

# THE VISITOR

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## EDUCATION WITH A CLUTCH

Teachers of agriculture often wonder if their instruction really takes hold. The interesting story printed below is written by Waino Kortesmaki, one of the boys now enrolled in the agriculture class in the Thompson Township Public School where Leo Knuti is the teacher. The results from the study of agriculture where the home farm is used as one of the important bases for determining the problems for study is not only finding expression in the life of this boy but it is influencing the mode of life of the entire family. With this boy education is not a preparation for life—*education is life*. A genuine education is not something that can be forced upon a learner; it is something that is *achieved* through the activity of the learner. The abiding interest that must surely come from this type of education will very likely carry over beyond the school days. Many teachers of academic subjects would gladly welcome similar opportunities for utilizing such purposeful life activities in the process of directing and reconstructing the experiences of the students under their supervision.

### What Help the Study of Agriculture Is to Me

"Under our agriculture instructor, Mr. Leo Knuti, we have studied many important farm problems. One of these problems is culling poultry. We have taken trips to poultry farms and have culled some of the flocks. This is a great help to me because we market about ten hens every week. I cull the hens so as to dispose of the poor layers. I have a number of bulletins on poultry and if we see anything wrong with our chickens we usually study the bulletin to find what is probably wrong with them and try to apply the remedies suggested.

"Before I studied the feed rations for our poultry we fed bran for their dry feed. After a study of some of the rations suggested in the text book our dry feed ration was changed to ground oats mixed with a small portion of middling and about a handful of salt for every two hundred pounds of dry feed. We found that our hens did much better on the improved ration.

"Another important problem we took up is on judging dairy cows. We take trips to dairy farms and judge cows. In this way we learn to know the characteristics of a good dairy cow. I now have about ten bulletins on cattle. One morning one of our cows that had just freshened was sick and would not get up. When I saw the cow I felt the suspicion that she had milk fever, so I ran to the house and got a bulletin on diseases of cattle and looked up milk fever. The appearance of the cow was exactly the same as described in the bulletin when a cow has milk fever. I told my father what was wrong but he chased me out of the barn with my bulletin. I came back and showed him the picture in the bulletin of a cow having milk fever. He finally agreed with me but he did not know what to do. I read the directions from the bulletin. Our neighbor had a milk fever outfit so we got it and treated the cow exactly as explained in the bulletin. That same evening the cow was well again. After that I read from a dairy book what to do to avoid milk fever and now we are going to feed better rations to our cow before freshening.

"One of our young calves had a habit of chewing on the sides of its pen. It tore and chewed wood from the side and ate it. This interfered with its digestion. We tried to stop this by putting tar on the sides of the pen but this did not seem to help. I remembered our study about cows lacking in minerals so I thought that might be the trouble. I found a government bulletin where it had articles about cows suffering from a lack of minerals. We started feeding the calf the rations recommended in the bulletin. These consisted of bone charcoal, bran, salt, and linseed meal. In a few days the calf lost its appetite for wood and is improving in appearance.

"In our agriculture study we had discussions on value of keeping milk records. I find it is of great value. I take records on milk and feed for the herd once a month. In this way I will find the actual value of the cows in terms of production. We are also studying how much to feed a cow after we know her production.

"Another large problem we have come

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## THE STAFF

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across this year is growing potatoes. We took a field trip to a potato field and learned to recognize diseases and potato insects, and we learned how to tell to what variety each potato belongs. We found that one of the important reasons for getting a poor yield of potatoes is that poor seed is planted. One evening my father told me that farming is going to the 'rocks' because the potato crop is going down. I told him our potatoes were run out so we could not expect a better yield. I had to talk pretty long before he became interested in the problem of improving our seed stock. We decided that the Rural Russet is the best potato for our soil. We decided to buy some good seed potatoes from some reliable farmer who raised good clean potatoes. We found a farm near Carlton where they were digging potatoes. The yield looked good and no disease-infected tubers could be seen in the field so we purchased fourteen bushels that we will use as a foundation for improving our potato enterprise. Our plan is to make a seed plot from which we may select our seed every year.

"The raising of alfalfa around our township is not a very common practice. My father is interested in trying to plant some alfalfa seed this coming spring. We are going to test our soil for acidity and see what field is best suited for alfalfa growing. One problem is to find out how much lime to add. This will be done before spring. We hope by that time to have decided what kind of seed to use and how to prepare the soil for planting.

"An important outcome of this work is that my father decided that forty acres is not enough land so he has bought eighty acres more. This brings more problems but also more interest to our work on the farm."

WAINO KORTESMAKI

This story does not represent the activities of one in a thousand but it is representative of what thousands of boys are

doing in connection with their study of agriculture in the high school. The education of these farm boys is not a process of learning the subject matter prescribed in a carefully outlined course of study prepared in advance by a teacher and later forced upon the boys. It is rather the sum-total of the achievements of the boys from the process of learning how to become masters of a few of the many intricacies and perplexing problems arising out of the ever increasing complex environment modern civilization is bringing to people in all walks of life. Education in agriculture does not consist of materials or devices of instruction but of the changes that are made or prevented from being made in individual boys.

The successful teachers of agriculture are rapidly abandoning the idea that there is a hiatus between the home environment or life experiences of the boys and the content of the course of study in agriculture. The dynamic nature of the activities of a modern farm home cannot find complete expression in a static course of study. This should not, however, carry the implication that a suitable education for farm folks needs to concern itself only with the technology appropriate to life on a farm. The teacher of agriculture must take his place alongside the other teachers in the school system in directing the learning activities of the boys to the end that each one may acquire an education "which will broaden the interests and sympathies of people regardless of their daily occupation—or along with it—to lift men's thought out of the monotony and drudgery which are the common lot, to free the mind from servitude and herd opinion, to train habits of judgment and of appreciation of value, to carry on the struggle for human excellence in our day and generation, to temper passion with wisdom, to dispel prejudice by better knowledge of self, to enlist all men, in the measure that they have capacity for it, in the achievement of civilization."<sup>1</sup>

The development of the program for instruction in agriculture in the secondary schools is not propaganda or a passing "flash in the pan" fad. It is a concrete and timely expression of the dawn of a new era in the more complete utilization of the school of a formal agency for providing the kind of experience or education thought appropriate to the needs of the young men who plan to find their life work in one or more of the farming occupations.

A. M. F.

<sup>1</sup> Martin, E. D., Meaning of a Liberal Education.

## OBJECTIVES FOR FARM MECHANICS

"How much Farm Mechanics work shall we include in the course of study in agriculture?" is a question frequently raised by teachers of agriculture. The usual answer is simple. "Provide the amount and kind of mechanical work that will meet the needs of the boys." The answer is almost as meaningless as it is easy to give. In fact no one really knows what a boy will be called upon to do himself and what would be desirable to have done by someone else. Professor L. M. Roehl, Cornell University, has prepared the following list of suggestive objectives for Farm Mechanics. These may be used by teachers as checks for students to determine the extent to which they have acquired the mechanical skills thought desirable for the ordinary mechanical work of the farm. There is no claim that these objectives represent all the experiences any student, or group of students, should have. The objectives are stated merely as suggestions for teachers who are anxious to have their students arrive at some definite goal in the farm mechanics work.

### I. Carpentry

1. To perform all the necessary carpentry tool operations in a workmanlike manner and to apply the tool operations to all needed farm repair and construction work.
2. To know lumber well enough to make such a selection for any farm need as is made by the carpenters of the community.
3. To make out and figure up a bill of material for such construction problems as farmers find it profitable to do.
4. To fit handles in commonly used farm tools, viz.: hammers, sledges, axes, forks, shovels, etc.
5. To know enough about building hardware such as nails, screws, bolts, hinges, rivets, door fastenings, etc., to make a wise selection for any purpose.
6. To be able to cut glass to size and knead putty and properly place a window pane.

### II. Painting and Paint Brushes

1. To be able to select, clean and care for paint brushes.
2. To properly prepare a surface for painting or varnishing.
3. To know how to properly mix the ingredients commonly used by painters in preparing paint and apply the paint to buildings, farm vehicles, machinery, and portable appliances.

### III. Metalworking

1. To fit the farm saws (including the circular cordwood or buzz saw if it is used in the community).
2. To know how to tin a soldering copper.
3. To solder utensils found on farms such as milk cans, pails, wires, etc.
4. To use hack saw, files, cold chisels, punches, metal drills, taps and dies and other hand tools in a workmanlike manner in overhauling farm machinery and keeping other farm equipment in good condition.
5. To grind all edge tools used in farming.
6. To know how to build and keep a good fire in a forge and properly shape and temper farm tools such as pickaxe, mattock, grub hoe, cold chisel, punches, harrow teeth, etc., and to do such other elementary forge work as may be useful in overhauling farm machinery.

### IV. Harness Repairing

1. To clean and oil a harness.
2. To be able to make harness thread and do stitching.
3. To do all the ordinary repair jobs such as putting in a new hame staple and hame clip and putting in all ready-made repair parts.
4. To be able to fit or adjust a harness to a horse.

### V. Rope Work

1. To be able to splice a hay fork rope.
2. To be able to make a rope halter.
3. To reeve a set of block and tackle and figure the mechanical advantages of single, double, and triple blocks.
4. To be able to tie the common knots and hitches which farmers find useful and apply them to farm use.
5. To know kinds of rope suited to farm use and sizes desirable for specific purposes.
6. To know one or more ways of finishing ends of rope.
7. To know how to care for rope.

### VI. Concrete Work

1. To know how to build forms for walls, floors, mangers, walks, curbs, milk house, etc.
2. To test gravel and sand for cleanliness and know mixtures suited to particular purposes.
3. To be able to mix, pour, and trowel a construction job in a workmanlike manner.
4. To do well a repair job in concrete.

### VII. Agricultural Drawing

1. To be able to read such drawings as pertain to rural life.

2. To be able to make working drawings of such appliances as farmers find it profitable to make.

3. To be able to make freehand sketches of details of construction.

4. To be able to make rough drawings of floor plans of farm buildings so as to make clear to carpenters, contractors or architects what is desired.

5. To arrange the layout of farm buildings and fields so as to provide economic use of labor.

#### VIII. Field Machinery

1. To know how to operate and make all the adjustments on the implements and machines which are used on the farms of the community.

2. To sense the desirability of properly caring for and housing all farm tools and machinery.

#### IX. Power Machinery

1. To be able to make all the ordinary operating adjustments and do the repairing jobs connected with gas engines, viz. adjust carburetors, and clean spark plugs, clean out carbon, grind valves, change oil and grease and adjust bearings.

2. To know how to care for a storage battery.

#### X. Belt Lacing

1. To know the different kinds of belts and the kind of work for which each is suited.

2. To know one good way to lace each kind of belt used in farming.

3. To know how to operate and care for belts.

#### XI. Plumbing

1. To know pipe sizes and kinds of pipe fittings.

2. To be able to cut, thread and ream a pipe.

3. To be able to repair leaky faucets and valves.

4. To know how to operate and care for a water system for a rural home.

#### XII. Equipment

1. To be able to select and care for the tool equipment suited to the needs of any particular farm.

2. To be able to build a workbench, saw horse, and other necessary shop equipment.

3. To arrange the equipment and tools so that farm construction and repair work can be done with greatest convenience.

A. M. F.

### Agriculture in the Seventh and Eighth Grades

How to handle the agriculture work in the grades is a perplexing problem to many teachers. F. J. Meade, Superin-

tendent of Schools, Danube, Minnesota, tells the following story of how he has organized the work in agriculture for the seventh and eighth grades. The plan should be of help to teachers who are not satisfied with the results they are getting.

"Our course in the tenth grade consists of a study of Farm Animals. As is the usual case, the boys are quite divided in their interests. Three of them, who live in town, have small flocks of poultry and are keeping poultry records similar to those used by the boys and girls in 4-H Club work. Four others, farm boys, are on dairy record projects and from this start has originated a Junior Cow-Testing Association with the boys in charge and having a membership of eight herds in the neighborhood. The testing is done Saturday mornings at the local creamery, the manager very kindly furnishing the equipment and acid. I supervise the testing but require the boys to do the work as soon as they are able. This has stimulated quite an interest in dairy work here and I noticed that the "dads" of the boys are beginning to watch the cows and concern themselves with the feeding problems.

"As soon as the weather permits, the boys and girls in the grades wish to begin some garden projects. This will be an entirely new departure for their teacher as well as for them but since we have some available lots and the determination to do it I am sure it will be successful.

"During the winter months we have divided the boys and girls in the grade class on Wednesday afternoon, for a period of about one hour at which time the boys have an opportunity to work at manual training. The girls study sewing and textiles under the direction of their eighth grade teacher. We have no regular courses in either of these lines but endeavor to teach a working knowledge of them. The pupils have shown a great interest in this work." A. M. F.

### NEW VOCATIONAL BILL BECOMES LAW

The George-Menges-Reed Vocational Education bill has passed both Houses of Congress and has been signed by the President. This new law provides additional Federal aid for vocational education.

Turttox News is an eight-page leaflet published each month by the General Biological Supply House, 761 East 69th Place, Chicago. The leaflet contains a great many excellent suggestions for science teachers. A. M. F.