

The Carlisle Arrow and Red Man

PUBLISHED BY THE U. S. INDIAN SCHOOL AT CARLISLE, PA.

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He that by the plow would thrive
Himself must either hold or drive.

Benj. Franklin

⌘ The Carlisle Arrow and Red Man ⌘

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A SCENE IN THE SCHOOL LIBRARY.

IN THE formative period of the Carlisle Indian School, devoted friends of the cause for which the institution was founded at different times donated books for various purposes: To help entertain the small boys, as an aid for the girls in their work and study, as a supplement to Y. M. C. A. work; with a pedagogical library of no mean proportions. Prof. Bakeless, when principal, noting the value of these collections in their many lines, envolved the idea of a school library appropriate to the use of the entire student body. His desire for the greatest usefulness of these volumes resulted in the unification of the several libraries. His genius for classification led him to adopt the system now in use, which is that most approved in similar libraries today. Prof. Bakeless' endeavors were ably seconded by Gen. Pratt, who gave him sincere and earnest support. To these men who have given their best years to the work, the students owe the many advantages which they enjoy in the library as it is now equipped.

The Carlisle Arrow and Red Man

The American Farmer: His Past, Present and Future

By E. B. Dorsett, Harrisburg, Pa.

Director, Bureau of Markets



ANY years have elapsed since the American farmer began his work of building this nation; and though he later demonstrated his great power in saving it from being rent in twain, and is now recognized as the backbone of the nation, its brain and brawn, yet there are some who still are unkind or unthoughtful enough to call him "Clodhopper," "Buckwheater," or "Rube the Hayseed." Notwithstanding this condition, we are still living in the best country and under the best Government that the sun ever shone upon; and I assume that every person who reads this will subscribe to this sentiment. In spite of the many evils which exist and the many changes that might be made for the better, and notwithstanding the uneven distribution of the nation's wealth and the arrogant manner in which capital rules, it is still the best and the greatest country on the face of the globe, and I desire to emphasize the fact that "Rube the Hayseed" has been the greatest factor in its upbuilding.

Let us follow him from the time that he landed on the shore at Plymouth Rock and took possession of everything in sight. From that very moment he has ever been the aggressor. The moral phase of his position we will not here discuss; but simply say that he was proud of his possession and gloried in his strength. He was living in the days of aggression, at a time when might made right, when men were ruled by the sword, and when the Lord seemed to be on the side of the heaviest artillery.

His first great work was to clear his farm on the rough New England hillside, and with the rocks which he dug from the soil he made a schoolhouse, in which he laid the foundation for his empire. How well he built he never fully knew; but the

fact remains that the little red schoolhouse was the keynote to his success during all the ages that have passed and gone. Out of those buildings have gone not only his children, but his children's children trained and equipped for the battles of life. His early trials and struggles are a matter of history and need not be repeated here. We see him bending under the yoke of bondage placed on him by the Mother country. We see him struggling manfully to adjust the burdens of local government, until finally the yoke of oppression becomes so burdensome that he is forced to throw it off. The Articles of Confederation are superseded by the Constitution of the United States of America, and the Stars and Stripes float over the new born nation. In the selection of a President for this new nation his mind instinctively turns towards one of his own class; and George Washington, the farmer, soldier, patriot, general and statesman, was chosen for this important position. Thus, we see in the very beginning of the history of this nation, the American farmer was signally honored and justly so.

Having built well the foundation for his new empire, he now gives his time and attention to its extension and upbuilding. With his back towards the rising sun, his axe on one shoulder and his musket on the other, he turns his face towards the west and marks the course of his empire. In the Mohawk Valley he paused and builds a schoolhouse out of the rough and unhewn logs cut from the forest. The Middle West surrendered a million fertile acres to his plow, and here he builds his schoolhouse out of sawed boards and bricks, roofing it with shingles. Still onward, untiring and aggressive, he continues to plow the straight furrow westward and to set the landscape with schoolhouses—forest or prairie, mountain or valley, always a schoolhouse.

He now turns and looks backward over his pathway. He sees the little old stone schoolhouse built on the New England hillside grown into a stately college, and the little clearings which he had made in the forests grown into towns and cities. On some of his roads were iron rails, over which steam cars were running, and the waterways were being plied with ships of commerce.

Encouraged by his successes and achievements he again faces westward, though he pauses during the space of four years to settle a difference of opinion between him and his brother Jonathan in the South, as to the preservation and perpetuation of the Union, something that had become near and dear to his heart, an institution that was part of his very life and religion, one which was the outgrowth of justice and equity and the result of early teachings in the little log schoolhouse.

Firm in the belief that he was right, his Southern brother threatened to overthrow the entire fabric and cause the dissolution and disintegration of the Federation of States. "Rube" saw the work of four generations in peril. "Dissolve this mighty Union!" He cried, "Never!" He stopped, he considered and the more he considered the more incensed he became, until finally he unyoked his oxen from the plow, brought forth his grandfather's old musket, and in the twinkling of an eye he became a warrior. The quiet, peace-loving, home-loving, hard-working, hard-fighting, and all-around-hard-to-beat tiller of the soil, takes up the trade of war and for four long years his trade was war, cruel, remorseless war; and when it was over, when victory was won, did he boast over it, or follow up his advantages for revenge or conquest? No! He extended the hand of fellowship to his Southern brother and said: "Go back home to your cotton fields and I will go back to my corn. I have helped save you from yourself and henceforth we will work together. In the future we will work for the glory and honor of our common country. Shoulder to shoulder we will build such an empire as the world has never seen."

In six months the farm, the shop, the mines and the professions had absorbed that mighty army whose trade had been war. There was no bloodshed. Quietly and peacefully the sword was converted into a corn knife, the cannon into

plow shares, and the fields which ran wet with blood in the spring were golden with the harvest in the autumn.

Match it in history if you can. Peace and harmony having been restored, "Rube" again takes up the furrow where he had left it, and with his face still towards the West he enters the great American Desert. On the alkali plains he digs an irrigation ditch, and sows its banks with alfalfa. Here his schoolhouse is a dug-out adobe. In the valley of the Sierra Nevada he plants vineyards, and beyond the great range an orange grove, and geographically, the scope of his empire is complete.

The Farmer of the Present.

Such in brief is a history of the American farmer of the past. We find the farmer of the present still trying to solve some of the same questions, though perhaps differently stated, as perplexed his forefathers in the days of the Revolution. If taxation without representation was tyranny then it is doubly so now, yet we find that the farmer of to-day pays an average rate of sixteen mills taxation on the dollar, while corporate interests pay but four; and at the same time his voice is seldom heard in our halls of legislation.

From out of the ashes of the great Civil War, ashes sprinkled with the tears of our glorious American women, and wet with the blood of her bravest and best manhood, there has developed a new menace, which is destined to make more trouble for our American farmers of to-day than did the war itself.

The power of unearned and concentrated capital is only just beginning to be felt; but the necessities of that war opened up a new and hitherto unknown and untrodden field of financial exploitation, new and untried fields for the accumulation of vast wealth. Capital ever greedy, ever ready to take advantage of every necessity, begins to make its power known. Its advance is slow, creeping, cringing, and insidious. It always wears a smile, smirks and bows, and rubs its hands with glee as it creeps onward. Thus far "Rube" has taken little or no notice of this. He exchanges smile for smile, and likes to be flattered, it tickles his vanity. He is proud of his country's progress, proud of her great cities and proud of her railroads; he is even proud of her

captains of industry, feeling that he had a part in their creation, little realizing how great a part.

Instead of taking an active interest in government affairs, and in securing legislation protecting his interest, as did his forefathers, he is often careless and indifferent as to the character of the men whom he elects to enact laws, and, at times, criminally negligent in his choice of men to administer them.

How absurd, then, for the farmer to growl about not getting a square deal, or to even think of getting justice and equity, either in the enactment or the enforcement of any law that is made, interpreted and administered by men whose business interests are not in sympathy with and often antagonistic to that of agriculture.

This State Board, with its splendid system of Institutes and Movable Schools, is doing much for the farmer of the present; and yet its work has only just begun. It is highly important that he should be taught some of the fundamental principles of scientific agriculture, how to secure and maintain soil fertility, how to plant and care for the orchard, how to feed and care for the stock on the farm, how to increase plant growth; and in short, how to reduce the cost and increase the production. Then, having learned all this, and having made two blades of grass grow where but one grew before, what will it profit him, if by a system of unjust taxation or class legislation, some other fellow gets the extra blade?

This is a condition that confronts the farmer of the present and must be remedied by the farmer of the future if he would hope to win success. It has taken the farmer a long time to realize all this, it was hard for him to understand and still harder for him to believe. His rugged honesty revolts at the thought. The log schoolhouse did not teach him the art of graft, political science, nor frenzied finance, as applied to-day; but it did give him greed for knowledge and as suddenly as before, when he became a warrior, he now becomes a reader and a thinker.

The Farmer of the Future.

Let us lift the veil, and as we look down through the vista of the coming years, we catch a glimpse of the American farmer of the future. We see him come forth a full-fledged, well-rounded,

broad-minded practical farmer. The scales will have fallen from his eyes and all prejudice to "Book Farming" will have vanished from his mind.

Our own splendid State College will have taught him how to apply science to the art of agriculture, and having drunk at its fountain, he will accept agricultural education as a necessity not only for himself but for his children. He will understand soil types, and be able to classify them with reference to crop adaptation, thus eliminating waste through lack of knowledge. The principles underlying soil fertility will have been so well-grounded into his early training that he will not only understand how to secure it, but will fully understand how to maintain it when once it is secured. Feeding the plants will be quite as profitable and fully as important as feeding the animals. He will have learned that single handed and alone he can accomplish but little; and this fact alone will have caused him to give up that independent life which isolated him from his fellow farmers and prevented him from making real progress.

The spirit of co-operation will be an important factor in his makeup and he will always be found ready and willing to lend his voice and vote to promote every public or private enterprise that is progressive and tends to better agricultural life. He will not balk at the occasional failure of a leader, but will pull steadily and faithfully on to the end of the furrow or until the span of life has been completed.

Again, as in days of yore, we see him turn instinctly towards his own, the Grange. There he learns that the true secret of his success lies in intelligent organization. He enters her portals and there is taught that if he would win success, he must present the same solid front to the enemy that he did in the days of the Rebellion. We see him go to the polls and vote, not as the party boss dictates, but as best protects the interests of his fellow farmers and the common good of humanity, placing principle above party affiliations. Quietly he gathers up the reins, which fell from his hands at the call of his country, and proceeds to drive.

He enters our State and National halls of legislation, and as a result of his efforts, we see the State and the Nation join hands with him in building and maintaining public roads. We

see the Parcel Post established, and well-managed under the improved and extended Rural Delivery, a child of the Grange. We see the citizens go to the polls and vote direct for the President and the United States Senators, thus preventing, in a measure, the illegal use of money in politics, and making the individual responsible for the character of the men whom he assists in placing in the office.

Lastly, we see the little red schoolhouse with which "Rube" dotted the landscape from the Atlantic to the Pacific, supplanted by the Township High School, surrounded with a plot of

tillable land and well equipped with barns, built according to modern architecture, a building for manual training and a kitchen where Domestic Science is taught.

The people have come unto their own. Henceforth you will all be captains of industry. Remember that "Rube" with his log schoolhouse, built the foundation for his empire on firmer rock than ignorance and superstition, more stable and more lasting than the rule of the sword, and more just and equitable than the rule of capital, as it is founded upon the universal Brotherhood of man and the over-shadowing Fatherhood of God.

Two C's of Dairying

By C. R. Snyder

Instructor in Agriculture



GENERALLY speaking, one can consider four important C's in the dairy business. All of them form a strong chain consisting of four links, and when one link is missing or weak the entire business is on the decline. In fact, these links are so important to the dairyman that without them he would have no dairy, because these four C's or links are the foundation of his business.

The four essential C's are: Cows, crops, cleanliness and carefulness. In this article I shall speak chiefly of the last two; cleanliness and carefulness because these two are the ones that the dairy boys can help to regulate and control. It is you who do the milking, the handling of the milk, the washing of the utensils and the caring of the cow.

Of these four links, cleanliness seems to stand out paramount. By cleanliness, I mean not only keeping the stable clean but keeping yourself and the cow clean because this is the only way in which you can produce clean milk for our use.

When milk is clean it is the most wholesome food in the world and when it is dirty it is the most harmful food we can use. If the dirt in the milk were nothing but bits of straw, manure, hairs, etc., cleanliness would still be important, for not one of you would like to strain out the

above dirt before you could use the milk. Such dirt, however, is not so harmful as the millions of different bacteria that are imparted to the milk by uncleanness and careless methods. These bacteria are the "little things" that cause the trouble and in order to control them you must be clean and careful in your work.

Many epidemics of typhoid fever, diphtheria and other serious diseases have their origin in unclean milk. In the investigations of these epidemics, the cause has often been traced back to the milker or attendant. At one time, he may have been associated either directly or indirectly with a person who has had the disease in question and thus carried the germs to the milk. Many of these outbreaks could have been avoided had the attendant been more careful.

Did you know that a baby has less chance to live a week than a man of ninety and less chance to live a year than a man of eighty? The reason of this startling statement is unclean milk.

It is true that the baby question here at school is not a serious one, but perhaps in later years some of you dairy boys may have a dairy of your own and then you must consider this question or fail in your business.

By uncleanness you can convey to the milk almost as many germs as the cow herself. How often after cleaning the stalls, throwing down hay or doing some other chore, you rush away

and begin milking without even stopping to think of the dirt and dust hanging on your clothes and hat. I'll venture to say that few of you do, yet clean clothes are absolutely necessary for clean milk. Use the brushes we have for that purpose and brush the dirt off your clothes. It will not take much time and will more than pay you. Then put on your milking suits and see that they are clean. Of course it is very easy to get them soiled and dirty and if they are ask for a clean one. You can have it just for the asking. Keep your laundry busy. Some of the leading dairies furnish clean suitse very day and some even require them to be sterilized. However, you can not do this but you can keep them clean and that is all we ask. Clean clothes, then, is the first essential of cleanliness for the milker.

Another precaution you must not overlook and that is clean hands. Did you ever notice the hands and finger nails of a barber in a sanitary barber shop? If you haven't, the next time you go into a shop take particular notice of them and then ask yourself why he keeps them so clean. If you cannot answer it, ask him and he will tell you that dirty hands are carriers of disease germs and filthy nails are ideal places for bacteria to breed. He must keep clean hands so that he will not carry germs from one customer to the other. So it is in milking, if you have dirty hands you cannot help but carry germs to the milk. Wash your hands before milking and keep them dry. Quite often a beginner in milking will moisten his hands with milk. That should not be done for it helps to make the milk dirty. It is a good policy to wash your hands after milking a cow even if you know that the cow is perfectly healthy. It pays to play "Safety First" even in a dairy.

You know that we want our herd to give us as much milk as possible so milk the cow dry. Not only will this benefit us but also the milk and even the cow herself. In milking her dry, naturally the amount of milk in the udder will be lessened and hence give a smaller space for bacteria to develop, a factor you must work for in producing clean and pure milk. Take your time in milking but do it right, although it is good if a cow can be milked quickly, but this takes an expert milker and few of you boys have reached that grade. The value of being

able to milk fast is that the milk will be richer.

When beginning to milk, do not collect the first milk or fore milk. The inside of the teat is moist from the last milking and dust is likely to gather in it, so discard this milk.

Quietness will also give results in a stable. A cow does not like to be disturbed any more than you do. A loud and boisterous attendant will get the cow excited and thus lessen her flow of milk. In one of the agricultural papers of recent date there was an article of a certain dairyman who had this sign in his stable: "No Swearing Allowed." He learned, by experience, that quietness pays so he took this method of reminding his men, not only for their own good but also for the benefit of the cows.

A cow will respond to kindness and gentleness almost as much as a dog or horse. She knows the boys who treat her right and those who pet her.

What has been said about cleanliness and carefulness in milking can readily be applied to the handling of the milk and in the care of the utensils. Remember that when you are handling milk you are dealing with a food that can be easily contaminated.

Immediately after you are through milking a cow, take the milk over to the dairy or milk house to avoid odors from the stable. These characteristic stable odors are easily absorbed by the milk, thus making it rather objectionable.

Before the milk gets cool, strain it. Straining removes only the coarse dirt and it is done best by several thicknesses of cheese cloth or similiar material.

Accuracy and carefulness count in weighing the milk. Give the cow credit for every ounce of milk that she gives and you will be surprised to see how fast the ounces make pounds. If the cow gives ten pounds and one ounce, give her credit for the ounce, not only for the ten pounds. With our two milkings per day, in one month this extra ounce will increase to almost four pounds, or about one hundred pounds for the twenty-five cows you are now milking.

Doesn't it seem worth while? It is true, the milk would not be lost even though you did not give the cow credit, but by counting this extra ounce it will help us in keeping an accurate record of each individual cow.

In separating the milk, you must think about

three things—the temperature of the milk, the speed of the machine, and the rate of which the milk is fed to it. Milk separates best when it is fresh from the cow; or a temperature of about 85 degrees. Never guess at the speed of the machine. Follow the directions on it and if they call for a speed of 45 to 50 turns of the crank per minute, it is safe and best to give 50 turns. If the bowl falls below its required speed, the separation will be incomplete, and again if the speed is too great the butter globules will be broken. Running water through the machine before starting, not only helps to get up speed with less vibration but it may prevent cream from sticking to the inside parts of the separator; then pour the milk into the separator in a steady stream.

Experiments have shown that dirty utensils greatly increase the number of bacteria. Each succeeding utensil that the milk touches adds a certain number of bacteria; if clean, very few; if dirty many of them. Too often the surfaces and corners contain millions of bacteria and of course, when new milk is put into the utensils, it becomes contaminated. Thus we can see the importance of having clean utensils. The "cleaning" of them frequently amounts to nothing more than throwing them into luke-warm water. This only helps to increase the amount of dirt on them, and if not carried on any further, it is almost worse than nothing. After you have rinsed them in luke-warm or cold water, wash thoroughly in hot water, using a brush and some cleaning preparation. Rinse them again and then put them in clean boiling water for at least two minutes, or hold over a steam jet for the same length of time. Then, while they are still hot, put them out in the drying rack and here let the air and the sun finish the cleaning.

The straining cloths can be cleaned in the same way. All the utensils which come in contact with the milk must be clean and kept clean; the churn, the butter workers, the separator, and all other machinery in the dairy room should be cleaned thoroughly.

Occasionally rinse out the churn with lime-water. This is done by making a saturated solution of lime water, using air slacked lime, placing this in the churn, running it for an hour and then drawing out and rinsing before using. Be careful in cleaning the hole in the cream or skim-milk screw and all the small tubes in the

separator. If these are allowed to get dirty, there will be a considerable loss of butterfat in the skim-milk.

In the dairy room, do not be afraid to use water and a little "elbow grease." Wash the floor, the benches, and walls so that dust and cob-webs will not find a place to lodge. Keep the record sheet clean and make your figures plain and distinct.

Thus far I have said nothing about the cleanliness of the cow and her care, nor have I mentioned the care of the stable, two very important subjects. These subjects, however, will be dealt with in a later paper.

Care of Cream Separators.

Not all the blame should be placed on the cream separator if a layer of cream is found on a can of skimmilk which has stood several hours, contends A. L. Beam, of the dairy husbandry department of Pennsylvania State College. Unless reasonably good care is taken of the farm cream separator, the saving that it will effect in skimming milk will be overbalanced by preventable losses. A few of the more important points to consider during the winter months are as follows:

Separate the milk as soon as possible after milking. No machine will skim cold milk efficiently. If the milk has become cold, it should be heated to about ninety degrees before being separated.

In cold weather it is advisable to warm the bowl with a dipper of warm water before separating.

Maintain a uniform speed in order to keep the proper proportion of cream to skimmilk.

Regulate the cream screw until the amount of cream is between twelve and fourteen per cent of the total milk separated, so that the maximum amount of skimmilk may be saved for use on the farm.

Warm water usually gives better results than skimmilk for flushing the cream from the bowl after separating during cold weather.


Wash the separator parts in luke warm water and then rinse in scalding water after each separation.

A bowl which vibrates causes a loss of fat in the skimmilk. Be sure that the machine is level and firmly attached to its foundation.

Adjust height of bowl so that skimmilk and cream will flow out of their respective spouts.

More Beef from Pennsylvania

By H. P. Sprenkle ————— State College, Pa.



TO start with the much used expression, "produce more food," there are other reasons besides this patriotic appeal why more beef should be produced in Pennsylvania. However, at this critical time these facts are made more emphatic and should carry greater weight.

In the first place, Pennsylvania is a natural grass-growing state and consequently very well adapted to the economical production of beef. For greater production these pastures should be given more attention, such as reseeding and fertilizing occasionally, in order to be made to maintain a larger number of animals. Furthermore, it is brought out by the number of cattle in the state and the area in pasture land that the number of cattle, calculating on the basis of four acres per head, could be greatly increased. An additional feature to these pastures is the many streams which flow through them and greatly enhance their value.

Pennsylvania is also a good corn producing state and thus one can produce and fatten his cattle for market without any transportation. When the cattle are finished, the large eastern cities offer a very good market, in fact they demand beef, because of the type of population.

There are two general methods by which beef cattle can be produced for the market. First, by growing the steers to maturity and then fattening them, and second by raising baby beef.

The first method is to be recommended where the land is not so well adapted to the growing of crops. In a case of this kind one can maintain the breeding herd on pasture during the summer months and largely on roughage during the winter. The young stock can also be developed under similar conditions. Usually enough corn can be grown on these areas to fatten the young cattle for market at the age of two years. This is a very practical method of producing beef.

The second method, or the production of baby beef, is recommended where the land is well

adapted to the growing of crops. However, everyone living in a section where crops can be profitably grown should not undertake this enterprise, because to produce baby beef economically, requires a man who has had much experience in feeding. In raising baby beef it is very important that the calves be kept growing all of the time in order to be ready for the market at an early age. To do this it is necessary to feed a large quantity of concentrates. Consequently it is quite evident that this type of beef production is well adapted to the crop-producing areas.

Following the discussion of the reasons and methods for producing beef in Pennsylvania, doubtless you will say, "does it pay?"

During the past three years experiments have been conducted at the State Experiment Station to determine this point, and the results always have shown a balance on the right side of the sheet.

The nature of the experiments has been briefly as follows: A number of grade beef cows were purchased and bred. During the summer the cows were left to run on pasture, and the calves allowed to remain with their dams. A few of the best calves were selected and fed a heavy grain ration and fitted as baby beef. During the winter the cows were maintained on a ration consisting of corn silage, fed as much as they would consume, and cotton seed meal at the rate of three pounds per one thousand pounds live-weight. They were kept in an open shed and thus the maintenance cost was very low. The following summer they were again put on pasture. The next winter the young stock, practically mature then, was fattened for market. The results for the past three years show that by the above methods beef can be profitably produced in Pennsylvania.

If, then, the state is well adapted to beef production, and there are methods suitable for every section, and that it is a profitable enterprise, and finally at this critical time a patriotic duty, "do your bit" to relieve the serious situation and produce more beef.

It's Lo, The Rich Indian

By Robert H. Moulton

From Hoard's Dairyman



BIRD-ON-THE-PRAIRIE DOES HIS HARROWING ON HORSEBACK

POOOR Lo is no longer poor. He is a land holder and stock raiser. He has money in the bank, millions of it, or will have when the government completes the distribution of payments recently authorized. For his farm products he is receiving war prosperity prices. From his oil lands royalties are flowing in with an abundance that would make a white man dizzy.

When payments out of tribal funds authorized by Congress at the last session have been completed, including an earlier distribution, the Indians will have received from the Government \$10,585,688. In addition, during the last three years, about \$4,000,000 has been advanced to stock Lo's ranges on various reservations and to purchase farm equipment. From this capital investment he is now receiving returns in some instances of more than 50 per cent.

The Indian Office has just completed the payment of \$633,300 to the members of the Chickasaw Nation, the distribution of which was authorized in 1914. Further payments authorized this year began on August 15. These will amount to \$6,237,300 to the Choctaws, \$938,100 to the Seminoles, \$1,206,800 more to the Chickasaws, making in all, including the earlier distribution, \$9,071,900 which these Indians have received in cash.

To the Chippewa Indians in Minnesota payments will be made under the recent act amounting to \$1,513,788. The adults competent to take care of their interests will receive their share of the money. In case of minors and others the money will be deposited in banks to be used for their benefit under the supervision of the officers of the Indian Service.

Of greater interest, however, is the fact that the American Indian is not only the holder but also the producer of wealth. He is beginning to put money into the bank himself as well as having the government put it in for him.

This is largely the result of a plan to enable him to make use of the natural resources available on the various Indian reservations heretofore utilized to a great extent by white men for their own benefit under the leasing system. Only last week there were put on sale at the Chicago market fifty carloads of cattle from Indian herds. In many places the Indian has shown that he cannot only raise cattle but also obtain the top market price.

During the last three years about \$4,000,000 has been expended in the purchase of cattle, sheep, and horses to stock the Indian ranges. The handling of these herds by the Indians has more than justified the investment. For example, the tribal herd placed on the Crow Indian reservation in Montana in the spring of 1914 at the cost of \$405,-108 showed a net profit on December 31, 1915, of

\$297,601. The tribal herd of sheep on the Jicarilla reservation showed gross returns in the first year of \$17,250 on an investment of \$23,477.

The live stock on the various Indian reservations is worth more than \$28,000,000, as compared with \$22,777,075 in 1913. In addition to this increase of more than \$5,000,000 in value the Indians have sold \$5,498,266 worth of stock and slaughtered \$2,307,431 worth for their own needs.

As a herdsman the Indian has been particularly successful. The highest price paid on the Chicago market for a grass fed steer was recently received by an Indian of the Crow tribe on a day when the then general market value of the cattle was lower on other days of the season.

Gradually the original unhyphenated American is taking possession of his own again. He is managing his own farm and reaping his own harvests. Leases of allotted land decreased in number from 28,847 in 1913 to 10,426 in 1915, a change in acreage of from 3,109,209 to 1,868,779. In 1915 the area of tribal lands leased was 8,122,918 acres. In 1913 it was 10,568,948.

The Indian is becoming a competitor at the agricultural fair with the white man. He is raising his own supplies, relieving the government to a considerable extent of the necessity of making gratuitous issues of food under treaties to induce him to remain where he is on the reservation instead of reverting to the nomadic habits of his forefathers.

Nor is he any longer a vanishing race. The number of Indians increased from 300,930 in 1913 to 309,911 in 1915. Gradually the tendency toward tuberculosis, trachoma and kindred diseases, which prevailed among them to an alarming extent, is being checked. This is due to a medical campaign and the improvement of housing conditions.

It appears, therefore, that the turning point in the history of the Indian has been reached. His numbers are increasing, his wealth is growing, and he has taken a place among the white men

as the producer of wealth in a system of civilization with which his own manner of living was in direct conflict.

Gas Engines on the Farm Release Men for War Duty.

E. N. Bates, of the Pennsylvania State College school of engineering, while addressing the farmers attending Farmers' Week at the college, said the difficult problem confronting the farmer today was the production of a maximum amount of food products at the minimum cost of production in man power. In order to accomplish this it is necessary to make careful use of the gasoline engine, he asserted.



AN UP-TO-DATE INDIAN FARMER


It has been estimated from the 1916 census report that there are upwards of 25,000,000 horses and mules in the United States. About one-fifth of our land now under cultivation is required to produce the food necessary to maintain these animals, and the time of about 1,000,000 men working twelve hours a day is consumed in the care of these animals. A large part of this food-producing land and of the labor of these men can be released for other purposes by the proper use of the gasoline tractor and truck.

The care of a gasoline engine is very simple, if the directions of the manufacturer are followed closely. Ordinarily the engine only requires to be lubricated and adjusted. Bearings should not be allowed to pound, and the best oils obtainable should be used.

— *Past, Present, and Future of Agriculture* —

By *N. F. Bartley*

Euclid, Pa.



WHEN God created the earth it was a scene of picturesque beauty, unbroken forests crowned the hills and valleys and Nature undisturbed for ages had wrought upon, and beneath the surface in preparation for the time when the hand of industry should cause the one to bloom as a garden and the other to give up its stores of untold wealth. He looked upon it as a fit habitation for the abode of mankind; but mankind saw that it was not necessary for him to cultivate the soil as there was an abundance of animals and fruits for his sustenance; hence, we have very little account of any of the cereals being raised until the time of the famine in Egypt. The tillage of the soil and raising of grain was only a side issue. But as time rolled on and conditions changed man saw that there was money as well as pleasure in the cultivation of grain—so that in all lands agriculture has been and will be a profitable employment. But no country has succeeded so well in agriculture as the United States, but we accomplished it at great hardship and expense.

Sturdy men with strong arms and stout hearts felled the forests. Brave women endured the loneliness of the wilderness, met the many perils and dangers of every day life with a heroism deserving of immortal remembrance. And in place of the forests, broad green fields enriched with labor and enriching the husbandman are in the place. Active, bustling villages and cities have effaced all signs of early hardship and suffering, and the old scenes about which we have lingered are no more. So pass our dreams. The infancy of Nature has reached its age; old-fashioned modes of life with their simplicity of manners have passed away with our forests; farm machinery which answered the purpose of its day has been supplanted by that which is more modern and serviceable.

But the question may be asked, How do we account for this advancement in agriculture? and

the answer is simply by education. There was a time in the history of agriculture when our forefathers cleared our forests that all they had to do was to "tickle the soil" with a hoe, plant the seed and they were sure of a bountiful harvest. But they had no knowledge of the soil. They seemed to think that they could practice this method of farming without any depletion of the soil, and the result was that the soil was becoming poorer and poorer; and then they began to search for a remedy for its restoration. The remedy came in our Agricultural Colleges and Experiment Stations, followed up later by our Farmers' Institutes and Granges and other kindred organizations.

Farmers of to-day know that in order to make their land produce they must feed it. You can't be taking from all the time and giving nothing in return, for as sure as you do you will come to the end. But then there is a class of people who see no good in anything; always satisfied with the present; never rising above the brute creation. To such people exhortation or advice would be like casting pearls before swine.

It should be the aim of every individual to make this world better by living in it; to make two blades of grass grow where only one grew before; to excel his forefathers; in short, to be the peer of everybody else. Never be satisfied with fairly good, pretty good or good enough. Accept nothing short of your best; your reputation is at stake in everything you do, and your reputation is your capital.

But what about the future of agriculture? What will we have accomplished in the next decade? During the next twenty years we are going to see a great revolution in farming. Agriculture is to be more intelligent and more intense; new plants will be introduced; a better use is to be made of the land, and an acre will produce twice as much as it now produces.

Beneath our feet is the fertile and productive soil. We have beautiful homes with everything needful to make life comfortable and worth liv-

ing—all within easy reach. The hills, rock-ribbed and ancient as the sun; the vales stretching in pensive quietness between, the venerable woods, rivers that move in majesty, and the complaining brooks that make the meadows green.

ADVICE TO FARMERS.

*By F. R. Stevens, Agricultural Director,
Pennsylvania State Chamber of Commerce.*

Our transportation facilities are strained to their utmost and all industries, including agriculture must adapt themselves to these conditions and plan farther ahead than usual for spring deliveries. Business men are already ordering materials as far ahead as they can estimate their needs, and unless our farmers do the same thing the agricultural situation which is now very acute for lack of labor, will be tied up still more because of nondelivery of material.

Fertilizers are scarce because the materials which go into them are scarce. The demand is great and transportation is bad in car load lots and practicably impossible in less than car load lots. It is, therefore, none too early to make an effort for the delivery of all fertilizers needed, and you should make sure that they be delivered at your station not later than March 1st.

New machines and parts of machines are in the same category as to delivery as fertilizers. With the added disadvantage that these machines usually come in less than car load lots and have to go through transfer points where because of congestion due to lack of labor for assorting, long delays are not unusual. Even in those cases where parts are shipped by express a great deal of difficulty is being encountered because of congestion in shipping. In this case this is not only due to the unusual increase in business with the express companies and the lack of labor, but it is also due to the severe cutting in the number of express trains on the railroads.

Delays in farm work because of broken or missing parts is very exasperating, and this year will cause more serious losses than usual. It is time now for every machine which will be used next year to be gone over carefully and parts supplied for those worn or broken, and every machine put in working order for the spring, and even in addition to this the situation is sufficiently acute to warrant the laying in of

supplies of such parts as are sometimes needed throughout the growing season, such as plow points, cultivator blades, knives for mowing machines, etc. A little time spent at these matters now will result in a large saving later.

Another serious situation is that of seeds, and what applies to fertilizers and farm instruments as to shipping applies likewise to seeds, with the addition that seeds should be on hand earlier this year than usual because of the unreliability of a large amount of seeds which have been examined so far this winter. Men who have already received seed and tested it for vitality, complain that quality of this seed is very poor and that in many cases they have been obliged to reject it altogether.

This situation is so serious that the County Farm Bureau, Departments of Agriculture and local Chambers of Commerce have volunteered their service in selecting sources of reliable seed and purchasing in large quantities. The last growing season was not a successful seed producer except in some favored localities, yet I believe there is sufficient good seed for all our needs during the coming year in case these places are sought out and seeds selected from them.

It is absolutely essential, therefore, that the seed be purchased in advance of seeding time that it may be properly tested and treated so that when seeding time comes we will not take a chance on a great loss from defects of this kind. Last year I saw a large, well tended field of corn which had only four-fifths of a stand because of the poor vitality of the seed, and yet the cost of preparing and growing that field was fully as great as though the stand were perfect. In times like these we can take no chance of loss in those things which we can prevent by a little foresight.

PROMINENT AGRICULTURISTS GIVE LECTURE.

R. A. Hayne, Luther S. Sutton, Miss Wigert, and Mrs. Howie, representing the International Harvester Company, spent a most enjoyable day at the school last month. Mr. Hayne lectured and gave demonstrations on corn culture, Mr. Sutton, who comes from West Virginia, spoke on horticulture, Miss Wigert told of the newest things in domestic science, and Mrs. Howie, an

expert dairy woman, told all about this branch of farm work. The following are some of the impressions left with the students:

Notes Taken by Students from Lectures on Agricultural Day.

A fertile soil means a prosperous people.

We can keep the soil fertile by:

1. Raising more live stock.
2. Saving the manure.
3. Pasturing rolling lands to prevent washing
4. Adding humus by green manures.
5. Supplying needed elements.
6. Rotate the crops.
7. Growing clover and alfalfa.

Soil produces food and clothing.

Corn is King of the agricultural products.

It requires 15 to 20 ears of corn to plant an acre.

Next year we are likely to have more trouble in raising corn than ever before, on account of poor seed.

Seed corn should be gathered in the fall and directly from the stalks. It should be tested before being planted.

The best place to string corn is in the attic.

We raise enough corn in one year to pay for six Panama Canals.

Ninety-seven per cent of the corn is taken from the air.

Corn lice are the milk cows of the ant.

It pays the farmer more to feed his crops than it does to sell them.

Be kind to animals and they will not jump or run the minute they see you.

In order to succeed in dairying, the cattle must receive the best of care, and the first of care.

A man who pets a cow with a milk stool will never succeed in dairying.

Butter is composed largely of air and wind.

The short lecture in the evening was on the "House Fly." We were told how it lives, how it carries germs and how to fight it.

The moving pictures in the evening were on farming. One reel showed the old and the modern ways of harvesting wheat and hay. Another showed the people of Chicago working in their back yard gardens. The last showed the great tractor working in the fields.

We were taught how to make knots in ropes, how to wrap them and also an easy method of breaking them.

WHAT THE FARM CONTRIBUTES TO THE SCHOOL.

By James S. Giffen, Head Farmer.

At this time, when production of farm products mean so much toward winning the world war, it is well for every Indian School farm to expend every effort towards making the products of the farm so far as possible aid in the support of the school.

The Carlisle farms have during the past harvest season produced very satisfactory crops, and no effort has been spared by the boys who have been actively engaged in the work of planting, caring for, and harvesting them to get the best results and save all of the crop. Our available acreage, when pasture, garden, athletic grounds, etc., have been taken care of, amounts to about 225 acres.

We have two big silos on the place to care for our dairy herd, holding about 300 tons and taking about 25 acres of good corn to fill. The new one put up this year holds 130 tons and certainly is going to pay for itself during this one season on account of the extreme high price of hay and the scarcity of this season's crop. If it had not been for the timely building of this silo a large quantity of hay would have had to be purchased this year. We have a good ensilage cutter for filling the silo, and with the help that the boys from the shops and school give us are able to make record time in cutting the corn and getting it in when it is just in right condition.

After we had cut enough corn to fill both silos we had 21 acres left of first-class field corn which yielded 1,342 bushels and about 3500 sheaves. This fall a great many of the farmers in this vicinity were unable, owing to the scarcity of labor, to cut and shock their corn early enough to escape the hard frosts and the condition of the fodder was not very good, but thanks to the efficient aid of the shop boys and their instructors, we made the entire cutting in less than two days and got it shocked without a touch of frost.

One thing that the students at Carlisle like more than anything else is spuds and more spuds, so this year we planted in all 22 acres, and while there was a good deal of complaint from boys with lame backs about gathering time, those same boys are now able to eat and enjoy their share of the bountiful crop of good, clean potatoes, amounting in all to 2,628 bushels. Growing

potatoes in Pennsylvania is not all fun, as all of the pests and diseases are plentiful in this old State, so that you have to keep planting your potatoes on different parts of the farm each year in order to dodge the bugs, and all summer long some one has to drive the spray wagon loaded with poison and bordeaux for pests and blight.

This year above all others it was a good thing to have a good crop of wheat and the 57 acres we had in yielded 1,400 bushels, all but enough for seed being sold for \$2.02 a bushel.

The 60 acres in hay yielded 104 tons, part of it being alfalfa, from which we cut three crops.

Twelve acres in oats yielded 550 bushels, and a small piece of barley produced 60 bushels.

We usually try to raise around 100 pigs each season and have enough so that we can furnish about 500 pounds of pork each week for the Sunday dinner during the winter months. Last year we butchered 42 hogs during the winter, totaling 6,980 pounds, and sold 82, mostly young shoates. We keep two breeds of hogs, the Berkshire and a fine lot of full-blood Duroc Jerseys.

The dairy herd, consisting of 35 head, during last year delivered to the school table 5,880 gallons whole milk, 11,609 gallons skim milk, 864 gallons buttermilk, 415 quarts of cream, and 2675 pounds butter, besides selling 20 veal calves, 2 heifers, and 12 yearlings. This winter we have 17 head of young heifers to add to the herd.

The Spud Patch of Wapato Dan

*By Frank Verigan
Senior.*

WAPATO Dan gazed lazily at his little plot of ground. It was almost fenced. The fence was the remnant of a real good barrier, but had seen better days. Through neglect it was put down and out by stock and man, aided by sweeping winds. It was beyond the patching stage, and here and there a bending picket or an unsound post held up fragments of boards and different kinds of wire. No effort was necessary for an animal to get through, but once through what had the animal accomplished? The little enclosure was barren, and judging from appearances it had been so for several years. One would naturally wonder why it was ever built.

Old Two Arrows was blind. He had been so for many years. At one time in the days gone by he had built quite a comfortable place. He had fenced it with pride and had his little truck garden, and also raised some forage for his old grey mare. In all he had about ten acres under cultivation, and with the aid received from the Indian agent this was sufficient to keep the larder of his small family well supplied. Of course, there was the dried venison, the salted and dried fish, and the canned and dried berries.

Since the loss of his eyesight his garden was insolvent. It was seven years since that hunting trip to the mountains, when he was caught in a storm. The sky had clouded up, so that the

day grew dark before its time. Clouds hover about when one is up in the mountains, and one caught in a mountain storm experiences the real thing. Lightning flashes gouged here and there, but no matter where it struck the flash illumined every nook and cranny. The lightning drew nearer; it knifed the heart of every cloud; its flash made them the darker. Thunder rolled and rumbled, then broke; it echoed and re-echoed through the gorges. Rain pattered and poured, with more pouring than pattering. Two Arrows was drenched in his fight to keep dry, so he gave up the struggle and headed for home. Because of the torrential rainfall, streams he crossed in coming out were swollen and unpassable. Trees swayed and switched; weak limbs were hurled down all around him; old snags tumbled in his vicinity, and two frightened deer raced by him unnoticed. He leaned against the sheltering side of a tree. Then the great flash came. The last thing he saw was that flash—then pain, then darkness. His faithful wife found him the next morning, groping blindly about and tottering. The tree was still intact, but the lightning had peeled off a strip of bark from its top to butt, finally lodging at its roots. The tree would die, and poor old Two Arrows was doomed to darkness for the rest of his mortality.

Wapato Dan was his son. He had been called this name by his mother. When quite young he

had shown an ingrown fondness for potatoes, and potato, translated into her tongue was wapato. She called him "Little Wapato" He went to a Government school and there they knocked off the "Little" and affixed "Dan." Wapato Dan is the name he has now, as he leans lazily against the friendly door-jam, and lets his careless eyes wander here and there. He puffed on a cigarette of his own make. After several puffs, he threw it down among several other stubs, and watched it until its curling life had finally left it. By this time he had another rolled.

Old Two Arrows, unaware of his son's presence, talked to himself in tones of endearment. His weary old heart was overloaded with grief; his wife and heart's pride had passed to the tribe in the Happy Hunting Ground; he was without care. Wapato was of no use to his father or to himself; to attend all the Wild West shows and pony races was his only ambition. Two Arrows was on his last lap, and what had he to leave behind him? As far as his estate was concerned, it was nothing to be proud of; as far as his son was concerned, he had every reason to be sorry.

Before the death of his mother, Wapato had applied at the nearest recruiting office for admission into the army. The recruiting officer, after consulting the Indian agent, conveniently found the perfect physique of Wapato to be too light for his height and other measurements out of proportion.

This is the story of Wapato Dan—good for nothing—shiftless, hopeless, and useless.

Wapato is at the stage in his life where the road forks—at the stage in his life where the next step governs the rest of his days. It seems as though an omnipotent hand was present to aid this shiftless fellow in his decision. As he stood there smoking, his eyes, looking forth from pouchy lids, were fixed on the numerous cigarette stubs in front of him. His dopey gaze fell on something green. It held his eye, then it aroused his curiosity. He sauntered lazily toward it, and stooping, found it to be several little green sprouts. His mind went back a few days, and he remembered his mother before she died had sat there peeling the supper potatoes, carelessly dropping the parings on the ground. His thoughts were lost at sea, as it were, but finally they found the right course.

"They're trying to live," he said. He went on with his thoughts, "those peelings just happened to be there, and without any human help they are struggling for an existence. What would real seed potatoes do? What would good cultivation help them to do? He paralleled himself with the potatoes. Was he good seed? Was he giving himself the right cultivation? He was so occupied with his thoughts that he fumbled his cigarette in the making. He finally deduced that he was some kind of seed and that good productiveness depended a whole lot as to the cultivation. He threw down his cigarette and exclaimed, "I am good seed, but I have not given myself a show." His father, who sat on the porch, turned his sightless eyes toward him and said, "Yes, my son, it is good seed but have the 'wapatoes' come up yet?" The old man referred to the good seed potatoes that his wife had procured from the agency farmer. She intended to plant them and had coaxed and begged Wapato to hook up the old grey mare and break up the ground and aid her in the planting, but Indian pony races drew his attention and potatoes were forgotten. He didn't answer his father verbally, but in quite another way. He resolved that this good seed should not be good in vain, for he would give it a chance.

Straightway he kicked the old fence together, and sorted the substantial pieces from the useless and burned the latter. He laid off the plot that had not been touched since his father had lost his sight. With baling wire and rope he repaired the old harness. He braced up the rusty old plow and then he coaxed the wondering old mare into the sagging barn. He threw the renovated harness onto her, and hooked her to the plow. The old mare fell into the harness with a will, for she had visions of good forage. She remembered how she used to heed the commands of Two Arrows, and when harvesting time came around he had rewarded her with many a good feed. But the land must be worked first, horse sense told her that, so she plugged away and was contented to be turned loose at night to graze and feed on whatever wild grass she could pick up on the almost barren allotment.

When the plowing was finished, with the aid of a few spikes Wapato made a harrow out of the best pieces saved from the old fence and

parts of the old barn. He harrowed and furrowed and then carefully dropped and covered his seed. He ditched in the water. The government had dammed up a lake back in the hills for the purpose of holding water in a natural reservoir until it was needed most, which was during the summer drouth, usually in July and August. It was distributed in small canals to different parts of the reserve. The agent, on an inspection tour, warned Wapato against using too much water on potatoes, and at the same time informing Wapato that he was doing as much for his country as were those preparing to fight in the trenches, also telling him that the man behind the gun depended on the man behind the plow for his energy and adding, "You are no slacker, nor are you a shirker." The next time he came he brought farm bulletins on potato culture. Wapato studied them and applied all the information his means would permit. He was forever in his patch; he did things that the most painstaking people would deem unnecessary. He had a retouch of that old potato liking that had named him, only the new spud mania was toward production rather than consumption.

In the days before his turn of character, the winning of high stakes at the pony races did not please him half as much as when the first little sprouts cracked the crusty earth and peeped out. When the leaves assumed an embracing attitude he didn't know how to act and he was as proud as parents when baby has its first tooth. As he toiled away, he forgot about smoking and talked and cooed in his patch all day long. Appearance showed it was good seed; it was good cultivation also, for that fall Wapato Dan's persistence in spudology was rewarded by a very good yield, averaging 250 bushels per acre. The Indian agent contracted his potatoes to a government army supply agent at \$1.25 per bushel. Wapato was satisfied. He had given the seed a square deal and it had returned the favor.

In the long winter months, when the weather would permit, he worked at building a new fence and repairing the old barn. The old grey mare stood in her stall, enjoying her regular feeds of meal and luscious hay from Wapato's forage crop.

In the days before his turn for the better,

Wapato's heart had been invaded by Wanda, the young daughter of Little Chipmunk, but for his troubles he had been snubbed repeatedly. Now he felt he had license to pay court to any girl on the reserve, and as he could not oust the fair invader from his heart, he decided to keep her there, so accordingly he said, "Will you?" and she said "Yes." They were wedded in mid-winter, when the weather is cold but the heart is warm. Wanda took charge immediately and set the old place aright. Her tender care made the declining days of old Two Arrows ones of genuine contentment.

Did you notice that place we just passed—that place on the left-hand side of the road—where an old grey mare stood knee-deep in a field of clover beside a big red barn, the barn set right back of a home of modern architecture? Did you notice the fellow driving the car that just passed us? He is the owner of that place; that old gentleman with him is his father; the rest of his family, two youngsters and their mother, was in the back seat. The fellow is Wapato Daniels—Farmer.

Two Arrows was on his life's last lap. What had he to leave behind him? His estate had fallen into good hands and he was glad; as for his son, old Two Arrows had every reason to be proud of his only boy, so his days were long and joyful as he played with his grand-children. In the quiet of the evenings he would relate to them their tribal stories; to their great delight he would mimic the different animals that played parts in these stories. The old grey mare grew aged along with Two Arrows, so there was strong companionship between them, because of their mutual doings in the days gone by; so the children would guide him to the pasture gate and here the old mare would always meet him; she would lumber up to him and they would visit in their own way for hours at a time. When the children him took to the house, she would nicker as he was about to disappear and he would turn his sightless eyes toward her and smile.

This is the story of Wapato Daniels—Farmer. There was good seed in him and he gave it half a chance; in fact, his success is based upon his hobby which is: "Good seed, good soil, and give both a square deal."



The Colonial House at the First Farm—Located in a Wonderful Grove of Trees of Many Varieties.

ONE of the most attractive features of the farm to the pupils is the old-fashioned farm house, which was built some time before the Civil War and was occupied by one of the first families of Pennsylvania.

It is located in a wonderful grove of trees, which look as though they had been set out in the early days by someone who exercised a great deal of judgment as to the variety and in placing them. A winding drive of huge maples extends from the house to the country road, and scattered about the grounds, which occupy about six acres, are trees of different varieties. To the rear of the house at the foot of a gentle slope is a bubbling spring, which rises in the old fashioned stone spring house and forms a small lake, which does not freeze over in the coldest weather and is stocked with rainbow trout.

The house was planned for commodious hospitality and comfort. The rooms are large and of colonial style, having very high ceilings and a fire place in nearly every room. A large colonial doorway opens from a wide porch into a hallway through the middle of the house, and from this hallway a winding stair with a mahogany railing extends to the attic. During the Civil War a party of Confederate soldiers stopped at the house and were fed and sheltered for the night by its Northern mistress, whose daughter visited the farm last summer and told the story of some of their early experiences.

The house after being purchased by the school was slightly remodeled to meet the needs of its present use. It has been electrically lighted, has a steam heating plant, and running water. One room has been equipped as a school room and each day agricultural classes are held for the boys who work on the farm and dairy, covering the subjects of farming and stock raising, horticulture, farm machinery, types and breeds of farm animals, and dairying.

Overlooking the lake formed by the spring is a neat cottage for the dairyman, and at the second farm, purchased later, is a substantial,

The Farm

By James S. Giffen




The Barn at First Farm—The Pride and Joy

roomy brick house overlooking the s

The pride and joy of every Penns few in Cumberland County surpass in original barn had been made over a the prevailing style typical of this p dimensions are 118 feet long and 68 fe for storing hay and grain raised on threshing equipment, and the entire in the barn. The lower floor has a



Brood Sows on Pasture with Piggery in Rear, Accommodating ab

Buildings — 

Instructor in Farming



The House at Second Farm Is a Roomy Brick Structure Overlooking the State Highway Leading to Harrisburg.

of Every Pennsylvania Farmer is His Barn.

state highway leading to Harrisburg. Pennsylvania farmer is his barn, and very a size the one at the first farm. The number of years ago, and is now of part of the country. The outside diet wide. The upper floors are used the farm. The school has its own operation of threshing is carried on a corn crib, potato bin, machinery



out a Hundred Pigs for Fattening and Containing Butchering Room.

room, seed room, harness room, and capacity for eight head of horses.

The box stalls for cows, the bull pen, calf pens, and a dozen stanchions for young heifers are in the corner of the barn and adjoin the main dairy section, which extends at right angle from the barn. It is a model, sanitary dairy barn equipped with all modern appliances, having windows on both sides, holding two rows of cows with their heads facing a center aisle. It has cement floors with gutters, iron stanchions, and is fitted up with a litter carrier and a feeding car. The capacity is 48 cows.

The creamery is supplied with modern facilities for caring for the milk and churning. A large part of the whole milk is conveyed directly to the school without separating, but some of it is put through the separator and the cream churned. The separator and the churn are operated by an electric motor. The adjoining room is fitted up with an upright steam boiler for washing and sterilizing the milking utensils. There are two silos adjoining the feed room of the barn; one is 19 feet in diameter and 30 feet high, and the other is 14 feet in diameter and 36 feet high. Their combined capacity is about 300 tons.

The boys who work on the dairy stay all night at the farm house and get their supper and breakfast, while the boys who work on the farm get their dinners only.

The piggery is located on a well-drained piece of ground surrounded by lots for forage crops. It will hold twenty-one brood sows during the breeding season, but during the winter about one hundred are accommodated for fattening. The butchering room adjoins the hog house, and is fitted up to kill either hogs or cattle.

The second farm has a good-sized barn and other buildings and accommodates the horses used on it. It also serves as an overflow for hogs and young stock, although most of the space is utilized for storing machinery, grain, and hay.

A Striking Germination Test

By C. R. Snyder,
Instructor in Agriculture



THE SAWDUST GERMINATION BOX, SHOWING RESULTS OF THE TEST.



THE advantages of selecting the seed corn and properly caring for it was clearly demonstrated here at the school in a recent test.

Last fall, before we had the early frosts, the Senior boys, under the direction of Miss Robertson, went into the field and made a field selection of seed corn. Each was supplied with a corn sack and selected only the best ears from the best stalks. They dried it by

means of the double string method and stored it for a short time on the porch of the farmhouse and then removed it to the attic, where it was until the test was made.

However, all of the seed corn was not selected at this time, and before we could get out in the field again the early frost caught it, and thus we suffered the same fate as many other farmers; nevertheless we gathered some corn from the stalks, but a great amount was selected at husk-

ing time. This latter corn, instead of being dried and stored as the field selected corn, was placed over the corn crib on a pile.

In the accompanying picture and table the results can easily be seen. The samples tested represent two varieties, "Leaming" and "One Hundred Day Bristol." Ears 1 to 50 are "Leaming" and were selected at husking time; ears 51 to 79 are "One Hundred Day Bristol" and were field selected; and ears 80 to 100 are "Leaming" and selected at the same time and on the same manner as the "One Hundred Day Bristol." Of the corn selected at husking time and stored above the corn crib, 10 ears showed a total germination of 100 per cent, 4 ears showed a total germination of 83 per cent, 8 ears showed a total germination of 66 per cent, 2 ears showed a total germination of 50 per cent, 3 ears showed a total germination of 33 per cent, 6 ears showed a total germination of 16 per cent, and 17 ears showed a total germination of 0 per cent, thus having a general average of 43 per cent.

Of the corn selected in the field, 50 ears showed a total germination of 100 per cent. The average germination of both good and bad ears was 71.5 per cent, showing that 28.5 per cent, was gained by discarding the bad ears. This means that had we planted about an acre of this corn, only about three-fourths of it would have grown or sprouted.

Conclusions.

1. Make the selection at the right time.
2. Store the corn in the right place.
3. Dry the corn properly.
4. Get the corn before the frost gets it.
5. Make a germination test of it.

Table 1.—Results of germination of seed corn, individual ear tests of six kernels each from crop of 1917.

Time and method of storing.—Selected at husking time and stored above corn crib on a pile.

Square No.	Number of strong sprouts.	Number of weak sprouts.	Number of dead kernels.	Total per cent of germination.
1	4	2	0	100
2	3	3	0	100
3	0	0	6	0
4	2	4	0	100
5	0	1	5	16
6	2	0	4	33
7	0	2	4	33
8	2	2	2	66
9	0	0	6	0
10	0	0	6	0

Table 1.—Continued

Square No.	Number of strong sprouts.	Number of weak sprouts.	Number of dead kernels.	Total per cent of germination
11	0	0	6	0
12	1	3	2	66
13	5	1	0	100
14	0	0	6	0
15	2	4	0	100
16	0	0	6	0
17	2	3	1	83
18	3	3	0	100
19	0	0	6	0
20	3	3	0	100
21	5	1	0	100
22	0	0	6	0
23	0	0	6	0
24	1	0	5	16
25	3	1	2	66
26	0	0	6	0
27	1	2	3	50
28	5	0	1	83
29	0	1	5	16
30	0	1	5	16
31	4	2	0	100
32	0	0	6	0
33	0	1	5	16
34	5	1	0	100
35	1	3	2	66
36	0	0	6	0
37	0	0	6	0
38	1	3	2	66
39	0	0	6	0
40	2	2	2	66
41	0	1	5	16
42	0	2	4	33
43	0	0	6	0
44	0	0	6	0
45	1	4	1	83
46	2	1	3	50
47	3	1	2	66
48	0	0	6	0
49	1	3	2	66
50	4	1	1	86
	68	62	170	

Average per cent of test	43
Per cent of strong sprouts	22.6
Per cent of weak sprouts	20.6
Per cent of dead kernels	56.6

Table 2.—Results of germination of seed corn, individual ear tests of six kernels each from crop of 1917.

Time and method of storing.—Selected from stalks in the field and dried by the double string method in the attic.

Square No.	Number of strong sprouts.	Number of weak sprouts.	Number of dead sprouts.	Total per cent of germination
51	6	0	0	100
52	6	0	0	100
53	6	0	0	100

Table 2.—Continued

Square No.	Number of strong sprouts.	Number of weak sprouts.	Number of dead kernels.	Total per cent of germination
54	6	0	0	100
55	5	1	0	100
56	6	0	0	100
57	6	0	0	100
58	6	0	0	100
59	6	0	0	100
60	6	0	0	100
61	6	0	0	100
62	6	0	0	100
63	6	0	0	100
64	6	0	0	100
65	6	0	0	100
66	6	0	0	100
67	5	1	0	100
68	6	0	0	100
69	6	0	0	100
70	6	0	0	100
71	4	2	0	100
72	5	1	0	100
73	6	0	0	100
74	6	0	0	100
75	6	0	0	100
76	5	1	0	100
77	6	0	0	100
78	6	0	0	100
79	6	0	0	100
80	5	1	0	100
81	5	1	0	100
82	6	0	0	100
83	6	0	0	100
84	6	0	0	100
85	6	0	0	100
86	6	0	0	100
87	4	2	0	100
88	6	0	0	100
89	5	1	0	100
90	6	0	0	100
91	6	0	0	100
92	6	0	0	100
93	6	0	0	100
94	5	1	0	100
95	6	0	0	100
96	6	0	0	100
97	6	0	0	100
98	5	1	0	100
99	6	0	0	100
100	6	0	0	100
	287	13	0	

Germination test made in the period January 1 to 7, 1918.

Average per cent of test.....	100
Per cent of stron sprouts.....	96
Per cent of weak sprouts.....	4
Per cent of dead kernels.....	0

A PERFECT ANSWER.

The following poem was handed in by a Senior in Agriculture, in answer to the question: "Why are the legumes important?"

Mr. Snyder, Agricultural Coach,
This is the answer I would broach:
Legumes of the grasses
Are important to the masses,
For 'tis a palatable forage,
With its rich protein in storage.
There are common beans and soy be an-
For man and beasts' digestive means,
Also adds variety to rotation,
And fights pests with approbation.
Roots they have go way down deep,
Bringing plant food up from sleep.
They take nitrogen from the air,
So are important beyond compare.
Thus have I answered your question stated,
Hoping to be highly rated.

❖❖❖

State College Dean Gives War Program for Farmers.

"The destiny of the war rests absolutely with the American farmer." R. L. Watts, dean of the school of agriculture at the Pennsylvania State College, addressing an audience of farmers in attendance at Farmers' Week at the college, said this was the greatest challenge that has ever emanated from a Washington official to the American farmers. If the farmers of Pennsylvania are to do their part, there must be a program which will insure the maximum production of the most important food stuffs, he declared.

"The livestock industry should be promoted and encouraged. There is urgent need for all classes of livestock. The school of agriculture and experiment station through its staff of teachers, investigators and extension workers is pledged to render all possible service to the farmers of the State in developing the livestock industry.

"Cereal production and the growing of potatoes should have the closest attention. Scores of experiments at the college and many of the extension projects have a vital relation to the production of larger and better general farm crops.

"Tractors must help to solve the farm labor problem. The college is equipped to give special instructions to all residents of the state relating to the use of tractors, motors, trucks and other labor-saving machinery.

"The increased production of fruits and vegetables, especially peas and beans, and the more perfect control of destructive insects and diseases is also important."

FOOD CONSERVATION.

By Marcia D. Lovett.

Perhaps the one phase of Domestic Science which interests us the most at the present time is the study of food conservation. If America is to win the war we must do all in our power to conserve the supply of wheat, sugar, meat, fats, and milk so that we can help to feed our Allies abroad, and also continue to be properly nourished here at home.

In place of the first article, wheat, we can substitute various foods, either wholly or in part; such as rye, corn, bran, buckwheat, barley, oatmeal, potatoes, rice, and hominy. By so doing we shall release a vast amount of wheat which can be sent to our army abroad and to the starving people of France. It is easy for us to use other grains, for we are already acquainted with their use, but it is scarcely fair to ask our Allies, who have suffered the hardships of war for over three years, to experiment with new foods.

At the present time Americans eat more sugar than the people of any other country. It is estimated that we consume four ounces per capita each day, while the average amount in other countries is two ounces, and at the present time the people of Europe are using one ounce a day, or less. We can easily reduce the present rate of consumption of sugar and can use more sirup, molasses, honey, and if we are fortunate enough to possess them, preserves or jellies. If everyone would save one ounce of sugar a day we should have at the end of one year an additional 1,185,000 tons to send to our allies.

The Food Administration has asked us to use sparingly beef, pork, and mutton, because they can be sent abroad without great danger of loss from spoiling. In their place we can eat beans, peas, cheese, eggs, fish, poultry, and milk. Beef forms one of the mainstays for the soldiers in the trenches. Let us do our share by saving at least an ounce a day and seeing that we utilize every scrap of meat which we purchase.

Fats are said to be the most precious thing in this war. We must save them, not only to supply energy to our soldiers and our Allies, but also to supply our ammunition factories with glycerin, which is derived from fats, and which is one of the chief things used in making modern explosives.

In place of our common fats use cottonseed, corn, olive, and peanut oil for cooking. Use butter and butterine on the table but use them moderately. Save all the drippings, trim the meat which you buy and melt the fat. Don't put even a small scrap into the garbage pail.

We have not been asked to do without milk but rather to use it so long as we do not waste any. One quart of milk has more fuel value than one-half pound of good beefsteak or eight eggs. It is an absolute necessity for growing children and should be given to them freely. When we use milk in the diet we need very little, if any, meat and fats. The surplus milk supply of the United States is evaporated or condensed and much is sent to Europe.

Let us then select our foods wisely, having especially in mind those which are needed by our country, and refrain from using large amounts of them. Let us utilize what we purchase to the best of our ability. The Government does not ask much of us, but by doing that much cheerfully, we can feel that we have a real share in helping to win the war.

POULTRY.

By Cora LaBlanc, Senior.

In previous years the poultry industry of our country had been somewhat neglected. According to the last farm census, one out of every six farms reported no egg production. However, in spite of this the poultry industry is of great importance. At the present time it looms up before us as a vast industry, because by raising more chickens on the farms we can release a great deal of meat for the Allies. The hen must take her place in the fight for democracy.

To be a successful poultry man one must acquire considerable knowledge of the business. He must consider three factors: good housing, proper feeding, and proper care.

The coop should be built so that it is in a good location, preferably facing the south. It should be at a convenient place and should be comfortable in every respect; should have plenty of sunlight and be well ventilated. The coop should at all times be kept clean.

An egg contains 75 per cent water, 15 per cent protein, 6 per cent fat, and 4 per cent lime, hence

plenty of butter milk, meat scraps, bran, alfalfa, corn, grit, oyster shells, and various other foods and waste materials should be given to the chickens, if one expects a large egg production.

The chickens must be kept free from vermin. The most common enemies of the chicken are red mites and lice. To prevent these parasites from increasing various remedies may be used; cleanliness, insect powders, lard, kerosene emulsion: gasoline, three parts, to one part of carbolic acid with enough land plaster to absorb the liquid has proven to be a good powder to use.

About 90 per cent of the eggs come from the farms of the Central States. The money value of the poultry industry would be almost enough to build two Panama canals.

THE SCHOOL ORCHARD.

By Benjamin Hildebrand, Second Year Vocational.

The school orchard was planted two years ago and was planted for the purpose of giving us an abundance of good fruit.

It consists of about ten acres of sloping land, and in it are planted apple trees, cherries, pears, plums and peaches.

The apple section includes several varieties, among which the most important are the Baldwin, known for its good eating and keeping qualities, the Rhode Island Greening and Maiden Blush, both noted for making good apple sauce. The King, York Imperial, Red Astrachan, Rome Beauty, Smoke-house, and Winter Banana are the other kinds planted and we hope that in a few years these trees will give us all the apples we need.

We have but one kind of cherries planted and that is the Montmorency, a sour cherry. I think almost every one likes canned cherries and a dish of them tastes mighty good during the winter.

The varieties of pears include the Kieffer, Seckel, and Bartlett. This fruit, as all know, is rather delicious when fresh and even if canned or pickled for winter use, they make one's mouth water.

The Burbank, Niagara, and Abundance are the kinds of plums in the orchard. All of these are good varieties, especially the Abundance, which, if it bears according to its name, will give us a good supply of fruit.

Of course, a school orchard cannot afford to omit peaches and of these we have about 200 trees. In two or three years, these trees should have at least two bushels per tree, thus giving us about 400 bushels of good juicy peaches.

With proper care and attention our orchard should yield a large amount of fruit for us, and we are trying to give it every chance to develop into a large, heavy-bearing orchard.

At the present time, however, this orchard is not bringing any returns in fruit, but it is in other crops. The land between the trees has been used for potatoes, and we now have rye sown in the orchard, and we will continue to cultivate the orchard in this manner until the trees are too large and then intend to use another method of cultivating the trees. Next month, we will begin to prune the orchard.

One of the most difficult things for the boys here at school, and in fact at all other places, is for them to pass an orchard of nice red fruit without disturbing it. Perhaps most of us remember that that was man's first sin; he ate of the forbidden fruit that looked so good to him away back in the Garden of Eden. He could not resist the temptation, but I hope that the boys here at school will have sufficient resisting power so that they will leave the fruit alone until we all get a chance at it in the dining room.

A HAPPY HOME.

By Ida Rose Clarke, Senior.

The very first thing to make a home happy is mother," for what is a home without her? The mother of the home is like the manager of the corporation, and must know how to manage things, so that her home will be a home and not merely a house. In the various parts of the country schools have sprung up, teaching the young girls of this age how they can have happy homes. Carlisle is one of the many vocational schools along this line, and every year her graduates are being sent to all four corners of the continent to be examples of home builders.

Many, many homes now-days are broken up merely because the mistress didn't know how to make them happy and enjoyable. The young girl of to day is going to be an ideal mother and home maker because she is learning not only the principles of cooking, but also the general care of the home and family. Many things are said about the city and country homes, but one is as enjoyable as the other if the mistress knows her duties. The manager of the home must be thrifty, economical, and clean, and if she is the family ties will be made stronger and she herself will be happier because of the prevailing spirit of "Home, Sweet Home."

The School Dairy

By *Jacob L. Wilson*

Dairy Instructor

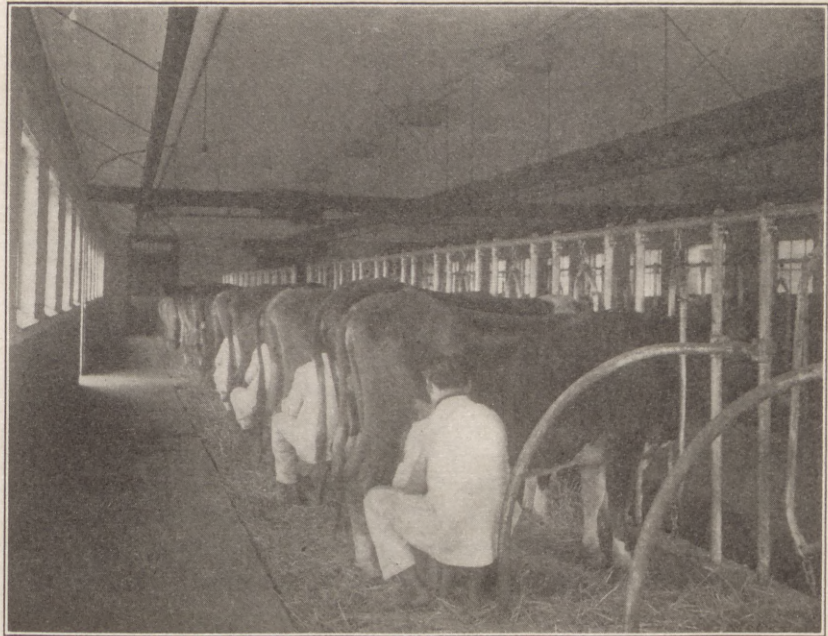
ONE of the most common diseases of the bovine world is tuberculosis. Some years ago it was estimated that no less than 10 per cent of the dairy cattle in the United States were affected with it. The annual loss from this source was over \$14,000,000. During the years of 1914 and 1915 the Carlisle herd was nearly wiped out by the ravages of this disease. Forty cows in all reacted to the tuberculin test and were slaughtered. The authorities then determined that this school should have a tuberculin-free herd.

After all necessary precautions had been taken to protect the remaining cattle from this disease, Mr. Marks, then teacher of agriculture, was sent to Wisconsin to select a carload of heavy milking, high-grade Holsteins. He selected twenty-one excellent young cows.

These twenty-one cows, together with a few of the old herd and heifers brought from the Second Farm, comprise the milking part of the present herd, or thirty-seven in number. So you see we have a very young herd, the majority of which have not yet had a chance to show their real value as milk producers. To fill any vacancies that may result from culling we have twelve yearlings and four two-year-old heifers growing after. At the head of the herd stands King Pancha Pontiac, a bull of excellent merits. He is now four years old.

The work at the dairy is done entirely by pre-vocational boys, one having charge of the feeding, another the creamery, and five others doing all of the milking. Many of the boys become quite

proficient in these branches of the work. The boys soon learn how to feed the cows so as to obtain the best results. While in the creamery they are taught how to handle milk in a sanitary way, how to operate the cream separator, and to prepare the cream for churning. They are then taught to operate the churn and handle the butter in the most simple and sanitary way. Many people are of the opinion that anyone can be a good milker. This is not true, as an indifferent fellow is no better at milking than in any other line of work. However, most of the boys become



Interior of the Dairy Barn—Most of the Boys Become Careful, Clean, and Dry-hand Milkers.

careful, clean, and dry-hand milkers. All of the milk and its products are sent to the dining hall, hospital, and domestic science department for consumption. The greater part of it is used in whole form. The balance is separated, the skim-milk being used in cooking and the cream made into butter. The supply of milk will increase with the age of the herd, and a few more years should find the Carlisle Indian School with a high-producing dairy.

OUR GREENHOUSE AND ITS WORK

By Harry Kohpay, Senior.

BACK of the Academic Building in the extreme southwest corner of the campus, you will find our greenhouse. Its location is an ideal one, because of its proximity to the gardens, its nearness to the coal sheds, and it is situated in a place where the light conditions are very good.

The building is really a combination of two distinct types of greenhouses—the even span kind and the uneven span type. The former is about 75 feet long and 20 feet wide, whereas the latter is about 28 by 36 feet. Of course, there is also a work room connected with the building.

The frame work of the house is largely iron and wood. The floors, with the exception of the work room, are made of cement. The building has ample provision for ventilation, the ventilators being placed on either side of the ridge, and are so arranged that long areas of ventilators may be operated quickly and easily. Some of the benches are supplied with bottom heat and others are not. Of course we have solid earth beds for plants that require a bed of this kind. The benches are about three feet above the floor, three feet wide and six inches deep.

The house is heated by a hot water system. One room is kept at a temperature of 65 to 75 degrees, and the other varies from 50 to 65 degrees. Our greenhouse has not been only a benefit to us, but it also gives us a great deal of pleasure. During the winter months it is always filled with flowering plants and ferns and at the approach of spring we start our vegetables

in it. These plants, after they have attained a growth of a few inches, are transplanted into pots and thus prepared for garden planting. When crowded for space in the greenhouse, we use the hot-beds and cold frames for similar work. In addition to starting our vegetables in

the greenhouse, we also start some of our plants used for decorating the campus.

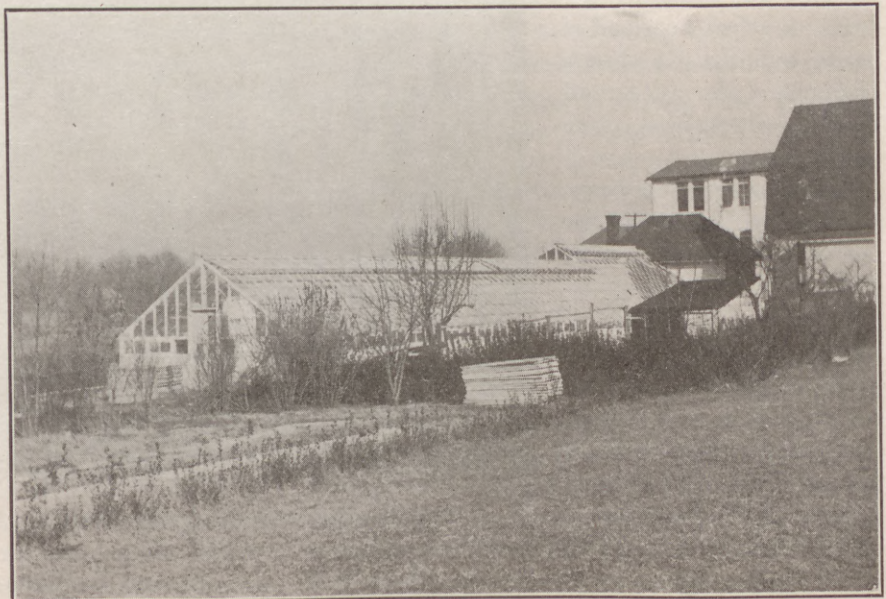
At no time of the year is the greenhouse vacant, even during the summer months it is filled to its capacity. We as students, feel very glad that we are supplied with the greenhouse we have.

WHEAT.

By Andrew Cuellar, Senior.

As far back as history goes wheat has been cultivated throughout the civilized world. Its chief use is for making bread, as was its use at the time the first books of the Bible were written. Since wheat is one of our chief grain crops; which is used as food for man, the wheat raising proposition becomes very important.

Although wheat is grown successfully in some of the higher altitudes at the equator and within two hundred miles of the Arctic Circle, it does best in a temperate climate where the rainfall is not less than twenty inches and is distributed evenly throughout the growing season, and where the season is sufficiently long to allow from 100



The Greenhouse—During Winter It Is Filled with Flowering Plants and in Spring Garden Plants are Started in It.

to 125 days of good growing season free from frost.

Wheat is divided into several classes, but as only four of these classes are of importance they will be the only ones mentioned.

In the first class are found all of the common

bread-wheats including the hard and soft winter, fife, and bluestem. The second class is the durum wheat, and is marked by its resistance to drouth and by the hardness of the grain. Although there are many varieties, few are especially adapted to this country. The third class is known as club wheat. The wheat of this class have short, compact heads, and the grain is very soft. They are grown chiefly along the Pacific coast. The fourth class of wheat is known as emmer and is grown only to a limited extent in this country. This differs from the common wheat in that the hull remains with the kernel when it is threshed, and the stems are pithy instead of hollow. From an economic standpoint, emmer is best compared with barley or oats, as it is grown only in this country for feed. It, like the durum, is better adapted to dry land conditions than common wheat, and is important where the rainfall is limited.

Of all the wheat grown in the United States, from 60 to 70 per cent is winter wheat; a large portion being of the Turkey Red variety, which is the standard hard winter wheat. The hard winter wheat is grown chiefly in Kansas and Nebraska; the soft winter wheat is grown east of the Mississippi, of which variety the Fultz seems to have the greatest favor. Kansas, Indiana, Nebraska, Illinois, Ohio, Missouri, Pennsylvania, Oklahoma, and Texas are the states in which over 60 per cent of the winter wheat is produced.

Minnesota and the Dakotas produce about 70 per cent of the spring wheat of the United States, a very large portion of which is either of the fife or bluestem type. There are a number of varieties of these two types, but in each type the varieties are so much alike that it is almost impossible to distinguish any difference. They are both standard hard spring wheats. In some sections, one kind is preferred, while elsewhere others seem to be more satisfactory. The main differences are in the chaff and habit of shattering. Bluestem has hairy chaff, while fife is smooth; bluestem is a little more inclined to shatter when mature than the fife.

According to the Bureau of Statistics of the United States Department of Agriculture, in its report for 1910, the United States was second to European Russia in the production of wheat with 695,443,000 bushels. Three of the other most important countries were:—British India, France

and Austria Hungary, and the total world production was about four billion bushels.

Although the production of wheat in bushels per acre in the United States varies from 8.3 bushels to 30 bushels the average yield is only about 14.5 bushels. The average is kept down by poor methods of culture, insects, diseases, storms, and unfavorable weather conditions. The highest average value per acre of wheat is \$27.52, and the lowest \$8.80.

Wheat will grow on a very wide range of soils, and excellent crops are produced on both light and heavy soil. The type of soil does not seem to effect the crop greatly, either in quality or quantity, so long as the plant food is available.

Since grain is the chief product of the wheat crop, it takes considerable amounts of nitrogen, phosphoric acid, and potash. Most of the soils in the wheat belt have a much larger supply of phosphorus than of phosphoric acid or nitrogen; and as the potash is used more largely in the production of straw, which, as a general rule, remains on the farm, nitrogen and phosphoric acid are first exhausted. Where livestock is kept, clover grown, and the land manured frequently, satisfactory yields of wheat may be obtained on naturally fertile soils for generations without the addition of commercial fertilizers, except phosphorous. Where wheat is the main crop or where any other exhaustive crops are grown and the land is seldom, if ever, manured, it becomes necessary to add to the soil some kind of commercial fertilizer that will supply the necessary elements as they become deficient.

When the soils have become worn by long and continued cropping, commercial fertilizers are usually applied for each crop. The kind and amount of fertilizers most profitable to apply can be determined only by careful trials in each locality and on each type of soil.

One of the essential things in the growing of wheat is to have a well prepared seed-bed. The ground should be mellow with a firm seed-bed with sufficient loose soil on the surface to check the rapid evaporation of moisture. The better method is to plow the land where possible, although the crop is sometimes seeded on disked or stubble land. To prepare fall-plowed land for wheat in the spring, thorough disking and harrowing are necessary.

It is not reasonable to expect better grain in

the harvested crop than is sown. Consequently the seed sown should be of the best quality, free from weed seeds. On an ordinary farm there is very little time to allow careful breeding and selection of grain as is practiced by careful plant breeders; but it is practical to select a small proportion of the best grain by running a considerable amount of it through a common fanning mill and in this way selecting the heaviest and best kernels.

Seed wheat cleaned and graded and then treated for smut is good seed to sow. The most common method of treatment is to moisten the grain with a solution made by mixing 1 pint of 4 per cent formaline with 45 gallons of water.

In sowing wheat better results are usually obtained by sowing with the drill than by sowing broadcast. The drill covers all the kernels, which is not possible with a broadcast seeder, and all the seeds are placed at a uniform depth. When sown with a broadcast seeder a portion is left on top where, under ordinary conditions, it will not grow and is readily picked up by birds.

The time for sowing winter wheat varies with the locality. It is desirable to sow it early enough so that considerable root growth can be made before cold weather. In the north, winter wheat is generally sown in September, but in the south it may be sown later. Spring wheat, as a rule, does better when sown early. It will germinate at a comparatively low temperature, and a crop of winter wheat is very seldom damaged by cold weather. When wheat is sown early, the cool weather causes the development of a heavy root system and induces stooling; while if sown late, the stems shoot up so quickly that there is little chance for stooling. Other reasons for sowing early are to avoid as much as possible the attacks of insects and diseases.

In the west where there are vast areas of wheat, and the weather is such that it can be done, the grain is harvested by a machine which cuts and threshes the grain in one operation. If cut with an ordinary binder it should be well shocked to admit plenty of air so as to prevent injury from the weather, thus retaining the bright color of the kernels.

Much of the wheat grown in the United States is stacked before it is threshed. Stacks are generally made by laying the bundles horizontally

in tiers, beginning from the outside, the inner tiers lapping over the next outer one, thus holding the stack together. The stack is generally built up quite level for the first 6 to 10 feet, then gradually brought to a point, forming a cone.

Threshing may well be done either from the stack or shock as desired, although threshing from the shock is cheaper and is more desirable if one can get a machine at the proper time so that the work may be done when the grain is in condition. The difference in cost is so little that it usually pays to stack the grain as soon as it is dry enough than run chances of injury to the grain from bad weather while waiting for a machine. When stacked, wheat goes through what is called a sweating process; that is, it warms up slightly, becomes moist and the straw becomes tough and remains so for 2 or 3 weeks, which process is believed by some to give it a slightly better color.

Market the crop soon after it is threshed, although some occasionally hold their wheat for several months with a view of getting better prices, but as a rule the practice does not prove profitable. The chief losses are from shrinkage and damage by mice, etc.

The cost of producing wheat varies with the different sections of the country, the rental value of the land, the price of labor, and the methods employed. It was reported that the average cost of producing an acre of wheat in the United States in 1909 was \$11.15, as the average yield that year was 17.2 bushels and the cost of production was 66 cents a bushel, leaving a return of 30 cents a bushel, or \$5.33 an acre.

CORN.

By George Cushing, Senior.

Since the opening of the school term we have had many helpful lectures about corn. The lecture of January 14, 1918, given by Mr. Hayne, a representative of the International Harvester Company, created much enthusiasm among the future farmers here at school. In his lecture, he mentioned that butter consisted chiefly of air and water, because so much of the material or food consumed in making it is derived from these two places. This may be applied to our native

plant, the corn. With liquid taken from the soil by the water and carbon taken from the air by the blades, the plant is thus enabled to grow.

Indian corn is undoubtedly an American product, being native to American soil. The ways of preparing it for human food are very numerous, and many of them, like the cereal itself, are of Indian origin.

Since the early days when cultivation was very crude, the plant has been improved so that it is now adapted to almost any soil and climate in the United States.

Probably the worst enemy of corn is the wind, which lays it low. It therefore has been obliged to develop certain forms of stalk, leaf, and roots. The stalk is a strong cylinder-like plant with a pithy center, strengthened at short intervals by hard nodes or joints. It is elastic and withstands some bending.

The structure of the leaf is especially adapted to escape injury from the wind. The strong veins are parallel and a strong flexible midrib at the center.

The true roots of the plant penetrate the soil rather deeply, but are hardly able to hold firm a stalk so slender and tall as that of the corn when there is a strong wind, hence all about the base of the plant are certain roots called base-roots, the purpose of which is to hold the stalk erect.

In the principal corn growing states, corn is planted in hills three and one-half feet apart each way, thus giving about 3,550 hills per acre. In most sections three stalks to the hill is considered a perfect stand.

The average production per acre in the United States is a little over 26 bushels. In the New England states, with their poor soil and short growing season, the average yield per acre is less than in any other part of the country.

Corn is cultivated often enough to keep down the weeds and to maintain a loose soil mulch until the corn has attained a good growth. After rains the surface soil often forms a crust which must be broken and the mulch restored or evaporation will soon rob the soil of its moisture. Raising corn may be likened to forming steam in an engine; when too much water is there, it lowers the temperature and too little water is dangerous.

Experiments have shown that corn planted two or three inches deep has given the best re-

sults. Corn planted at that depth has given the greatest yield of fodder. However, when the soil is cold and wet, the corn is planted more shallow, but when the ground is warm and dry, it is advisable to plant at the above depth.

The general method of harvesting corn, planted in rows, has been to cut by hand and place in shocks of medium size to allow the fodder to cure. Before cold weather begins, it is then husked and taken to the barn. Where corn is grown on a large scale, the corn binder and other modern implements are used in harvesting the crop.

Corn is also one of our best silage crops. For this purpose, a variety with heavy foliage, stalks of medium size, and good ears is the most desirable. Silage is considered better than cured fodder, as field curing decreases the digestibility of some substances, especially the fiber; however, some farmers are now making silage out of the cured fodder.

Part of our study in the early fall was the selection of seed corn. We were given the following directions for selecting the seed: An ear of cylindrical shape, well rounded at each end affords the largest percentage of grains per cob, as well as kernels of the most uniform shape. The cob should be neither too large nor too small, and should possess the property of drying well and quickly; it should have a bright healthy color. The kernels should fit compactly throughout their full length on both sides and edges and should be uniform in shape and length. The ears should be selected from good healthy stalks.

We observed the directions in selecting the corn and made two different selections, one from the field and the other at husking time. The results of the germination test are shown in another article in this issue.

Corn covers a large field as to its uses. Not only is it a great stock food, but used for a human food as well. Where corn is grown extensively we almost always find a great deal of attention paid to live stock, and this latter industry is one of the foundations of successful farming.

Our Stock of Gold.

The gold monetary stock (coin and bullion used as money) in the United States on November 1, 1917, is estimated in Secretary McAdoo's annual report at \$3,041,500,000. The increase in the past 10 months has been \$174,500,000. In five years the portion of the world's gold monetary stock held by the United States has increased from approximately one-fifth to more than one-third.

The Carlisle Arrow and Red Man

Issued every Friday from Carlisle Indian Press
during school year (about ten months).

SUBSCRIPTION, ONE DOLLAR YEARLY
IN ADVANCE.

Address communications to the Superintendent,
U. S. Indian School, Carlisle, Pa.

Second-class matter—so entered at the post-
office at Carlisle, September 2, 1904.

THIS YEAR.

The coming farming season will be the most important within the memory of men.

The world war has demanded much of the youthful strength of the world upon its battle lines. The needs of the munition and supply factories must be met from the remainder.

While the consumption of agricultural produce has been reduced but slightly, the world's power of production has been diminished because of the drain of the armies and munition factories upon the supply of labor and less acreage can be placed under cultivation abroad.

Our own country though embarrassed by a shortage of labor comes into the conflict fresh and with resources which, if wisely used, will meet our own needs and strengthen and save our Allies in our strife against the common enemy.

It is the patriotic duty, therefore, of every American engaged in agricultural pursuits to do his part to insure the largest crops and to bring about the greatest increase in live stock.

Success in agriculture as well as in other vocations requires careful preparation, and such preparation includes early preparation.

Have those of us who are not with the army planned to the best of our ability to make each acre under our control produce the largest yield? Have you planned to raise all the wheat and corn that our lands will permit? Are we going to raise all of the beef for which we have feed? Are we going to raise more hogs? Will we raise plenty of potatoes? Are we going to have a better and bigger garden and have we arranged to can and dry more garden produce than ever this year?

If we have not planned carefully and intelligently and if we do not strive to do our very best to raise these better

crops, we are not doing our part to lessen the necessity for food conservation. We are not trying to make unnecessary more wheatless days, more meatless days and more porkless days. We are not helping the President. We are not helping our neighbors. We are not helping the men in France.

Every farm well managed, every field well cultivated, every acre well tilled will help in crushing the world imperialistic dreams of William Hohenzollern.

If we cannot be fighters on the battle-fields of Europe, let us do our part in the wheat and corn fields of this country.

If we cannot be good soldiers, let us be good farmers.

THE SUNDAY EVENING SERVICE.

By Clarence Welch.

The meeting was opened by a selection by the school band. The choir sang, "We're Marching to the Land of Love". Mr. Francis then introduced Mr. Levi Levering, Carlisle '91. Mr. Levering made a short address in which he reviewed his own experiences while at Carlisle. He admonished the students to be obedient to the rules of the school, to be respectful to their teachers, attentive to their studies, and loyal to their school.

A duet entitled, "Choosing My Path," was sung by Ida Clarke and Lucy Greene.

Mr. Francis talked to us in his fatherly way as he always does. He took for his subject, "Partnership," which was the continuation of a former talk on the same subject. Following are some of the thoughts that remain with us:

Don't be a gossip.

Be careful of the way you use your mouth.

A good reputation is an invaluable thing and cannot be made in five minutes.

We are a world to ourselves, so we should be careful about what we do and say. As a small pebble causes waves which will eventually spread all over a pool of water, so will an unkind word said of a fellow student spread through the whole school.

The worst thing that anyone can do is to gossip about his or her friends. That is the way to lose all your friends. So I advise you girls and boys to be more careful about what you have to say.

I was very much pleased to learn from some of the teachers of the gallant way in which a number of the boys assisted them on the way to and from school during the time when the walks were in a very slippery condition.

Junior Girls Enjoy Their Own Cooking.

The Junior girls were given the privilege of cooking a dinner for themselves last Monday afternoon. The menu consisted of the following: cream pea soup, stuffed baked potatoes, salmon croquets, baking powder biscuits, tea and orange sherbet. The best waitress proved to be Mary Hill.

INDIANS PLAY STATE COLLEGE.

In what several spectators termed the most interesting game since the Syracuse game of last year, the Penn State basketball team defeated the Carlisle Indians on January 26. The final score 48 to 27 just about shows the relative strength of the two teams, but it fails to indicate the sensational floor work and passing of both teams.

The game was one of the fastest and cleanest that has been seen here for some time. The Indians played apparently for the sheer delight of playing and while they fought desperately to win, the game was absolutely free from any signs of roughness. The fouls called on the visitors were for technical violations of the rules.

While the work of Blakeslee stood out pre-eminently for State, it was hardly as sensational as that of Leroy, the big Indian center. He scored four times from the floor, several of his shots being from difficult angles, while he made good on nine out of twelve tries from the foul line.

In the second half, the Indians seemed to fathom State's defense to a certain extent, and the clever work by Metoxen and Leroy enabled them to play the varsity almost to a standstill.—*Penn State Collegian*.

A FAREWELL PARTY.

By Eusevia Vargas.

Tuesday evening a little party was held in the reception room at Girls' Quarters in honor of Irene Barnes, who left early Friday morning for Philadelphia. The guests were: Messers French, Holstein, Lassa, Medreno, and Paul Harwood. The entertainers were: Mary Largen, Amy Atsey, Julia Heaney, and Eusevia Vargas. Delightful refreshments, consisting of ice cream and cake, were served in the little dining room. Everyone reported an enjoyable time. Mrs. Ewing acted as chaperon.

A Dinner Party.

An informal dinner was served in the pretty dining room at Girls' Quarters Saturday afternoon. The hostesses were Lucile Albert, Eva Caswell, Mary Hill, and Clara Shunion.

The guests were Miss Greynolds, Messrs. Tibbetts, Poodry, Coleman, Brophy, and Large. The menu consisted of tomato soup, wafers, fried chicken, mashed potatoes, glazed sweet potatoes, creamed peas, gravy, biscuits, butter, jelly, olives, coffee, fruit cocktail, maple cake, and salted nuts.

After dinner the guests retired to the reception room where a pleasant hour was spent in social intercourse and in singing.

Ex-Student Speaks to Pupils.

Mr. Levi Levering gave a short talk to us on Sunday evening in the auditorium. He emphasized the necessity for working together in order to help the Indian race. Among the things he said were:

Remain here to prepare yourselves for the future. Take advantage of every opportunity offered you. I myself am a former student of Carlisle. As I roam about the

world I think of my happy school days spent right here at Carlisle, and I tell you I don't regret having been here. I have always been glad that I came to this great institution.

They laugh at the Carlisle graduates if they don't try to make good after leaving the school.

I shall never forget the superintendent nor the teachers who taught me from 1882 to 1891. They shall forever remain in my memory.

I spent many pleasant days at Carlisle, because I obeyed the rules. Obey the rules and after you leave you will recall without regret the pleasant days spent here.

GENERAL NEWS NOTES.

The Junior girls are anxiously waiting to see their chemistry marks.

If any one wished to know just where the ground hog lives, ask Minda Hill.

A delicious marble cake made by Lucy Ashland for Lee Leroy lost its way and went to John Leroy instead.

Mr. Shambaugh, the instructor in blacksmithing, will have been at Carlisle ten years on the 18th of this month.

Rooms 14 and 12 were so cold Monday that both the Seniors and the Juniors moved to downstairs rooms for their recitations.

Lyman Bruner returned to the school Saturday afternoon and brought with him a former Carlisle student, Earnest Anderson.

The girls living at the Model Home Cottage for the month of February are: Frances Leslie, Rose Skahah, Ella Cuellar, and Bess Hall.

Everybody was delighted to find out the identity of the "mysterious stranger" who so generously sent to each student a Christmas present of six handkerchiefs.

Last Saturday evening the Junior girls played a game of basketball against the girls of the even division. The final result of this encounter was 5 to 0 in favor of the Junior girls.

The films not arriving in time Saturday, the students went to the gymnasium instead. Two basketball games were played and there was a tug-of-war between the small boys and the small girls.

Last Monday Mr. Francis introduced to us the "mysterious stranger" as Mr. Douie of Lebanon, Pa. Mr. Douie made speeches in several of the classrooms which the teachers and students greatly enjoyed.

The Haskell Leader of January 25th announces the marriage on New Year's Day of Mr. Leo Roque and Miss Julia Smith. Both are employees at the Mount Pleasant School, Mr. Roque in the superintendent's office and Mrs. Roque as nurse.

Mrs. Francis, as president of the Cumberland County Conservation Board, is in Philadelphia attending meetings of the State Board. Many prominent speakers will be in attendance. From Philadelphia, Mrs. Francis will go to Washington, D. C., where she will join Mr. Francis, who is in Washington on business.

DOMESTIC ART DEPARTMENT.

Spring Term—January, February, March, April,
and May, 1918.

Third and Fourth Year Vocational.

All Classes (Teacher, Mrs. Canfield):

1. Drafting and designing.
2. Coat making.
3. Construction of simple hat.
4. Décoration for woolen dresses.
5. Dress making.
6. Infant dresses.
7. Talks on children's clothes.
8. Bobbin lace (Saturday a. m.).
9. Embroidery (Saturday a. m.).
10. Crocheting (Saturday a. m.).
11. Knitting (Saturday a. m.).

Lectures each week on the following subjects:

12. Home making.
 13. Cotton culture in United States.
 14. Textiles.
 15. Making cloth
 19. Cotton.
 17. Woolen.
 18. Linen.
 19. Silk.
- and different subjects.
20. Graduating dresses.

Outline of Class Work.

First-year Vocational Class (Teacher, Miss Searight).

1. Practical talks on dress making.
2. Practice in taking measurements.
3. How to obtain patterns.
4. How to interpret commercial patterns.
5. The best way to lay pattern on material and cutting out.
6. Making pockets.
7. Button holes.
8. Sewing on buttons.
9. Hooks and eyes.
10. Simple shirt waist.
11. Tatting (Saturday (a. m.))
12. Knitting (Saturday (a. m.))

Pre-Vocational Classes (Teacher, Mrs. Kirk).

1. Practical talk on neatness and order.
2. Use and value of implements.
3. Origin, manufacture, and use of cotton, wool, and linen fabrics.

Instruction in making—

4. Night shirts.
5. Nurse aprons.
6. Table covers.
7. Gymnasium suits.
8. Corset covers.
9. Kitchen aprons.
10. Repairing—Friday and Saturday of each week.

Death of Carlisle Graduate, Class 1906.

Supt. E. W. Estep of Shiprock, New Mexico, sent Mr. Francis the following notice: Mrs. Christine Childs Burns

died at Crow Agency, Montana, on December 7. She was a Carlisle graduate, being a member Class 1906. She took training at a Philadelphia hospital where she met and married John Burns. She was matron at the Crow hospital for more than three years. She leaves a husband and two children to mourn her loss, the younger being but two days old when she passed away.

Interesting Letter from a Former Employee.

Mrs. Denny has received the following interesting letter from Miss Frances G. Paull, who taught at Carlisle for many years. Miss Paull says:

Dear Friends:—Please pardon my delay in sending you my subscription for the papers I so thoroughly enjoy. Every issue is of interest, if most of the pupils and many of the employees are strangers to me. They are living over the happy experiences of the former inhabitants and their doings serve to recall ours, with peculiar variations. The very pretty picture of the skating pond carries me back so really that I imagine my muscles will be sore tomorrow! And the present girls are no more careless than were they of my time, for many a pair of overshoes have I seen tossed, by one of Uncle Sam's helpers, on the porch of the Girls' Quarters!

May you all, superintendent, employees, pupils, live such happy lives in that favored school you will carry with you, through life, the memories which will make Carlisle as dear to you as it is to me.

GENERAL NEWS NOTES.

The debate which took place in the Y. M. C. A. hall last Saturday between the masons and the printers was very exciting. The judges decided in favor of the masons.

Last Sunday evening at assembly Mr. Duran called the attention of the boys to the fact that many of them do not walk as erect as they should. He asked them to correct this habit.

Cora LaBlanc, one of our senior girls, deserves honorable mention for her faithful service to the Red Cross work. She has knitted during her spare time two sweaters, one scarf, and one pair of wristlets.

William Garrow writes from St. Regis Falls, N. Y., that he is employed in a lumber camp and that the work is not "all pie." He was sent draft papers and he found the questionnaire difficult to fill out.

A letter received from John A. Welch states that he has been in the naval hospital at Portsmouth, Virginia, for five weeks with scarlet fever. He sends his best regards to the Invincibles and to other friends.

Christopher Thunder Hawk, a former student here, died at his home, Rosebud, S. Dak., on January 6th. While handling his gun he shot himself accidentally with fatal results. Carlisle mourns his untimely death.

Uneeda Burson writes from Pensauken, N. J.: "My mind wanders back very, very often to the pleasant evenings spent in the Susan society hall. I send my very best wishes to the Susans and I hope always that they may succeed in everything they undertake to do. I certainly have a nice home and I am getting very fat."

STANDARD LITERARY SOCIETY.

By *Steven Smith, Jr.*

The Standards held their regular Friday evening meeting in Y. M. C. A. hall. The house was called to order promptly at usual hour. The meeting opened with roll call, followed by the society song. Jesse Daylight, George Swanson, Noah Twoguns, Elliot Brunner, and Albert Wall were presented for membership. The proceeding of the regular program was as follows:

Selection—Standard Band.

Declamation—Jerome Sutulka.

Essay: "The Way the World Looks to Us To-day"—Andrew Elm.

Impromptu: "Trip to Carlisle"—Nelson Gage.

Impromptu: "Summer at Home"—Billy Bird.

Impromptu: "Coming to Carlisle"—Frank La Pointe.

Oration: "An address by Washington"—James Wheelock.

Biographical sketch of Senator Penrose of Pennsylvania—Ellis Wright.

Recitation: "Washington's Birthday"—Henry Dukes.

Vocal Duet—Ira Cloud and Taylor Edmonds.

Baritone accompaniment—Norton Tahquechi.

Selection—Standard Band.

Dabate

Resolved, That Russia should adopt a Democratic or Republican form of Government.

Affirmative—Charles Cadotte and Charles Walker.

Negative—Robert Warrington and Louis Valandra.

Judges were Hie Coleman, chairman; Emerson Metoxen, and Frank Pablo, associates.

After the judges retired Alex Washington and Jacob Herman took part in the general debate. The editor, Andrew Cuellar, made his report; also the various committies made their reports.

Our advisory member, Mr. Heagy, gave the society some helpful remarks. The visitors for the evening were Mrs. Kirk, Mr. Duran, Mr. Levering, and Messrs. Wells and MacTavish of the Invincible Society. Each vistor responded with a talk for the good of the society. Mr. Heagy favored us by playing a piano solo, "Soul of The Rose."

The judges made their decision and announced that the negative side had won the debate.

Programs for the next two weeks were read. The critic made his report. Another selection was played by the Standard Band and then the house adjourned.

GENERAL NEWS NOTES.

The girls' basketball team challenges any team to play to a final.

The pre-vocational farmers are now taking instructions on soil formation.

A number of new students and some former students arrived last week.

Sergeant Joseph F. Tarbell writes from France that he is getting along fine.

When Abbie Somers and Gertrude Pego came to Room 14 on business one day last week the senior boys insisted upon "speeches." The girls were taken by surprise but they

graciously said a few words after which they made a hasty retreat.

The senior girls each wrote a letter to Earl Wilbur to cheer him in the trenches.

Sunday, the weather permitting, most of the students attended church in town.

Captain Washington has begun rounding up Troop E in shape for competitive drill.

In a card from Hattie Tarbeli she tells of an enjoyable country home at Noble, Pa.

Miss Isabel Wheelock received a fine U.S. Army flag from Camp Meade, 319th Infantry.

Troop G are proud of their newly commissioned officers, Harold Pierce and Ned French.

Mr. Levering told us that we can make our school life happy by obeying the rules laid down for us.

Last Thursday the blacksmith boys had their monthly test. Nearly all of the papers were given good marks.

After a few months' stay at his home in Oklahoma, Lyman Bruner returned to the school Sunday, February 3rd.

When the old students come back and talk to us they always tell of the good time they had while at Carlisle.

Carlisle friends received New Year's greetings from Homer H. Lipps of the Empire National Bank, Lewiston, Idaho.

Abbie Somers teaches Sunday school at the Episcopal church when Prof. Kelly is absent. She is an enthusiastic teacher.

Through a letter it is learned that Benjamin Nightpipe is regaining his health. He wishes to be remembered to his friends.

Mrs. Wheelock is entertaining her mother, Mrs. Everman of Philadelphia, and her sister, Mrs. Dr. Craney and son Arthur.

Marjorie Logan, who is at Mt. Airy, is doing well in her studies. She wishes to be remembered to her friends at Carlisle.

Thomas Montoya writes from Cuba that he and Luke Conly are getting along nicely. They enjoy the balmy weather down there.

The duet "Choosing My Path" which was sung by Ada Clarke and Lucy Greene at the Sunday evening service was very much enjoyed.

Our new bass drum has arrived and Thomas Miles is very much pleased with it. It is larger than the old one but very much lighter.

The strange, barbaric sounds given out by the band Sunday evening were somewhat startling. "What delightful music!" said some of the senior girls.

In connection with our music lessons, Miss Dunagan read to us the story of Thaddeus who saved Arline, the daughter of Count Arnheim, from the wild beasts.

Susie Laursen was about to buy a black penholder, when she remembered that we should be patriotic and wear bright colors, so she bought a green one instead.

Alfred Wells made his debut as a saxophone player in the band last Saturday evening. His fellow musicians predict for him a great future in the musical world.

SUSAN LONGSTRETH LITERARY SOCIETY.

By Evelyn Metoxen.

Our meeting of February 1st, 1918, was called to order by the president. At roll call each member responded with a maxim or a proverb. After business discussions and reporter's notes were given, the program was carried out as follows:

Society Song.

Piano solo: "Flower Song"—Evangeline Wheelock.
Anecdotes—Martha Francis.

Vocal solo: "Lullaby"—Elizabeth Keiser.

Oration: "Set of Sun"—Grace Swamp.

Vocal duet—Elizabeth Skenandore and Gertrude Jordan.

Fable: "The Milk Maid"—Leona Bonser.

Recitation: "What I Live For"—Estella Lawe.

Piano solo: "Florine"—Elizabeth Peterson.

Story: "Who Wrote the Arabian Nights"—Madeline Peterson.

Piano solo—Amanda Williams.

Recitation: "Soldier's Dream"—Margaret Wahnetah.

Pen picture—Adele King.

Piano solo: "Light Hearts"—Virginia Jackson.

Our official visitors were Miss Cornelius and Mr. Tibbetts. Other visitors were Mr. Wheelock, Mr. Duran, Mr. McDonald and Mr. Levering. All gave helpful remarks. After the critic's report the house adjourned.

MERCER LITERARY SOCIETY.

By Elenor Houk.

The house was called to order by the president, Miss Moran. Roll was called and each member responded with a quotation. After the usual transaction of business the reporter gave her notes and the following program was rendered:

Song—Mercers.

Essay: "Opportunity"—Nettie Standingbear.

Dialogue—Minnie Thomas and Josephine Sewatis.

Funny Sayings—Elsie Bonser.

Selection—Mercer Orchestra.

Biographical sketch of Thomas Gray—Helen Kipp.

Pen Pictures—Emily Bresette.

Selection: "Fairy Moonlight"—Mercer Chorus.

Piano solo—Pauline Jimerson.

Recitation: "Hats Off"—Lizzie Antell.

Selection—Louise Kanard.

Debate

Resolved, That is it the patriotic duty of the school officials of this country to close all high schools in April of this year, in order to permit all pupils of suitable age to go out on the farms to assist the farmer.

Affirmative—Gertrude Pego and Mary Rorke.

Negative—Eliza Berrard and Agnes Daybird.

The visitors of the evening were: Miss Beach, Mr. Duran, Mr. McDonald, who had been representing his tribe at Washington, and Mr. Levering, who are both ex-students of Carlisle. They both favored us with helpful remarks. Also Mr. and Mrs. Wheelock and daughter Isabelle were present. Mrs. Wheelock gave a very enjoyable talk.

The judges gave their decision in favor of the affirmative. The critic gave her report and the house adjourned.

INVINCIBLE DEBATING SOCIETY.

By Rupert Anderson.

The evening of February 1, 1918, the president called the house to order and read a few verses from the bible. Clarence Welch led the society song, and the roll was called. Henry Beauprey, Davy Davis, Robert Patterson, and Mike Walkingstick were presented for membership. All the above names were accepted and the two latter signed our constitution.

The committee on questions presented a number of debatable questions and the society selected this one for discussion in a future meeting:

Resolved, That the navy offers better educational opportunities than the army.

The program of the evening consisted of the following numbers:

Music—Orchestra.

Declamation—Guy Elm.

Essay—Edwin Allen.

Oration—David Hill.

Song—Ned French and Adam Driver.

Select Reading—Alpheus Smith.

Selection—Orchestra.

Biographical sketch of Lincoln—William Harwood.

Some of our numbers were omitted because of our limited time.

Debate

Resolved, That voters should be required to take an educational test.

Affirmative—James Holstein and Robert Harris.

Negative—Elmer Poody and Raymond Moses.

The visitors for the evening were Miss Searight and Mr. Snyder. The latter was called upon and made a few remarks.

The judges decided in favor of the affirmative.

The critic made his report and the house adjourned.

GENERAL NEWS NOTES.

Mr. George Venevery, of Syracuse, N. Y., paid the school and his New York friends a short visit last week.

Dr. Eliot commented highly on the appearance of both the boys' and the girls' quarters, which is encouraging.

One of the most interesting numbers on the Mercer program last Friday evening was "Dinah and Bridget," a dialogue given by Josephine Sawatis and Minnie Thomas.

The Haskell Leader for January exhibits a service flag upon which are 150 stars. Four of the stars represent Carlisle graduates of Classes 14 and 15, respectively: Alvis Morrin, Frank Holmes, Kenneth Coe King, and Charles Apekaum.

"The mysterious stranger" was a visitor on the campus last Monday. Mr. Francis brought him around to see the domestic science class, which happened to be the Juniors. He and Mr. Francis sampled their marble cake and pronounced it delicious.

CALENDAR DETAILS.

To Visit Literary Societies Tonight, February 8th.*Susans*—Mr. Snyder and Mrs. Denny.*Mercers*—Mr. Tibbetts and Mrs. Kirk.*Standards*—Mr. Wilson and Miss Searight.*Invincibles*—Mr. Duran and Miss Cornelius.**To Visit Literary Societies One Week From Tonight***Susans*—Mr. Duran and Mrs. Kirk*Mercers*—Mr. Snyder and Miss Searight*Standards*—Mr. Tibbetts and Miss Cornelius*Invincibles*—Mr. Wilson and Mrs. Denny**To Inspect Dormitories Sunday, February 10th, 8.30 p. m.**

Large Boys—Miss Wilson and Mr. Blair.

Small Boys—Miss McDowell and Mr. Bradley.

Girls—Miss Robertson and Mr. Boltz.

To Chaperon Girls to Sunday School, Feb. 10th, 9 a. m.

Mr. Wheelock

Mr. Herr

Miss Robertson

Miss Snoddy.

To Chaperon Girls to Gymnasium for Religious**Instruction—Monday, 6:30 p. m.**

Mr. Kirk

Mr. Weber

Amy Smith

**TEACHERS' STUDY HOUR DETAIL FOR WEEK
BEGINNING FEBRUARY 11th**

	Large Boys	Small Boys	Girls' Quarters.
Monday	Miss Hagan Miss McDowell	Miss Wilson	Mrs. Foster Miss Robertson
Tuesday	Mr. Heagy Miss Robertson	Miss Hagan	Miss Wilson Miss McDowell
Wed'sday	Miss McDowell Miss Hagan	Mr. Heagy	*Mrs. Foster Miss Robertson Miss Wilson
Thursday	*Mr. Heagy Mrs. Foster Miss Hagan	Miss McDowell	Miss Robertson Miss Wilson

*Indicates teacher is to take vocational students to the Library.

GENERAL NEWS NOTES.

A number of the girls who have knitted for the Red Cross have been receiving words of thanks from the soldier boys who received them.

Since David Hill has been detailed to the dairy he has become quite enthusiastic over dairying especially in the art of butter making.

The juniors have written essays from the book, "Pushing to the Front," on the subject of "Good Manners." We are anxiously waiting to see our marks.

In a letter from Ella Israel we learn that she is through with finals in the Narbeth High School. Following are the subjects: English, Latin, German, Physics, and American History.

Mr. Duran gave 100 per cent to his boys on the appearance of their quarters, such being the report of inspecting the com-

mittees. Mr. Duran said that we must continue the good work and not to stop because we got 100 per cent for once.

Mr. Levi Levering, Class '91, gave the students a short address at the union meeting Sunday evening. He said that he was grateful for all the experience gained while at Carlisle. He also spoke of the good times he had when he was a student here.

The band is fast coming to the front. The selections rendered on Sunday night in the auditorium were very marked in improvement over previous appearance. This fact speaks volumes for the boys. They certainly must work, which after all is what brings success.

Flora C. Peters, class '17, writes from Pine Ridge, South Dakota, that she is lonesome for the East, not being accustomed to the plains. Among the ex-students she has met are Henry Redowl and James Mumblehead, class '11. Mr. Mumblehead is the bandmaster at Ogalala.

Sara Fowler, Carlisle '17, writes from the West Chester Normal: "I certainly like my school work. I have made so many friends (with books, too). Every night I study until ten o'clock. I am taking French, and I like it very much. My love to the dear Susans. Tell them I do not forget the happy evenings spent in Susan Hall. We have two societies here. I belong to one of them. We meet Saturday evening every other week. I believe it does not come up to the Susans."

Mr. Wheelock says that boys wonder why they receive an order sometimes to turn their instrument over to some one else. The reason is simple: You probably have had an instrument for a couple months; you are not aware that your work on it is being watched; you never come to Mr. Wheelock for instructions; you are never seen in the band room where the charts are; and the instrument is being handled by everybody in the building. This method will never enable anyone to play any kind of instrument, so it is given to some one else and you let out.

COMING EVENTS.

Saturday, February 9th—Concert by Orchestra and Glee Club, Auditorium, 7.30 p. m.

Saturday, February 9th—Basketball game, Hampton vs. Indians, at Hampton.

Thursday, February 14th—Entertainment by Maverick Club, Auditorium, 8:15 p. m., benefit of the Red Cross.

Friday, February 15th—Basketball game, State Forest Academy vs. Indians, at Mont Alto, Pa.

Saturday, February 16th—Basketball game, Albright vs. Indians, at Myerstown, Pa.

Saturday, February 16th—Merrillees Entertainers, Auditorium, 7.30 p. m.

Wednesday, February 20th—Basketball game, Gettysburg vs. Indians, Gymnasium, 8:15 p. m.

Friday, February 22nd—Patriotic Entertainment, Auditorium, 7:00 p. m.

Friday, February 22nd—Basketball game, Bucknell vs. Indians, Gymnasium, 8:15 p. m.

Saturday, February 23rd—Basketball game, Shippensburg Normal vs. Carlisle Reserves, Gymnasium, 7:00 p. m.

Saturday, February 23rd—School Sociable.

ACTIVITIES OF THE INTERIOR DEPARTMENT WAR WORK ASSOCIATION.

Under the daily, personal direction of Mrs. Franklin K. Lane, wife of the Secretary of the Interior, nearly half a thousand of the Interior Department are using every spare minute sewing, knitting, and packing things which will comfort and cheer sick and wounded American soldiers in France.

When the office day ends they hurry from all parts of official Washington to the rooms in Secretary Lane's big building where the Interior Department War Work Association is in continuous session, to turn in finished work and get material for more sweaters, sheets, towels, pajamas, stockings, slippers, and the other articles which are packed in big shipping cases, one of which has gone to Neuilly, France, every ten days. And, hereafter, the association will ship a box every week.

The Interior Department War Work Association is an auxiliary of the American Red Cross. It had its beginning almost immediately after war with Germany was declared, when the Home Club, which is a social organization of the Department with nearly a thousand members, began planning for relief work. For a time the Association met in the Home Club building, on Jackson Place and in the early days of the movement its output was distributed through the American-French Clearing House. When its activities outgrew the quarters in the Home Club the work rooms were moved to the Interior Building.

Here Mrs. Lane, surrounded by the wives and daughters of her husband's assistants, commissioners, and chiefs, manages an organized patriotism which ramifies into the far north where the Alaskan Engineering Commission is pushing a railroad to reach precious coal deposits; into isolated reservations where the people of the Indian Service are; into the arid plains where the men of the Geological Survey are working; into the depths of shafts where the Bureau of Mines' experts gather; into prairie towns where the men of the General Land Office work; into the green clad irrigation areas where the engineers of the Reclamation Service are constructing canals and ditches; into the mountains and canyons and great forests of the big trees where the rangers and fire fighters of the National Park Service climb the trails, and to the desks and offices of the Bureau of Education, the Pension Bureau, the Patent Office, and all the other branches and divisions of the Interior Department.

For the men of the service are back of the women with their money. Thousands of dollars have been pledged and paid and the enthusiasm in the good cause has been so practical in its nature that though the work is only just beyond the stage of initial organization Mrs. Lane has enough funds in hand to endow nineteen beds in the Interior Department Ward of the Washington Hospital in Neuilly.

Every bed calls for a deposit of \$600, and \$200 a year outfits it with all needed garments and linen. To raise funds for beds and to insure their maintenance, the officers and employees of the Department were asked to pledge subscriptions of ten or twenty-five cents each to be paid every month so long as the need for a hospital exists. The first letter calling for pledges went out in the latter part of last July and the responses were so quick, so spontaneous, that within a short time Mrs. Lane had the assurance that the Interior Department ward would be fully equipped and adequately maintained.

The far flung endeavors of the Association started a "drive" for hospital beds by the Alaskan Engineering Commission in September and which, before the last of the following month, resulted in cash subscriptions aggregating \$7,510.86. In the Neuilly Hospital there will be a ward, over the door of which will be a brass tablet bearing the legend "Department of the Interior" and three of the beds will be marked "Department of the Interior, Anchorage, Alaska", and two so marked for Nenana and one each for Seward, Turnagain Arm, Matanuska, Talkeetna, and three for Fairbanks. Some of the subscriptions were made by laborers who could not write their names. Other beds will be marked to designate

the bureau or Interior Department branch which "paid for" the bed.

The Makah Indians of the Neah Bay Reservation on the Pacific Coast, in Washington, sent Mrs. Lane 50 little baskets as their contribution to Red Cross work. About that time the association was considering the advisability of having a general sale of articles such as embroidery and other fancy work to be contributed by women in Washington, but when the Makah Indian baskets came they gave rise to the idea of having a sale of Indian bead work, baskets, silver work and like articles. So the Indians of the country were notified of the plan and were requested to send in what they could.

The result was a sale of Indian goods at the Home Club out of which \$1,400 was cleared and the committee decided to use that money for surgical dressings.

The women of the Interior Department in Washington gave a Thanksgiving dinner to 100 soldier boys, and after the dinner a dance and reception at the Home Club. The expenses were paid from funds secured from volunteer contributions of Interior Department employees in Washington, and after all expenses had been paid there remained \$100.00 which was turned over to the War Work association.


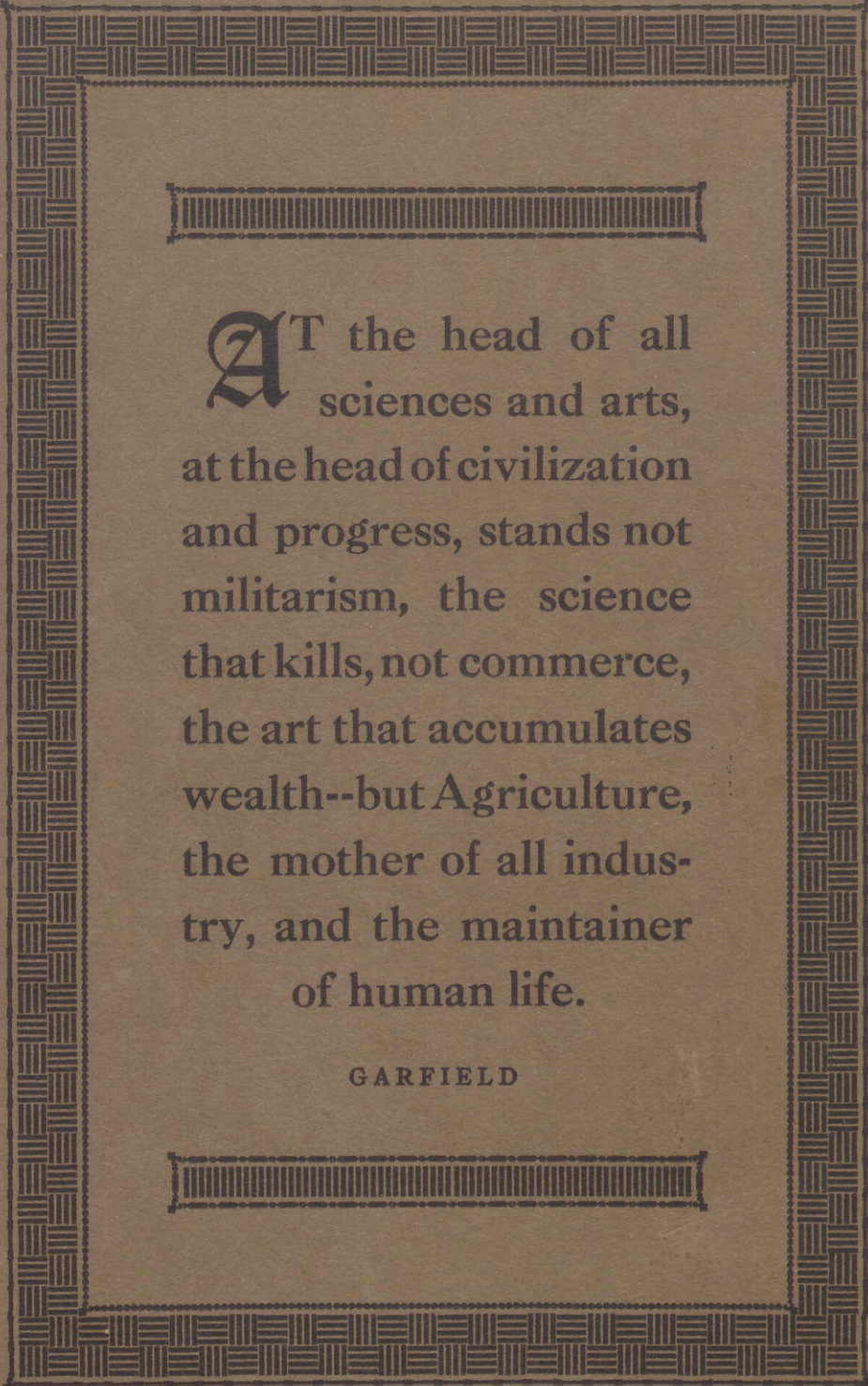
There is nothing of the emotional about the work of the Association. Its activities are characterized by business-like methods which give its rooms the appearance, almost, of a commercial establishment, for its organization has been effected along strictly practical lines. The results of the first four months of effort appear in the reports made by Mrs. Lane which show that in September, October, November and December there were made, packed and shipped the following hospital garments and articles: 348 sheets, 552 pillow cases, 132 face and 132 bath towels, 302 suits of pajamas, 114 suits of underwear, 108 day shirts, 56 hospital shirts, 11 bath robes, and 2 pairs of slippers. There also were knitted and shipped 216 pairs of woolen socks, 124 sweaters, 92 helmets, 49 scarfs or mufflers, and 15 pairs of wristlets.

Besides the garments and other articles there have gone across a large quantity of absorbent cotton, a thousand yards of uncut gauze, 100 rolls of three inch bandages and 200 rolls of inch bandages. Gift bundles for convalescents leaving the hospital are made up by the Interior women in which are shaving soap and brushes, tooth brushes and powder, wash cloths, combs and brushes and the like, and the women of the Pension Bureau clip entertaining stories, jokes, illustrations, and other matter from newspapers and magazines and paste them in scrap books to help the sick and wounded boys pass the time away. Of these scrap books over a thousand have "gone across" and the probability is there will be made up and sent over several thousand more. Puzzles, toilet soap, and handkerchiefs find their way into the big boxes, and every day develops new "first aids" to comfort and cheer the soldiers who will be fortunate enough to be sent to the Interior Department Ward. For instance, hot water bottles now are included among the "comfort-things" that go to Neuilly.

The latest count shows that 937 Interior Department men are in the army and navy and naturally the Interior Department women have first thoughts for them, so, in addition to what is being done for the Neuilly Hospital, over 200 men in the army and navy from the Interior Department have been outfitted. During November and December 163 pairs of socks, 124 sweaters, 29 helmets, 55 scarfs and 106 pairs of wristlets were knitted for Interior Department men in the service.

WHITE MAN'S LOGIC.

As the chest expands the brain contracts.
Be "again" the world and the world will reciprocate.
The mintage of wisdom is to know that rest is rust, and that real life is in love, laughter and work.
Heated arguments cool friendships.
Man sets up drinks, then drinks upset man.
The smaller the caliber of a man the bigger gun he imagines he is when he is loaded.—Exchange.



AT the head of all
sciences and arts,
at the head of civilization
and progress, stands not
militarism, the science
that kills, not commerce,
the art that accumulates
wealth--but Agriculture,
the mother of all indus-
try, and the maintainer
of human life.

GARFIELD

