will be run through many more. Epidemics assume a "mild form" occasionally, and so do economic stages. It looks now as if we were not to suffer from a very long or severe attack of "hard times," though we have been reckless enough to bring on an aggravated case.—Hartford Times.

Sending the Poor to the Country.

SOME enthusiastic persons in Chicago have organized "The Field and Workshop Society," the object of which is to take the very poor from the tenement districts of the large cities and provide them with homes and facilities for making themselves self-supporting in the country. The society made some experiments in this direction during the last summer, and the results were sufficiently satisfactory to encourage plans for enlarged effort in the work for next year. The plan of the society is not materially different from that of the Salvation Army, which has been most successful in its plans for redeeming victims of the slums, and helping them to become honest, worthy and independent by work and association with the army's different farm colonies. The plan is a splendid one for the alleviation of the condition of the well-nigh hopeless poor, who are compelled to spend their lives in a fight for a miserable existence in some of the crowded tenement districts in the cities. It removes their children from the temptations and vices that thrive in the crowded district, gives them something to live for, something to look forward to, and a prospect of final possession of property and personal independence as rewards for industry and proper living.—Washington Post.

Causes of Railroad Slaughter.

DR. TOLMAN, head of the New York Institute for Social Service, says that 38,890 persons have been killed on American railroads during the last five years and 253,823 injured, an average of 21 deaths and 139 injured every day. What are the causes of these disasters? Principally carelessness and inefficiency on the part of employes; greed, indifference, or taking things for granted on the part of officials. There is an "if" attached to every December disaster. If employes had not been grossly careless the accident on the Burlington and Quincy Railroad would not have occurred. If freight cars had been properly loaded the accident on the Baltimore and Ohio Railroad might not have occurred. If a brakeman had not been kept on duty nearly thirty-six hours he would not have been so sleepy that he failed to flag the Frisco train and that accident would not have occurred. If the block system had been in use on the Pere Marquette Railroad the

What He Got.

Skimpton—I said to my wife, just before Christmas, and insisted upon it, that it was my belief that in selecting holiday presents one should choose the useful instead of the merely ornamental.

Blampton—A commendable belief, too.

Skimpton—That utility should be regarded above the simply beautiful or pleasing.

Blampton—Sound doctrine, I'm sure.

Skimpton—That in gift-making one should consider future as well as present needs.

Blampton—I don't see how anything could be truer.

Skimpton—But I've changed my mind.

Blampton—What!

Skimpton—Oh, yes, my mind. Remember, I've taken my gift to the poor.

Blampton—You mean some strong, useful thing, don't you?

Skimpton—No, I mean a pair of slippers.

accident would not have occurred. There is an "if" which would have prevented nearly every big disaster this year, for two-thirds of them were collisions, and it is the business of railroad officials to prevent collisions.

Criminal negligence is the chief cause of railroad slaughter. The railroads, like everything else, are run principally to make money. More money can be made by running them and taking chances of accidents than by providing against them. It is cheaper to work a man to the exhaustion point than to employ two men. Negligent men are cheaper than careful men. Hence many of the roads are run in criminal disregard of public safety. Dividends on stock and bonds are too often paid on the hazards to human life. What will Congress do to stop the railroad slaughter in the United States, which is greater than that in Great Britain, France and Germany combined?—Chicago Tribune.

Who Owns the Prescription?

THE ruling of a New York magistrate that a physician's prescription belongs to the person who buys it, and not to the druggist who fills it, reopens an old and much debated question. While the magistrate settled the particular controversy between the Gotham druggist and his customer, it does not follow that all druggists accept it as a finality. This particular druggist, indeed, was threatened with imprisonment for larceny before he finally concluded to give up the prescription demanded by his customer.

The question of ownership of a prescription would seem so very simple to the mind of the layman as to require no ruling from a court of equity. A prescription is certainly the property of the person who buys it of a physician, and whether a druggist may be permitted even to retain a copy of it is obviously a question for the owner of it to decide. As a matter of safe practice the owner should always demand a copy of his prescription if he does not retain the original copy. It may turn out to be a prescription of great value, and the druggist of course has no right to it, and few druggists, indeed, claim such a right.

The same principle has been held to apply to photographic negatives. When a person pays the photographer's price for a negative it is his property. If he cares to do so he has a right to take the negative away with him and make his own prints from it. As a matter of custom and convenience, however, the photographer is permitted to store the negative where it may be easily found when new prints are desired from it. It is very clear that the photographer has no proprietary right in a negative which some other person has bought.—Chicago Record Herald.

College Men and Business.

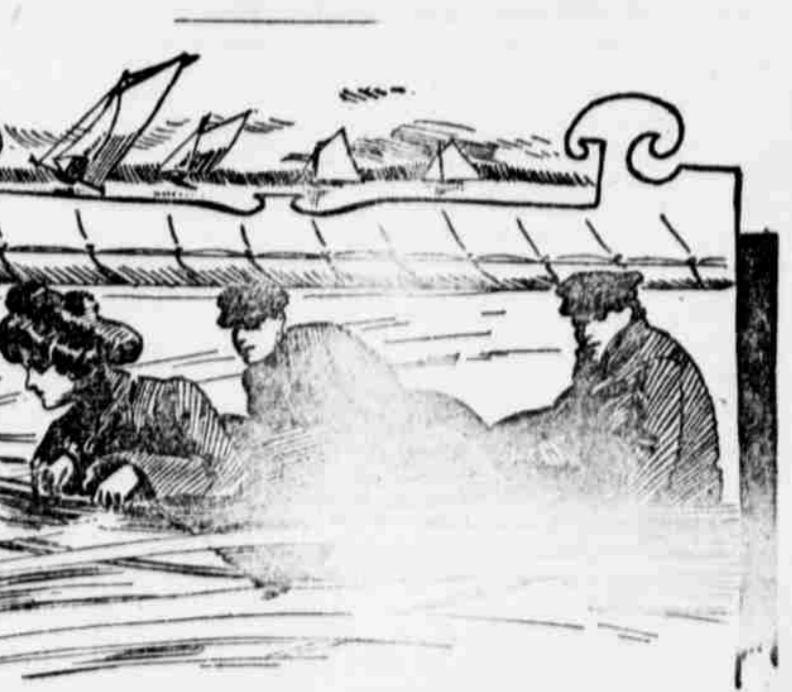
THE principal complaint against the schools and universities has been that they tended to augment the already over-crowded "professions;" that they gave prominence in their curricula to the studies that were calculated to equip men for the so-called polite pursuits of life. As a result there came from the college doors every June a small army of doctors, lawyers, preachers and writers.

There are hopeful indications, however, of a tendency on the part of the colleges and universities to meet the demand for educated men in the various lines of commercial and industrial endeavor, which modern conditions have created. There is gradual and more adequate recognition of the fact that the so-called "professions" are already over-crowded, and that the great demand of our times is for trained commercial and scientific men, for men who can take the places of the self-educated and self-made men who built up great industrial and commercial enterprises.

Dean James H. Tufts, of the University of Chicago, in his address to a recent graduating class, declared that in most classes to-day fully three-fourths of the men graduating intend to enter commercial pursuits instead of the professions. Twenty years ago one-third of the men in the graduating classes of the colleges became teachers, one-fourth or one-fifth entered the ministry, and not more than one-fourth went into business, said Dean Tufts.

There are not enough patients for all the doctors and not enough clients for all the lawyers. It is time the universities were turning out men to take the places of the great builders, merchants and producers of our time.—Chicago Record-Herald.

FIFTY MILES AN HOUR ON AN ICE BOAT.



One of the most courageous ice-yachtsmen in the country is Flossie Phelps, of Red Bank, N. J. No matter how rough this fair skipper does not hesitate to jump overboard and take a spin on the river.

Miss Phelps has never met with a serious accident, a number of narrow escapes. She comes from a family of sailors. Her grandfather, the late Captain Phelps, of Florence, which was in her day the largest ice-yacht in the world, Delford Fisher, is a skilled ice-yachtsman.

Miss Phelps is one of the society's most popular figures, with long, wavy hair, and a complexion that is as fair as snow. She is traveling at a speed of forty or fifty miles an hour.