COOKING - Miss Rice

The work of cooking in the lower grade is largely means of expression to further carry out the unit of work in, and the life of that particular grade. The work of the grade is based on primitive life in contrast to present day practice, both taken from the social, scientific or illustrative point of view.

This week GRADE 2 made Scottish "fancies" to be served at a Monday's Inter-Grade party. The recipe was a simple one, such that each child could carry out the measuring, mixing and the forming into macaroons in the buttered pan. The child also was to be able to tell at the close of the lesson the number of "fancies" which the one-egg recipe made.

GRADE 3: A study of the potato, its composition and cooking. This week each child grated a piece of potato into a cheese cloth immersed in cold water for the purpose of separating the starch of the potato from the fiber. Then the water in which the bag was placed and into which the starch went was boiled so that the child could see the thickening property of starch. This starch was then used to stiffen their aprons with, which they had previously washed.

The cooking was the making of potato chips. Here again the idea of separating the starch from the fiber was illustrated, as to procure a good potato chip all the cut sections of the potato must have the starch washed from the surface to prevent the soaking of the fat.

GRADE 4: Has no work in cooking.

GRADE 5: They have discussed the manufacture of white flour and its geographical distribution. They performed simple experiments to separate the gluten from the starch, and compared the wheat with corn meal and graham flour.

GRADE 6: Began the work of bread-making. The work of this particular year, aided by the nature study lessons is a study of the microscopic plants of interest in the household, mould, bacteria and yeast. The class suggested the things necessary for making bread: flour, yeast and some liquid, with the possible addition of salt, sugar and fat. Then we discussed the use of each, especially how the yeast plant must be treated in order to make the bread light. Each sponged a small portion of bread and then put it under varying conditions to rise. Some in cold places, some warm, some extremely hot. The conclusions from these experiments led the class to see the necessity of temperature in relation to the growth of the yeast plant. The class also worked out an outline for the giving of a morning exercise on this subject, which exercise will be given Friday, including the nature of yeast, composition of flour, primitive forms of bread, and the manner of bread-making today.

GRADE 7: The work was in distinguishing the third class of food principles, the protein, and the determination of its behavior under different temperature conditions. The experiments were as follows: The effect of heat on egg white.

Experiment 1: Boil in water one teaspoonful of egg white for five minutes. Cook in water at a temperature of 180 F, one teaspoonful for five minutes. Put into water at a temperature of 90 F,
one teaspoonful of egg white and allowed it to remain for five minutes, then heated to 180 F, and continued the heat for five minutes. These three experiments were to be compared from the standpoint of toughness of material, variation in appearance, difference in taste, and the economy of material.

Experiment 2. Effect on cheese: One tablespoonful of grated cheese melted and then heated at a high temperature for several minutes. Results noted. A bit of Cheese tasted under the foil for several minutes and the result noted. General conclusions to be carried out next week.

EIGHTH GRADE: Continued their work on heat, taking up the calorie as a unit of heat, the heat of fusion, the raising in of the boiling point and the lowering of the freezing point by the addition of salt. Review of the transferrence of heat as applied to heating systems in the house. The work in the 8th Grade grows out of the study of the construction of the house outside and in, including heat, light and ventilation. It is the only place in the grade where a science is given, and so special attention is paid here to the problems which lend themselves to scientific treatment.
Jan. 15, 1909.

This week GRADE 3 prepared cocoa for lunches. It was largely an exercise in carrying out a simple process requiring careful measuring and watchful cooking. Varying proportions of cocoa were used and the result observed as to the most suitable amount for the drinking cocoa. This good recipe was then written into the cooking note books.

GRADE 3 continued the work on the potato in suggesting and carrying out various methods for the treatment of the potato for baking. Four methods were suggested and tried: 1st, where the potato was simply scrubbed; 2nd, where the potato was scrubbed and peeled; 3rd, where the ends were cut off; 4th, scrubbed and a peeling cut from the center. These potatoes were then baked and the results compared. The observation pointed to the fact that the potato was more mealy, where an opportunity was given for the escape of steam. The potato entirely pared was very mealy, but the operation was not a suitable one for everyday use, as it was more extravagant of time and material. The class also began the study of history and literature in connection with the potato, of Mr. Burbank and Capt. Marion. The class also prepared for a morning exercise on the potato, deciding their own topics and choosing their own parts. The outline worked out was as follows:

1. An introduction
2. The various varieties of potato with the story of Mr. Burbank's potato.
3. What is the potato?
4. How potato chips were made
5. Telling of the experiments in baking potatoes.
6. The story of Capt. Marion.

FOURTH GRADE - no cooking.

FIFTH GRADE: The Fifth Grade this week made sponge cake as a beginning of the study of expansion of air through the application of heat.

SIXTH GRADE: Grade six carried on their bread lessons. This week they took up the process of kneading and baking the bread. The morning exercise on bread-making was worked out and given with some little success. Their exercise was in outline as follows:

A Discussion:
- The manufacture of flour, new and old method
- The composition of flour
  a. An experiment showing the separation of the starch and gluten
  b. An experiment showing the value of the gluten.
- Leaven as a rising agent
  a. A chart to show the method of growth and fermentation tubes to illustrate the gas given off in the growth.

Recipe for bread-making
- Kinds of breads
- The breads of olden times with stereopticon views.
- A poem on bread written by one of the class.

This exercise is to be written up and put in "The Reporter" for next week.
GRADE 7: The work here was summing up the conclusion from the experiments of last week and applying these conclusions to the poaching of an egg and making of a custard. In custard the class also were to determine experimentally the proportion of egg required to thicken a given amount of milk to a given consistency, and the amount of sugar and flavoring necessary to make this into a suitable dessert.

GRADE 8: In Grade 8 through a written paper and class discussion a thorough review was made of the previous work done on the heating of the house.
GRADE TWO this week made their Indian corn cake. They ground flour from corn, rice and wheat, and determined the method of mixing and baking a primitive cake. A cake of our meal was also made in the same manner and baked to compare the results.

IN GRADE THREE the children further worked on their potato assembly and took up one new step in starch cookery. They were to determine how much starch should be added to a liquid in order to get the best thickening result. These experiments were tried; flour was sprinkled carefully into boiling water with constant stirring and the result noted. This was found to lump and cause dissatisfaction, suggestions that resulted in rubbing flour and butter together and adding it to the boiling liquid; here the result was smooth and promising. Also sugar and flour were mixed together and the result tried. This proved a smooth, sweetened paste, of value for some dishes, but not for a cream sauce. The next step was to determine how much flour is required to thicken a given amount of liquid. Three experiments were tried here. One where we used a half cup of flour to a cup of water; one a tablespoon of flour to a cup of water, and one two table spoons to a cup of water. The half cup was seen to be too thick for any use, the table spoon and two table spoons were decided to be of use for serving on toast or vegetable.

IN GRADE FIVE we made popovers, illustrating the expansion of steam, and doughnuts in quantity to be sold at the candy sale, working out from this the cost of their materials in order to decide a suitable selling price.

IN GRADE SIX the candy sale occupied the entire week. This candy was to be made with the utmost skill possible and carried on as economically as possible. The class determined the selling price of each type of candy by determining the cost of a pound and setting a 50% gain. They also organized the sale, determining upon the children for cashiers, for salesmen and general arrangement. The money from the sale is to be used for room decoration and the Mathematics growing out of it to be utilized in that department.

IN GRADE SEVEN the work was beginning at the batters. Beginning with the popover as a start the class discussed ways of changing this so as to make a plain muffin. This recipe was then changed to a rich method and the resulting proportions tried by the class. Also a written lesson this week for the seventh grade with the following questions:

1. Given three temperatures of value in cooking, and state why.
2. Draw the cream freezer and discuss the principles of construction.
3. What is a good, a bad and a non-conductor? Give illustrations.
4. Determine the recipe for a ginger cake from the rich muffin recipe.
5. Give proportions for thick, medium and thin cream sauce.
6. Why is it the temperature in the upper part of a double boiler is less than the boiling temperature? Devise a
cooker in which the temperature might be the same in the upper part as the lower.

IN GRADE EIGHT the lesson was a written review with discussion of the papers.
The work in the department this week has been in most cases the finishing of the work of this Semester for the given classes. Work in tying up the loose ends, finishing the note books and in one or two instances completing the science work.

FIFTH GRADE:
Work with baking powder as a source of gas, noting action of acids and alkalis to produce carbon-dioxyde.

GRADE TWO:
Made the present-day corn meal griddle cake, discussing the reasons for differences between this recipe and the one used by the early peoples.

GRADE THREE are to continue their work next Semester, and are at present busy with a "mothers' luncheon". The questions for the examination of the EIGHTH GRADE are as follows:

1. Name some of the types of early houses.
2. What purposes are they supposed to have served?
3. What do the early Greek and Roman houses show regarding their family life?
4. What kind of a house was the early home of Colonist?
5. Was there any reason why their early homes should have been made of wood?
6. How did the architecture of the Southern house differ from that of the North and what conditions brought about this difference?
7. What matters should be considered in determining the site of a house?
8. Why should the cellar have very careful consideration?
9. What dangers are connected with "made-land"?
10. What conditions outside may tend to make a house dark and damp?
11. What are the sources of impurity in the air of a house?
12. What points should be considered in planning a kitchen?
13. How were the log-cabins of the Colonists heated?
14. Name and give an illustration of each of the ways heat is transferred.
15. What are the advantages and disadvantages of direct hot water and direct steam heat?
16. By what systems of house heating are ventilating and warmth combined?
17. What would be your choice for a heating system and why?
18. What are some of the dangers of imperfect pluming?
19. Give at least four requirements for safe pluming.
20. What kinds of filters are used for filtering city water supplies?
Feb. 5, 1909.

The change of program for the second semester brought new classes in the domestic science work in the first, seventh and eighth grades.

GRADES THREE AND FOUR continue their work throughout the year.

The work in the new grades the past week was planned to give an acquaintance with the laboratory, its fittings and organization. With the little children a game was organized to center attention on the name and order of utensils in the desk. They were also allowed to wander about and investigate things, finding the dish pans, sink mops, soap, etc. They discussed together the best method for washing and drying the dishes, and determined upon these few simple rules: That they should work by twos, one washing and the other wiping; that the wash water should be hot, that the desks should be left in good order.

In the upper grades the work was organized by pupils working under a chairman chosen by the class. The outline for work which they agreed upon:

LABORATORY DIRECTIONS
(Bring to class until you are familiar with them.)

A. Preparation for work.

I. Personal
   1. Clean hands.
   2. Clean aprons
      a. Aprons kept here
      b. Aprons to be furnished from home.
   3. Boys to wear no coats to cooking room.
   4. Girls to tie back any loose hair.

II. Desk
   1. Keep on desk
      a. Necessary dishes for work
      c. Service plate for soiled dishes.
   2. Keep off desk if possible;
      a. Paper - books, etc.
      b. Matches

B. Suggestions for work
   1. Get all supplies from table at once.
   2. Keep supply drawers closed
   3. Put all refuse in garbage jars.
   4. Keep the desk orderly.

C. Cleaning up.

Materials
   1. Dish pan
   2. Rinsing pan
   3. Sapolo
   4. Soap
   5. Towels
   6. Brushes
Laboratory Directions (continued)

E. Manner
1. Work by twos
2. Pack soiled dishes at right of space of the two pupils.
3. Odd number wash dishes the first day, even numbers wash dishes the second day.

C. Order
1. Dishes packed to the right
2. Dish pans and rinsing pans placed
3. Dishes washed, and wiped and put away (order)
4. Stoves cleaned
5. Desk cleaned (brush and sapolio)
6. Desk cleaned

D. Dish washing.
1. Order - (a) Glasses. (b) China. (c) Enamel. (d) Iron.
2. Hints (a) Do not put wheel of egg beater in water.
   (b) Do not allow knives to soak in water
   (c) Wipe off flour sifter only;
   (d) Let dirty dishes soak;
   (e) To remove burn from a pot, boil up a little washing soda in it.

They also discussed the problem of conduct in this laboratory as differing from that in any other, with the result that a committee shall draw up a few regulations which they are to then vote upon and carry out. These have not been submitted.

GRADE THREE gave the party to their mothers. For this particular class of children it seems to me the party was invaluable. They are a class lacking initiative, class organization and unity of purpose. This gave them an opportunity for work toward a common end, and one which would solicit their energy, good will and best effort. They carefully prepared and arranged their food, and assumed a definite responsibility in meeting, serving and caring for their guests. The parents and teachers were pleased with the responsibility taken, and the show of feeling that these children were capable of carrying into definite successful action.
COOKING - MISS RICH.

Feb. 12, 1909.

The First Grade began its cooking this week in the making of cocoa. Here the work is so organized as to bring simple movements and measurements for the beginning lessons, with increasing difficulty as time goes on. The cocoa-making brings in the teaspoon, the cup and the half cup. The English growing out of this in writing the recipe and the operation was carried on by the First Grade teacher.

The method in the First Grade is largely through imitation. The process is shown the children and then they carry it on independently.

The Seventh Grade were busy with their party, planning and arranging for the meeting and serving of the guests. There were 45 children, as many mothers and about 15 teachers invited. The benefits of such a performance to my mind are the opportunities it offers for co-operation, careful organization, and meeting the emergencies. They failed in one or two instances on committee responsibility, but on the whole the luncheon was successful, and appreciated by the mothers.

In the Eighth Grade the attempt is to give a simple course in science which shall deal with the chemical and physical phenomena of the household. Such matters as the air, especially in its relation to the problem of ventilation, heat in its relation to systems of household heating, water in its relation to plumbing, and city disposal, light in its connection with the home problems. The work began with a distinction between a physical and a chemical change. The following list of experiments were given and the class were to decide if there was an inherent difference, and what this difference was.

No. 1 - A bit of ice was allowed to melt.
No. 2 - Some sugar was dissolved in water.
No. 3 - Magnesium ribbon burned.
No. 4 - Platinum wire heated.
No. 5 - Iodine placed on starch.

From these a conclusion was drawn that in some cases there was mere change in form, in others a resultant change in composition.

After a careful discussion a number of experiments followed where each child was to put down whether or not he thought it a chemical or physical change, with the reasons for it. These were the experiments:
1. Starch plus cold water.
2. Starch plus boiling water.
3. Sodium in water.
4. Phosphorus in the air.
5. Match burning.
6. Ice and salt.
7. Heating of the ring and ball.

With this distinction of chemical and physical clearly in mind and the problems of physics and chemistry somewhat defined, they went to work with the atmosphere. 1st, its general com-
position was taken up and the properties, that is, its elasticity, its color, its pressure, etc. The next step leads towards the nature of the gasses oxygen and nitrogen which compose the atmosphere.
GRADE 1:

This week the first grade made cream toast. The simple toasting of the bread under the broiler and heating of a half-cup of rich milk. Before the cooking lesson we compared the boiling of a cup of water and a cup of milk in glass beakers over the fire. Here the class could see the danger of boiling milk and the difference between the boiling of milk and water. In the milk the skin formed, keeping the steam in, with the result that the milk boiled over. Then the precaution came that the milk should only be heated until this skin just began to form, or until a vapor arose from the pan, that milk was not to be boiled. The children each looked after their own toast, heated their milk, served it over the toast with salt, and ate it for their luncheon.

Grade 3:

In grade three the class found that the raisins which they had been making were ready for use. They were compared with store raisins, were discussed as to what must be done with them before they could be used, and several ways in which they would be of use. They finally decided to make the raisin cake. This simple recipe of

- 1/4 cup of butter
- 1/2 cup of sugar
- 1 egg
- 1/2 teaspoon of vanilla
- 1-1/2 cups of flour
- 2 teaspoons of baking powder
- 1/2 cup of milk
- 1/2 cup of dried fruit.

In mathematics time the class divided this recipe so each made one-fourth, reducing their measurements to tablespoons. In the period given to written work for the cooking, the third grade are getting ready material for a cook book. The form, the cover and the recipes are being worked up and put in such shape that they can be sent to the school press. This gives a very natural and effective means of obtaining fair penmanship, and clear statements.

GRADE 7:

In grade seven the class were first at work upon the effect of temperature on starch. They determined their results through the following experiments:

One teaspoon of cornstarch was added to each of three cups and mixed with a tablespoon of cold water: to cup No.1 was added a half-cup of cold water; to cup No.2 was added a half cup of water at 180° F.; to cup No.3 was added a half cup of water at 212° F. The results were then compared as to the color, thickness, sediment at the bottom, and the appearance under the microscope. Conclusions were drawn as to what temper-
ature effects the starch and what this effect is.

The second lesson was that on the cooking of cereal. The lesson began with what cereal was, what the grains contain, what element was found in greatest amount there. Then in, review the cooking of starch was discussed, as to the best temperature effects and how this could be applied to the cooking of the cereal. There then remained only the recipe in order to carry out the work. The children worked with Pettijohn and Farina, each being given one cup of water and a quarter of a teaspoon of salt with as much cereal as it required to thicken to the consistency they desired for breakfast food. The only precaution to be taken was that they must know how much of the cereal they added to their water and if they added too much, how much water they added to thin it to the proper consistency. Working with the proportions used in Farina and Pettijohn, we determined by comparisons that a quarter of a cup of Farina and a half cup of Pettijohn was needed to thicken the given cup of water. They were then curious as to why the ratio was two to one, and on weighing the two materials, we found that weight for weight gave the bulk in the ratio of two to one. Before the cooking began these cautions and suggestions were made: that a fork be used in stirring; that the cereal be added a little at a time to prevent lumping; that it be boiled five minutes on the top of the stove and complete its cooking in a double boiler. It was then moulded with fruit and served for luncheon.

GRADE 8:

In grade eight this week the class are interested in looking up the beginnings of chemistry. They found out the meaning of alchemy and the first experiments, with their conclusions, which these alchemists performed. Also two experiments were given to show the fact that air occupies space and one experiment was given to show the nature and the properties of oxygen, one of the elements of air. Also a written paper was given to the class on the following questions:

1. What is meant by chemical and physical change? Give six illustrations of each.
2. Give the composition of the atmosphere and tell how each substance happens to be there.
3. Tell how to make oxygen and give its properties.
4. What is meant by alchemy. Give two of the first experiments used by the alchemists with their conclusions.
5. Prove by two experiments that air occupies space.
6. Can you prove that air has weight? Give your experiment.
7. What is the "Philosopher's Stone" and how did such an idea grow up?
GRADE 1:

The work this week in Grade 1 was done by one of the practice girls. She gave a lesson on the making of the "margueritte". The recipe here called for simple measurements. The action was that of beating and stirring things which the child needs to become acquainted with early in the cooking experience. Then the browning in the oven was similar to making the toast.

In GRADE 3 the children are making plans for their parents' luncheon. They listed the things which must be carefully considered as: menu, the number of guests, the teachers that we are to invite and the different committees necessary. The committees decided upon were those for decoration, serving, and reception. In discussing the menu each child wrote out what he thought suitable, keeping in mind the fact that they must do all the preparing and serving, that the combination must furnish something hot and substantial, and that it must not be too expensive. From these menus they then selected things which they thought would be the most suitable for the final luncheon.

In GRADE 7 one lesson on cereal-making was given by one of the practice girls. A very similar lesson to the one reported last week. The science lesson here dealt with the temperature in the double boiler. The children are familiar with the Centigrade and Fahrenheit thermometers, and the means of raising to the boiling point. In connection with the double boiler they discussed the reason for the lowering of the temperature and means by which this temperature could be changed. Also each one determined on the construction that would give them the boiling temperature with the double boiler.

In GRADE 8 we discussed the papers written last week with further talk on alchemy and the first experiments with their conclusions that the alchemists performed. Then followed a demonstration showing the setting up of apparatus necessary for the making of oxygen, showing the means of cutting and bending glass tubing to conduct the gas from the generator.
A STUDY OF THE RESULTS OF OUR TEACHINGS OF THE CRAFTS.

Read by Miss J. P. Rich at Faculty Meeting, Mar. 8, 1909.

The Topic - "A study of results in the crafts of the University Elementary School" is the one assigned for a few minutes' consideration.

Probably there is no more significant factor in our present theory of education than the product, the result of mind and hand of our growing children, and at the same time no factor - the real significance of which is so difficult to read. No psychologist or educator has committed himself to any length in dealing with this subject in its breadth of meaning and in asking help of Dr. McMurry and others as to what is the basis of judgment? What is the value of result in throwing light on child development? by what standards are results of a given grade measured? etc. - they say such answers are yet to be determined. It is thus evident this simple paper can no more than touch the outermost circumference of so wide-reaching a topic.

The crafts were put into the curriculum to aid in realizing our new conception of education - a conception which stated, "Education is a cooperative growth in experience, affording to the individual, resources of self and society and enabling him to become a factor in the progress brought about by the interaction of these factors."

A conception which has brought changes in studies and subject matter of studies; which has brought together at one point the many diverging lines, for social aspects do not allow of isolation; a conception which allows the child an insight into whole activities rather than sections of work; which demands of process a close interrelation and reaction of part and makes product a means of communication.

So in this criticism of result, technique or skill is not the standard, but the communication the result brings of ideas - moral, industrial, scientific, aesthetic, social - things from history, literature, mathematics, science, etc. and made tangible through a craftsman's material.

A result which shows rather facility in acquiring skill and adaptability of oneself to conditions; a power according to Mr. Scott which guides impulse by recognizing the facts, materials and conditions involved and continues to regulate impulse through that recognition, a power that brings from many sources and gives freedom in choice and expression - Just

"As the bird for a moment perched, 
On a frail branch where he sings, 
Though he feels it bend, yet he sings his song, 
For he knows that he has wings."

So the crafts are for the purpose of communication rather than technical skill and the result must be judged on this basis. (It may be added here that satisfactory results in technique in these minor arts need not suffer because of this point of view.)

By this standard then we will judge the various crafts of the elementary school, beginning at the kitchen. Obviously the results are not what they could be. They are poor in spirit (though fair in technical requirements). Take for example our bread-making. When we plan a curriculum to secure vital relations between subjects, we will find the gardener dealing with the production and cultivation of the grains, showing the necessity of a soil rich in nitrate to produce a good commercial product,
the science further pushing the production and growth of the microscopic plants; the English giving expression of this work in description, ode, imaginary tales, etc.; the mathematics solving problems concerned with business transactions in the commercial world.

With these factors operating in the child's mind it is certain to bring an attitude of intellectual worth, a conscious adaptation of means to each, a feeling for investigation, a greater desire to secure perfection of conditions, a deeper interest and hence a better, more constructive, all-round result.

Again, take the cooking of dried fruits - a result of gastronomic worth could well come from a recipe dictated and followed step by step, but how feeble a result compared with one where science has been interested in conditions governing evaporation and condensation. Here the child has resources, he can formulate his own method of procedure and arrives at a result possibly less perfect but with insight to correct and perfect. Many other illustrations could be sighted - some meeting the standard for result and others falling far short.

Next a criticism of the results in clay. The technique is certainly creditable. Vases and bowls, plaques and tiles of good form, pleasing proportion, and beauty of finish are made. Yet criticism comes in the eighth grade that it is too isolated a subject. It fails to give and take of the ideas prevalent in the grades and thus neglects to utilize and give function to knowledge needed expression and fails to give back in added interest to the more formal work. Again - at the exhibit the third grade preserve jars were severely criticised as below standard of third grade accomplishment. The technique was made the basis of judgment. When it was explained that the third grade in connection with the fall work had preserved pumpkin for a Christmas gift and planned these jars especially for the purpose, the criticism was softened. To be sure, grade outlines must not propose things too difficult in technique for results of pleasure to the children or of some credit to a vague notion of accomplishment we carry around. We could well take a lesson from "As you like it" where Touchstone says, "an ill-favored thing, but mine own".

(It is very often time that things of social value to children are also technically suited to them).

As to the shop work - again there appears a lack in its organic relations. Take a bridge made of bent iron and surely the result must suffer where science does not contribute with laws of steam-structure, principles of bracing and trussing, where art does not consider grace of architecture, general beauty of construction; where mathematics does not bring the side of business transactions.

Or again the study and making of the water-wheel is not giving an adequate result unless it brings from the history a realization of the American pioneer in his attempts to control and utilize by means of machinery those natural forces which were at hand; from science some facts of hydraulics.

The printing is one of the most social of arts. Its results cannot but be a judgment on vitally-related subjects - art, English, History. Its results, to my mind, are near the standard of mutual aid.

Textiles, metal and bookbinding are left for open discussion.
Miss Rich - #3.

To report then on a study of results of the crafts, I can but repeat - the technical results in clay-work, metal, printing, cooking, textiles, etc. are a credit to the school, but I question in many instances the results from the other point of view. They are not the most freighted with meaning, they are not representations of the centers of the largest interests, the fullest of freedom, power and originality.

The conditions come about from many reasons. No curriculum meets the ideals of education, a better administrative organization is necessary, a better understanding of the reading of results, a knowledge of the results of individuals in all departments, a greater social unity or part of the faculty, and a breadth of view to which John alludes when he says,

"Think birds and we shall see birds wherever we go."
The cooking classes this week have been in the hands of the practice girls. They have carried on the regular work as nearly as possible - following the 7th grade cereal lesson with cornstarch mould, and rice croquettes, and the 8th grade muffin lesson with ginger bread. The science work here Miss Holmes and myself have kept working from the following slips:

Heat

Temperature (continued)

I. How high can you get the temperature within a double boiler? Compare temperature with temperature of steam.
   Why the difference?

II. Add salt to water in water bath.
   Effect on temperature within boiler?
   How can you increase temperature?
   Try adding sawdust to bath. Explain.

III. Devise a steam cooker for cereals where the temperature may be kept at the boiling point throughout. Make a drawing to show such a scheme.

I. Problem.
   Why do we use a wooden spoon for stirring cream sauce?
   (a) To a small iron rod, stick three marbles along the side with paraffin, three inches apart.
      Hold the end of the rod in the flame. Result?
      Repeat, using a slate pencil in place of a rod. Result?
      Explain differences in action.
   (b) Put one end of a wire, the length of a match, in the flame.
      Result? Put a match in the flame. Explain.
   (c) Explain use of wooden spoons. Note other instances of the same nature in the cooking room.
      How would a spoon with a glass handle be? Try a glass rod. Explain.

In grade three the parents' luncheon has occupied the attention for two weeks. The class planned the luncheon, made market list, did the marketing, cooked and served the luncheon. There were a number of teachers present and one hundred guests in all. The only distinctive feature was the fact that the children made the raisins used in the fruit cake.

The eighth grade science have been interested in the effect of $\text{O}_2$ on different things. They set up two experiments to show the effect of $\text{O}_2$ on growing plants. Two plants of the same size were used - one covered with a jar of air, the other with a jar of $\text{O}_2$. In a few hours the one under the oxygen began to droop and soon the ends were charred or oxidized. The plant in air grew rapidly and the contrast in two days' time was most marked.

Also the effect of $\text{O}_2$ on iron filings was tried - and $\text{O}_2$ as an agent in making $\text{H}_2\text{SO}_4$.

The study at the present time is Nitrogen, another element of the atmosphere.
The first week the practice girls conducted the work and some interruption of regular work seemed necessary to give the girls the most favorable opportunities for their single practice teaching lesson.

The work of the second week was as follows:-

Grade I made cocoa and marguerites to serve Miss Baber's geography class. The children had been studying cocoa and coconuts and had been helped by the college girls, hence this party.

Grade III continued the work with the vegetables, using this time those requiring no heat in preparation. The rough composition was determined and reasoning from the absence of starch the lack of necessity for cooking was determined. They determined best ways of crisping the lettuce and cabbage and used the vegetable in a salad. Lettuce, cabbage, green pepper and radishes were used and served with French Dressing.

Grades III & IV (Miss Hughes' Class), began work on Protein Materials. They experimented with the effects of heat on the white and soft-cooked an egg in the shell.

Grade VII prepared (in one section) custard and ice cream - determining in the first lesson the method of preventing custard from curdling and in the second a simple and economic recipe for ice cream. The other section made custard and wrote on the board the following questions, performing the preliminary experiment:

1. Boil 1 tsp. egg white 5 min.
   Cook 1 tsp. " 5 " in H 0 at 62° C.
   " 1 tsp. " 5 " in " 32° C.

   Notice 1. appearance
   2. toughness

2. (a) What effect has heat on starch?
   (b) Tell how to cook cereal and custard. Why is there a difference in method?

3. Explain carefully why candy causes a more serious burn than boiling water.

4. (a) Is there any difference in temperature of water in lower and upper part of boiler? If so, which has the higher temperature?
   (b) How can the temperature be increased?
   (c) Does sawdust have the same effect as salt or sugar if added to boiling water? What is the difference and why?
The following paper was used in the above lessons:

Cooking Custard

I. Materials
   a.
   b.
   c.
   d.

2. To what class does each belong?
   a.
   b.
   c.
   d.

Temperature of cooking each?

II. Recipe (Steamed Custard).
   1 cup milk sugar to sweeten?
   2 eggs 1/4 tsp. vanilla

Scald milk, add to sugar with beaten egg; place in double boiler and cook until thick drops fall from the end of the spoon. Temperature? Why does it sometimes curdle?

Grade VIII continued work on the atmosphere - taking up the various sources of CO₂ and preparing and collecting the gas. Testing properties, etc.
GRADE I made cookies to be used as favors in the intergrade party. They assisted in the combining of materials and individually cut and baked the cookies. Some cut free hand to represent the fool's cap and others used the forms.

In GRADE III the work continued with vegetables, combining them in asalad moulded in gelatin. Gelatin was new to most of the children and its treatment and behavior had to be experimented with for results. Cold, hot and boiling water was used and the right method determined, the amount of gelatin necessary was dictated from lack of time to determine.

GRADE IV made egg sandwiches as this gave an opportunity to compare hard-boiled eggs with soft, which they cooked the week before. Party Friday.

GRADE VII made cream soup. The idea was developed that a cream soup was a thin cream sauce plus a vegetable flavor. Each then worked out a recipe for some vegetable soup - the results were compared, corrected and carried out.

The Science this week was from the icecream lesson. The following experiments were performed:

I. Freezing Temperature
   1. Fill a test tube 1/3 full of H₂O. Immerse it in chopped ice. Stir occasionally. Note temperature at beginning; in 10 minutes. Does the water freeze? Explain.
   2. Repeat "1" using ice and rock salt in equal quantities. Note time required for freezing; temperature of the frozen mixture and size of crystals.
   3. Repeat again using three times as much ice as salt. Make the same observations as in "2".
   4. Explain the purpose of the salt. Explain the freezing of cream and ices. Draw a picture of a cream freezer and explain the parts.

In the Science work the study has been on CO₂ for several lessons and this week we studied its value in the fire department. The class examined and had carefully explained to them the Babcock fire extinguisher and then its use was demonstrated in extinguishing (out of doors) a small bon-fire.

The Cooking section of GRADE VIII - Review of transference of heat, boiling points with different pressures. Study of baking powder and other raising agents.
GRADE I: Prepared and baked apples. Their attention was called to the stem and blossom end of the fruit and the relative position of the core. They then decided which end to begin the coring and how far through it was necessary to go. The center was then filled with jelly, sugar and butter.

GRADE III. Continued the work for the little cooking book which is to be printed. They determined on the order of the recipes and made the index page. The cooking lesson was the making of gelatin Easter eggs. The shells were saved from the classes and into these they poured the gelatin jelly and allowed it to harden. Then by carefully removing the shell, an egg form was left. The lesson was one in application, for previously they had made the gelatine jelly.

GRADE IV: Made corn beef hash. Compared cooking of meat entirely over the gas - and that started over gas and finished in fireless cooker. On Friday made gelatine Easter eggs.

GRADE VII: Continued on the "egg-thickening" series. Making salad dressing. The recipe was developed from the custard recipe - substituting vinegar for milk and adding mustard and salt for the seasoning. This process was then a review and the result more permanently fixed in mind because of their help in developing the rule.

GRADE VIII: Made shortcake as next step in series of doughs and batters.

In connection with discussion of raising agents made baking soda by Solvay process.

Carbon dioxide test with lime water. Review of acid and alkali tests with litmus. Formation of carbon dioxide gas with different acids and alkali.

GRADE VIII - SCIENCE:
The science lesson took up a rapid review of the constituents of the atmosphere, determining roughly the constant and varying elements. Discussion then followed on the ill results of too dry and too moist an atmosphere. Why a moist warm day made one feel warmer, why a moist cold day made one actually colder; how amounts of CO₂ and O₂ affected the health of those breathing the air, and how these amounts were kept in proper relation to each other in home and at school. A trip was made to the basement and the ventilation system examined and questioned. They are now to look into ways of house ventilation.
GRADE 1 made the taffy apples. The dipping of the apple wasn't to begin until the syrup was thick and near the hard crack (130° C.). This we determined with the water test and also placed the thermometer in the syrup to watch it rise. The last dipping came when the syrup began to turn yellow. The lesson gave an opportunity for group work and hence a difference in social consideration.

GRADE 3 made fruit ice cream. The lesson was one merely in combination of materials with but little emphasis on the process of freezing. However, interest centered on the frost gathered on the sides of the pan and the fact that freezing took place about the side of the can most rapidly. (The freezers were improvised ones).

GRADE 4 made muffins. This lesson was given because there seemed a good opportunity to help in muscular control much needed by the class.

GRADE 7 in the science period discussed the effect of temperature on albumen as illustrated in the white of egg and demonstrated the conclusions with experiments showing the various effects. The cooking followed in the making of custard where the temperature must be kept low or curdling follows.

The other section made salad dressing - where the egg is used in forming an emulsion. Methods of producing an emulsion were discussed and care taken to reduce failures in result. This was served on lettuce with brown bread sandwiches for luncheon.

In the EIGHTH GRADE the class listened to a topic on the "Atmosphere of factories" and added with discussion of personal experiences; the variances were classed as follows:

\[
\begin{align*}
gases &\quad (CO) \\
&\quad (fumes from \text{HNO}_3 - \text{HCl} - \text{P}) \\
\{ \text{vap. dust} \quad (\text{wood}) \\
\{ \text{metallic dust} \quad (\text{lead}) \\
\{ \text{steel} \\
\{ \text{odors} \\
\end{align*}
\]

Instances sighted in mines, brewery, plating works, mills, match factory, slaughter houses, etc.

Also a trip was taken to the power house of the University to see the machinery and appliance necessary to supply direct and indirect heat to this building. Also to see the working of
such machinery. The engineer took us about and explained in
detail. The trip seemed a profitable one.

EIGHTH GRADE (Miss Holmes): This grade continued the work
in the series of batters and doughs by making doughnuts during the
cooking lesson.

During the science lesson of the previous week in which we
were using the litmus test for acid and alkali, a question regard-
ing the litmus paper came up which was left over for the next
lesson. After this matter was settled we took up the discussion
of cooking as well as heating by conduction, radiation and
convection.
COOKING ——— MISS RICH.

April 23, 1909.

GRADE I made cookies for a party to the brothers and sisters of their grade. Also one section made Charlotte Rousse. The class of 12 divided among them 4 cups of cream and 36 lady fingers. The mathematics was valuable and the manipulation following also of value.

GRADE III spent their entire time working out recipes for the cook book they hope to have printed for them.

GRADE IV rolled cookies and shaped them for baking. A special request had been made by a majority of the class that they be given an opportunity to write recipes for things they had made in class, so that they could make them again at home. This written lesson was given. Then the class did some work in measurements used in the cooking room.

GRADE VII wrote one lesson on the following questions,
1. Change 1000 C. to F.
   800 C.  
   1200 C. 
2. Give reason for treating tomatoes differently in making cream soup than corn or spinach.
3. When and why do we use a double boiler? Can you devise a steam cooker where boiling point can be maintained?
4. Why does boiling taffy make a more severe burn than boiling water?
5. Draw an ice cream freezer and discuss freezing.

The classes in cooking began the batter series with muffins.

GRADE VIII: In one section took a trip to the Fire Department to see the apparatus and chemical engine. The director was especially intelligent and ready to show and explain everything. The following lesson was in answering these questions:
1. Explain carefully how a fire-engine aids in throwing water on a burning building. Draw to illustrate as much as possible.
2. Give and explain the apparatus necessary to a fire equipment which can only be seen at the engine house.
3. Explain with drawings the principle of the telegraph. How is such a piece of machinery of use in a fire department?
4. Explain with drawings the Babcock fire extinguisher. How is the principle used in the putting out of large fires?
5. Explain the principle of an underfed furnace. What are the advantages?
   Answer with care and neatness.

GRADE VIII: In the other section made cookies, following on in the series of "Batters and Doughs", giving an opportunity for more practice in manipulation.

During the science period we took up the subject of preparation of a site for building a house, trying experiments with different soils to show conditions that govern drainage. We also tried experiments to give a clearer idea of "ground air".
GRADE I is preparing for the Mothers' Luncheon to be given Thursday, May 27th and learned a simple way of making fruit ice cream in the quantity. The class as a group worked together taking turns in measuring and stirring.

GRADE III:
The making of gelatin dessert. Moulded with fruit. The science times was spent in tasting the various vegetables for acids, starch, water and sugar.

GRADE IV:
The fourth grade started work on a trellis to be used in the garden for grape vines. They are especially interested in the planting of the grapes because they have already made raisins from grapes purchased at the market. The building of this trellis also offers an opportunity for practice in the control of material which seems a special need of this group.

During the cooking lesson they made plain cake, after changing a large recipe to an individual amounts which required work in fractions.

GRADE VII:
Worked further on their batter series - changing the pop-over to the pancake and the pancake to the waffle. The science work explained and demonstrated the means of making mixture light, air, steam, CO₂.

GRADE VIII:
The eighth grade made jumbles during their cooking lesson. This required a little more skill in manipulation than previous lessons on doughs.

During the science period they had a written lesson with the following questions:
1. What are three of the sources of heat?
2. What is steam?
3. What is vapor?
4. Is steam visible?
5. Is vapor visible?
6. (a) What is it that you see coming from spout of teakettle when water is boiling?
(b) How can you change the boiling point of water?
7. (a). What is a good conductor?
(b). Give an example of heat transferred by conduction.
8. (a). How is heat transferred in a room heated by a stove?
(b). In what directions may you feel the heat in such a case?
(c). Can you give any other example of heat's being transferred in the same way?
9. (a). How is heat transferred to radiators of a hot water heating system?
(b). How is the heat transferred to radiators in steam heating system?
10. Describe an experiment that will show convection currents in heated water.
11. What kinds of heating systems combine heating and ventilating?
12. What conditions must be taken into consideration in choosing a site for a house?
13. Give several reasons why the building of the foundation and cellar is very important.
14.(a). Describe experiments to show that there is air in the ground.

The chemistry section gave a morning exercise on the air—giving the composition, a brief life of Priestley. Made and tested O₂ and CO₂ and explained the use of CO₂ in the fire extinguisher.
GRADE I prepared egg salad, washing and crisping the watercress and seasoning the egg yolk. The lesson gave opportunity for considerable hand work of not too fine a type, and gave the use and location of such terms as stem, leaf, root, etc.

GRADE III: 1 lesson cut for a park trip. 1 section made ice cream.

GRADE IV made cake. This gave an opportunity for working with a little more complicated recipe than they had used previously, and also offered greater opportunity for manipulation.

The science period was taken up by writing of recipe after the class had told how they had proceeded in putting materials together. It took some time to decide on a clear and brief statement of the different steps.

GRADE VII: The science lesson was from the following:
Sugar Cooking.
A. Temperature of value.
   1. Take 1/2 cup of sugar - add 1/2 cup water, bring to a boil and note:
      a. 114-1/20 - 116°C, soft ball
      b. 125°C, hard ball.
      c. 135°C, small crack.
      d. 143°C, crack
   (Note appearance, test in water, note sizes of bubbles, etc.)
B. Effects of acids.
   Boil 1/2 cup sugar and 1/2 cup water and 2 tsp. vinegar for twenty minutes slowly. Apply sugar test. Result.
   Cook until brittle and pour over nuts.
C. Effect of long cooking.
   Take 1/4 cup of sugar and 1 cup water, test with Fehling's solution every fifteen minutes. Change? Cause?

The purpose is to bring out the principal laws governing the making of simple candies.

The cooking lesson was following out the lessons already begun on the Batter Series. Cake - Individual ovens were provided, and the entire operation was in the hands of the class.
I feel along these years (6th and 7th grades) the children must get a good deal of practice in manipulation and this series of lessons gives repetition of movements in an interesting variety of dishes.

GRADE VIII gave a morning exercise on the atmosphere - giving a talk on the general composition - the life of Priestley, making and testing of O₂ - the making and testing of CO₂ and the application in the fire extinguisher. Also in one section continued the work on H₂O - using Jewett's "City and Farm" on "Drinking Water".

GRADE VIII, SECTION II made chocolate cake and baked it in individual ovens using thermometers to aid in keeping an even
temperature. This gave the members of the class more responsibility in baking. They also tried different methods for determining when the cake was done.

The science period was taken up by a discussion of written papers of the previous week.

This included, besides a review of the subject matter, a discussion of the form and neatness (or lack of it) of written papers.
GRADE I began preparations for the luncheon by blanching and salting nuts and making cookies - things prepared a few days in advance. This gave opportunity for repetition of processes already performed and hence a plan for improved result.

GRADE III gave the group luncheon. A group of eight - selected by a class-chosen chairman were responsible here. They planned in committee meetings the menu - market list - guests (12 the limit), organization of work, and carried out all their plans independently. When they came up against a point nobody could answer on the committee, it was referred to the teacher. Such a luncheon was given as I am very much interested in Prof. Scott's theory of group work, because I felt the larger luncheon (already a part of the school curriculum when I came here) needed to be possibly replaced by something different, or at least supplemented by something else. I have not yet met the group to talk things over, but the thing was a fair beginning and successful enough to warrant a repetition in some other section of the school. This form gave opportunity for initiative of real value and a realization of the necessity of organized work.

GRADE IV started work with milk and cream with the problem in mind: which is cheaper, to buy butter, buy cream and make butter, or to buy milk and skim the cream and make butter from it? The class found first some of the different elements in milk, as sugar, fat, water, etc. They determined the amount of cream from one quart of milk by weight and measurement.

They knew the cost of milk. This will give a special opportunity for number work as well as a study of the process of butter-making.

On Friday the class spent their hour clearing up the dishes after a luncheon given by the third grade.

GRADE VII continued the series already at work upon "Batters and Doughs".

GRADE VIII made Boston Cookies on Tuesday as their regular cooking lesson and on Thursday they repeated this lesson making larger quantities to serve on Saturday to members of the A.C.A. who held their meeting in the building.

GRADE VIII SCIENCE:
Lesson in discussion of water supply of cities. Source of water, methods of making pure disposal, etc. Distilled some water and compared residue from samples of water before and after distilling.
GRADE I gave their Mothers' luncheon and spent their periods cooking for this purpose. The menu was simple - all things the children had previously made:
- egg salad
- sandwiches
- salted nuts
- lemonade
- ice cream and cookies.
They planned their serving and did a large part of the work from beginning to end. Opportunity grew out of this for good mathematics and English.

GRADE III spent one period on discussion of the group party given last - Such questions as
1. Expense
2. Ways of making a more successful luncheon.
3. Why especially liked this luncheon, etc.
One period was taken by Miss Frahe in practice - a lesson on butter.

GRADE IV made butter during one lesson and worked out the cost of cream used.
During their second period they weighed the butter and salted it and worked out the amount of butter made from two quarts of cream.
Also discussed the difference in appearance of their butter uncolored and that from the market.

GRADE VII One period was taken at the Butcher shop. Here the hind quarter of a beef was cut up - showing the various cuts -
- Prime ribs
- Steaks
- Short Rump, etc.
Also a comparison of poor and good beef as seen from the fat, color, texture, etc. Another section's time was spent in cooking for Miss Rice's luncheon, and a group serving it. Also a science period was spent in discussing and formulating rules of serving, as -
1. Serve to the left things to which the guests are to help themselves.
2. Serve to the right things placed for the guest.
3. Crumb to left.
4. Use tray but little, etc.
GRADE VIII. Improvising a still and distilling water and testing distillate for mineral and organic impurities. One piece of apparatus made was most ingenious - a good imitation of the Leibig apparatus.

Also one boy made a geyser which threw water some 15 inches high.

Pumps were discussed and simple lift pump made - showing the use and working of valves.

The plumbing of a house was investigated through the use of a small model - and questions brought up for home investigation.

EIGHTH GRADE (MISS HOLMES):

Made ice cream by different methods reviewing temperatures in connection with frozen mixtures.

During the science period we took up the discussion of kitchen plans that had been handed in and began work on fuels used for cooking.
The seventh grade put into practice knowledge previously gained by experiment and broiled beefsteak and fried potatoes as potato chips, French fried potatoes, potato marbles and lattice potatoes, using bread test for cooking temperature of fat.

During the science period the class visited marked to see a quarter of beef cut showing the position of the different cuts. Attention was also called to the Government inspection of meat and the method of keeping meat cool in the market.

Eighth Grade made chocolate creams. This offered an opportunity for careful work with thermometer, in manipulation and patience, and a long-felt desire of the class to make candy was satisfied.

This grade also made marguerites, taking the responsibility of regulating the heat of their ovens with thermometer, and attending to the entire process of baking.

Fourth Grade made sour milk cheese and used it with water cress for sandwiches. This showed one use the milk could be put to after using the cream for butter and other purposes.

Class was excused from science period to attend a lecture.

Third Grade Thursday made butter, salted and weighed it, getting one pound and one ounce of butter from two quarts of thin cream.
The reports of the Domestic Science work have thus far been simple statements of the work as carried on from week to week. Here I wish to go a little further and offer a criticism of the work and the method of its presentation.

Domestic Science gradually grows in favor as its practical and purely manual side are lost sight of or submerged to as to be as inconspicuous as the warp threads of a fabric. In other words, Domestic Science gains respect and power by bringing forward its "technological" side. Never, however, can the practical threads be concealed and never can the work go on with profit without them. This branch finds its educational value, not alone in furnishing expression for ideas, in giving opportunity for self-direction and control, in presenting everyday means for scientific application, in training one part of the body to respond skilfully to another, in furnishing a content for common things, but finds value in giving ability to perform duties and tasks to the better individual satisfaction, ability to do the practical but necessary work in life. In order to realize on these values care is necessary in the selection and presentation of subject matter. Method is the important point; and the endeavor to expose the method as far as possible through the outline of work in each grade.

The work is started in the kindergarten by the teachers there and in that department. One has but to recall the small child of the family to realize its fitness here. The real life can as well be offered as the "Kitchen Garden" play and the natural and native interest brings more lasting results. Imitation is the avenue of approach and directions are by manual illustrations for the mind can do but little thinking, reasoning or deducting, however the spontaneity of the child can be held and directed.

In the Primary Grades, food, shelter and clothing are the centers of thought and points of departure for the curriculum with a fairly equal division of time to each. The Domestic Science here is not a clearly defined branch but an agent for the illustrating or starting point of some thought, idea or the means of carrying out some social desire. It is a tool for the building upon of a foundation of experience. It is a means to an end.

Grade I is a direct continuation of the kindergarten work. The luncheon which these little people are to give their parents directs and determines the selection in part, as does also the technical requirement of a given dish and the limitations of the cost of this fare. Care is taken to grade difficulties and only are new elements introduced as the need is felt for them. Parts are kept to 1-1/2, 1/4, 1/3 - weights to 1 lb., 1/2 lb., 1/4 lb. Measurements to 1, 1/2, 1/4 cup - 1, 1/2 tbsp. 1 tsp. 1 s.s. Combines limited to 4 things generally.

The method is one of deduction and simple reasoning. Few rules or recipes are placed before the children to follow and little experimental work is done. Materials are chosen as lend themselves to a thought of mathematical relation suited to the reasoning and number sense of the Grade. For example they are to cook farina. The way of cooking pettijohn is recalled and a comparison of the two cereals made through such questions as,
"How do these materials differ?" "Any difference in weight?" etc. Then place the two cups on the balances and fill the cup of pettijohn until it balances the one-half cup of farina. The proportion here is two to one, and the children can figure the amount of farina for one cup of water when one-half cup of pettijohn is required.)

In Grade II the attack is to set the children from the situation of today back to the crude beginnings of things and illustrate the evolutionary development of cooking and necessary utensils through the tribes of "Tree Dwellers", "Cave Men", "Indians" and "Shepherd People". This at once puts the work on an experimental basis. We are here and don't know what to do - devise a way! For instance - The acorn (almost the only food of one of the early peoples) is bitter. We find the squirrels in the park today and the pigs in the pen refuse to eat them. Still it was all they had. What could they do? See if you can get rid of the bitterness.

This return to the obsolete process is not to acquaint the child with such things "per se", but as Miss Dopf puts it, "To aid the children in gaining their social intuition." The work is strengthened by present contrast with home doings in carrying on modern cooking to be utilized for Christmas, some party or gift.

In Grade III the work has grown from the trade and transportation and fruits and vegetables of commerce studied. The children have studied causes for and methods of preserving and drying. They have experimented with methods and varieties and come out with an awakening interest in cause and effect. The work has been especially "organic" here and been supported by the grade work as well as contributory to it. To illustrate - the children worked to make raisins from the grape - and the mathematics and science worked out rate and causes of evaporation.

At this age the children are keen for experimental work and interested in analysing the food materials. They are ready at this period to take some initiative. This last has been given opportunity to grow and develop through the party. This party being of such a nature that a group with an elected chairman carries out all details independently. This plan has been tried twice and the benefits are educational in my judgment - especially was the thing worth while when one of the weakest members of the class carried out a simple party to such perfection that the children themselves were astonished and spoke of the success.

Grade IV has no work.

In Grade V the work aain grows out of and develops with the History of the grade. The Colonial family life is imitated and contrasted with the life of today and some attempts at explanation of change and progress through the simple scientific study of flour and cornmeal, soda and baking-powder.

In Grades VI, VII & VIII the weekly outlines have covered the type of work. Here the subject is no longer a tool as in the sense of the primary work. It is a branch with aims and ends of its own to satisfy. It makes its contribution to the grade through spirit than actual contact in subject content. The object is to give the children the underlying facts in regard to food classes, their best preparation for use, and sufficient training to develop skill in manipulation at an age where it can
be most economically fostered. The method again is to proceed in such a manner as to develop independence in the use of food stuffs and give ability to the individual, to work from principles rather than recipes. Each class gives a mothers' luncheon which furnishes a natural application for the more practical and social side of the subject.

Throughout the work a balance is aimed at to keep the social, the scientific and the practical aspects of the subject in evidence and with emphasis on the proper phase at the most favorable moment.

The work merits the following criticisms: (1) Too much emphasis is placed on the activity of cooking at a loss to other household occupations.

(2). Work of such a kind in the lower grades to be most effective needs the presence at each lesson of the class teacher or possibly such work is best conducted by the class teacher.

(3). The number in a section is too large in the lower grades, 12 is sufficient or even 8 of the little ones.

(4) I am about ready to advise that 7th grade boys be allowed to elect cooking rather than scheduled to take it.

(5). The time should be, if possible, one hour and thirty minutes per lesson. The hour period is not satisfactory.

(6). The course in Grade 8 had best be of a scientific character rather than Home Economics. The science - physics and chemistry - can have a practical application to the home, but not entirely center there. The boys especially are ready for more experimental science at this age.

(7). There is need of more industrial excursions in this work.

(8). The fourth grade might well have a half year of work and the third only one-half year.

(9). The outline of Grade I is not enough an organic part of the life of that grade, I believe.
The report from the D.S. work has been in the main simple statement of the work as it has been carried on from week to week with little attempt at analysis or criticism. The object of this report is to go deeper into the work giving a comprehensive and critical view of the attempt to supplement...
The report of the U.S. unit has thus far been a little unsatisfactory. If the work is carried on from now on, then I wish to go a little further and give some criteria of the unit and its members in its presentation.
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1 lb.  1/2 lb.  1/4 lb. Measurement 5
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This return to the obsolete process is not to acquaint the child with such things "per se" but as Miss Dopp puts it — "To aid the children in gaining their social intuition." The work is strengthened by present contrast with home doings in carrying on modern cooking to be utilized for Christmas, some party or gift.
In Grade III, the work to grow from
the food and transportation and
fruit and vegetable commerce. One
of the children had studied corn for
methods of preserving and drying. They
have experimented with methods and
varieties and came out with an
amazing interest in corn and effect. In
work has been especially organic and
been supported by the grade work as
well as contributory to it. To illustrate
the children worked to make raisins from
the grape and the meal to making
new and improve it. At this age the
children are more
for experimental work and interested in
analyzing the food material. They are
ready at this period to take some
experiment. The last has been given opportunity
to grow and develop through the party.
This party being of such a nature that a group with an elected chairman carry out all details independently. In addition this group has had a trial under certain the benefits are educational in my judgment; especially when the thing works while when one of the weaker members of the class carried on a simple party how such perfection for the children themselves was a turning point of the success.

Task 4. Va. in art

Task 5. The work again grows out of and develops with the sitting of the grad. The Colonial family life is illustrated and contrasted with the life and today a few attempts at explanation of change & progress. Things the simple scientific study & plans & carried on to taking forder. 1/2 week
In grade 6, 1188 the weekly outline shows various topics. The type of work here is to analyze and make the process of the primary topic. It is a branch with a twist to meet the needs of satisfying it. It makes its contribution to the grade more through spirit than actual contact in subject context. The object is to give the children the underlying facts in regard to good classes. Their first preparation for use and sufficient training to develop skill in manipulation at an age where it can be most economically fostered. The method again is to proceed
in our name as to develop independence in the very first steps and give ability to the individual to act from principle rather than excuse. Each class gives a matter, lesson which furnishes a natural application for the more practical social code of the subject.

Throughout the work a balance is aimed at to keep the general scientific and the practical aspect of the subject in evidence and with emphasis on the paper in front at the most salient point at a moment. The work merits the following criticism. Too much emphasis is placed on the activity of certainty at the
lost in the hundred occupations.

(2.) It may be held in the lower grades to be most effective with the inexperienced or each class of the class. Traced or possibly such and conduct in such a manner as to be conducted by the class teacher.

3.) This system in a section is

In large in the lower grades - 12 is sufficient or even 8 of these little ones.

4.) I am about ready to advise that 7th grade boys be allowed to select cooking tasks than schedule to take it.

5.) The time should be, if possible,

1 hour to 30 min. per lesson, the term period not satisfactory.
6.) The course in Grade 8 led but to a scientific chemistry rather than home economics. The Science - physics of chemistry - can have practical application to the home but not entirely cent. The boys especially are ready for more fundamental science at this age.

7.) Here is need for industrial education in this work

6.) The fourth grade might well have a leg up of math and the red only ½ yr.

9.) The first 7 grade I am not except an organic part of the life of these grade. I believe.

J.P. Reik
The reports of the Domestic Science work have thus far been simple statements of the work as carried on from week to week. Here I wish to go a little further and offer a criticism of the work and the method of its presentation.

Domestic Science gradually grows in favor as its practical and purely manual side are lost sight of or submerged to as to be as inconspicuous as the warp threads of a fabric. In other words, Domestic Science gains respect and power by bringing forward its "technological" side. Never, however, can the practical threads be concealed and never can the work go on with profit without them. This branch finds its educational value, not alone in furnishing expression for ideas, in giving opportunity for self-direction and control, in presenting everyday means for scientific application, in training one part of the body to respond skillfully to another, in furnishing a content for common things, but finds value in giving ability to perform duties and tasks to the better individual satisfaction, ability to do the practical but necessary work in life. In order to realize on these values care is necessary in the selection and presentation of subject matter. Method is the important point; and the endeavor to expose the method as far as possible through the outline of work in each grade.

The work is started in the kindergarten by the teachers there and in that department. One has but to recall the small child of the family to realize its fitness here. The real life can as well be offered as the "Kitchen Garden" play and the natural and native interest brings more lasting results. Imitation is the avenue of approach and directions are by manual illustrations for the mind can do but little thinking, reasoning or deducting, however the spontaneity of the child can be held and directed.

In the Primary Grades, food, shelter and clothing are the centers of thought and points of departure for the curriculum with a fairly equal division of time to each. The Domestic Science here is not a clearly defined branch but an agent for the illustrating or starting point of some thought, idea or the means of carrying out some social desire. It is a tool for the building upon of a foundation of experience. It is a means to an end.

Grade I is a direct continuation of the kindergarten work. The luncheon which these little people are to give their parents directs and determines the selection in part, as does also the technical requirement of a given dish and the limitations of the con of this are. Care is taken to grade difficulties and only are new elements introduced as the need is felt for them. Parts are kept to 1-1/2, 1/4, 1/3 - weights to 1 lb., 1/2 lb., 1/4 lb. Measurements to 1, 1/2, 1/4 cup - 1, 1/2 tbsp. 1 tsp. 1 s.s. Combinations limited to 4 things generally.

The method is one of deduction and simple reasoning. Few rules or recipes are placed before the children to follow and little experimental work is done. Materials are chosen as lend themselves to a thought of mathematical relation suited to the reasoning and number sense of the Grade. (For example they are to cook farina. The way of cooking pettijohn is recalled and a comparison of the two cereals made through such questions as,
"How do these materials differ?" "Any difference in weight?" etc. Then place the two cups of water and fill the cup of pettijohn until it balances the one-half cup of farina. The proportion here is two to one, and the children can figure the amount of farina for one cup of water when one-half cup of pettijohn is required.

In Grade II the attack is to set the children from the situation of today back to the crude beginnings of things and illustrate the evolutionary development of cooking and necessary utensils through the tribes of "Tree Dwellers", "Cave Men", "Indians" and "Shepherd People". This at once puts the work on an experimental basis. We are here and don't know what to do - devise a way. For instance - The acorn (almost the only food of one of the early peoples) is bitter. We find the squirrels in the park today and the pigs in the pen refuse to eat them. Still it was all they had. What could they do? See if you can get rid of the bitterness.

This return to the obsolete process is not to acquaint the child with such things "per se", but as Miss Dopp puts it, "To aid the children in gaining their social intuition." The work is strengthened by present contrast with home doings in carrying on modern cooking to be utilized for Christmas, some party or gift.

In Grade III the work has grown from the trade and transportation and fruits and vegetables of commerce studied. The children have studied causes for and methods of preserving and drying. They have experimented with methods and varieties and come out with an awakening interest in cause and effect. The work has been especially "organic" here and been supported by the grade work as well as contributory to it. To illustrate - the children worked to make raisings from the grape, and the mathematics and science worked out rate and causes of evaporation.

At this age, the children are keen for experimental work and interested in analyzing the food materials. They are ready at this period to take some initiative. This has been given opportunity to grow and develop through the party. This party being of such a nature that a group with an elected chairman carries out all details independently. This plan has been tried twice and the benefits are educational in my judgment - especially was the thing worth while when one of the weakest members of the class carried out a simple party to such perfection that the children themselves were astonished and spoke of the success.

Grade IV has no work.

In Grade V the work again grows out of and develops with the History of the grade. The Colonial family life is imitated and contrasted with the life of today and some attempts at explanation of change and progress through the simple scientific study of flour and cornmeal, soda and baking-powder.

In Grades VI, VII & VIII the weekly outlines have covered the type of work. Here the subject is no longer a tool as in the sense of the primary work. It is a branch with aims and ends of its own to satisfy. It makes its contribution to the grade more through spirit than actual contact in subject content. The object is to give the children the underlying facts in regard to food classes, their best preparation for use, and sufficient training to develop skill in manipulation at an age where it can
be most economically fostered. The method again is to proceed in such a manner as to develop independence in the use of food stuffs and give ability to the individual, to work from principles rather than recipes. Each class gives a mothers' luncheon which furnishes a natural application for the more practical and social side of the subject.

Throughout the work a balance is aimed at to keep the social, the scientific and the practical aspects of the subject in evidence and with emphasis on the proper phase at the most favorable moment.

The work merits the following criticisms: (1) Too much emphasis is placed on the activity of cooking at a loss to other household occupations.

(2) Work of such a kind in the lower grades to be most effective needs the presence at each lesson of the class teacher or possibly such work is best conducted by the class teacher.

(3) The number in a section is too large in the lower grades 12 is sufficient or even 8 of the little ones.

(4) I am about ready to advise that 7th grade boys be allowed to elect cooking rather than scheduled to take it.

(5) The time should be, if possible, one hour and thirty minutes per lesson. The hour period is not satisfactory.

(6) The course in Grade 8 had best be of a scientific character rather than Home Economics. The science - physics and chemistry - can have a practical application to the home, but not entirely center there. The boys especially are ready for more experimental science at this age.

(7) There is need of more industrial excursions in this work.

(8) The fourth grade might well have a half year of work and the third only one-half year.

(9) The outline of Grade 1 is not enough an organic part of the life of that grade, I believe.