

" A Plea For Domestic Science in the Grade School "

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A Plea For Domestic Science
in the Grade School.

The novel entitled "The Breadwinners" published about 25 years ago is a social study dealing with the problems of labor. Among other points the author presents the idea that education of the laboring classes would not improve the labor situation. Subsequent development, however, shows that in this his estimate has not been justified.

As the laboring class becomes educated, we find their object no longer merely to solve a question of how to subsist, but a question of how to accumulate money, and to achieve a higher standard in every way. In striving to do this, they have improved from a standpoint of morals and character, and therefore have become better citizens.

In order to broaden the opportunity for the mental and physical development of the laboring class, child labor has been prohibited, and laws for compulsory educations have been made. Although the standing of our public schools throughout the land is high, in these does a girl gain an education precisely adapted to a woman's work as a boy is prepared for a man's work? In the common school and in the high school course is the girl taught the truths of science which lean upon woman's work with reference to the use the woman makes of them? Is the practice by which such skill is required given? The girl should be given training in her early years to make her a woman more useful in her home, more helpful in her community, and more able to accomplish everywhere the work she wishes to do.

Among a large per cent of the laboring class the man of the family gets from one dollar to one dollar and seventy five cents

per day. The time and energy are spent in keeping up the income, and the expenditure of it falls upon the wife. She must properly feed and cloth her family and if possible lay by for the rainy day. To do this she must be something of a chemist, nurse, cook, accountant, sanitarian, seamstress, and a disciplinarian. The high school course that prepares for such a station must include a thorough training in Domestic Economy which is composed of Household Economics, Home Nursing, Chemistry of Foods, Theory and Practice of Cooking, Sewing and Hygiene. After mastering these economic principles of right living poverty will be easier for the poor to bear, if indeed it is not altogether overcome.

However, statistics show that only two per cent of the pupils of the United States get a high school education. Therefore, as the girl in the Chrysalis state today, is the woman tomorrow, if she is to truly fulfill her mission, the rudiments of Domestic Economy must be put in the grades. Milton says, "The childhood shows the man as the morning shows the day". Surely then, the girl in the grade school learn the habits of cleanliness and hygienic and economic living.

These courses in home-training are now being introduced into many of the public schools of our larger cities. Boston was one of the first to realize that such work furnishes one of the greatest social-ogical factors for good. A thorough course was established in their grade schools in the year 1900. Here is an outline of one of the two years of their work. During both years the work is much the same in order that the theoretical work will be gone over the second time, giving it more fully the last.

A Course in Household Arts.

I Sweeping and Dusting

1. The Object.

- 1¹ To remove Dirt and Dust.
- 2¹ Discussion of Dirt and Dust.
- 3¹ Dust Plants.
- 4¹ Bacteria
 - 1² Size
 - 2² Source
 - 3² Condition for growth

2. Implements for sweeping.

3. Method

- 1¹ Sweeping Carpets .
 - 1² Preparation of Room.
 - 2² Implements.
- 2¹ Sweeping stairs.
- 3¹ Care of sweeping utensils.

4. Method of Dusting.

II Washing dishes.

- 1. Preparation.
- 2. Soaking dishes.
- 3. Greasy.
- 4. Order.
- 5. Method.
- 6. Scouring knives.
- 7. Care of dish clothes and towels.
- 8. Stains.
- 9. Care of Sink.
- 10. Garbage.

11. Scrubbing boards and tables.

12. Care of refrigerator.

III Making and care of fire.

1. Heat.

2. Fuels

3. Arrangements of stove.

4. To lay fire.

5. To Blacken stove.

IV Laying the table.

1. The breakfast table.

2. The supper table.

3. The dinner table

4. Waiting on table.

V Food.

1. Five Food Principles.

1¹ Proteid.

2¹ C.H O.

3¹ Fats and oils.

4¹ H₂O.

5¹ Mineral matter.

VI Measuring.

VII Cooking fruits

1. Dried fruits.

2. Composition of fruits.

3. General rule for cooking dried fruits.

4. Practice work.

1¹ Stewed prunes

2¹ Steamed apples

3¹ Coadled apples

- 4¹ Baked apples.
- 5¹ Cranberry sauce.
- 6¹ Baked Bananas

VIII Beverages.

A Tea

- B 1. History of the plant.
- 2. Directions to make tea.
 - 1¹ Russian tea.

B Coffee.

- 1. History of bean.
- 2. General proportions.
 - 1¹ Boiled coffee.
 - 2¹ Filtered coffee.

C Cocoa and Chocolate.

- 1. History of bean.
- 2. Difference between cocoa and chocolate.
- 3. Preparation of each.

IX Vegetables.

- 1. Composition .
- 2. General rules for cooking.
- 3. Seasoning.
- 4. Practice work
 - 1¹ Boiled Carrots.
 - 2¹ Boiled Turnips.
 - 3¹ Boiled Beets.
 - 4¹ Boiled Onions
 - 5¹ Parsnips.
 - 6¹ White Sauce.

X Potatoes

1. History of plant.
2. Practice:
 - 1¹ Boiled Potatoes.
 - 2¹ Mashed "
 - 3¹ Riced "
 - 4¹ Baked "
 - 5¹ Creamed "
 - 6¹ Potatoe Cakes .
 - 7¹ Creamed Potatoes with Cheese.
 - 8¹ Potatoe Starch.

XI Starch.

1. Source and use to body.
2. Experiment with starch.
3. General rule for mixing "thickening" for gravies, sauces, etc. with flour or cornstarch.
4. Practice
 - 1¹ White Sauce.
 - 2¹ White or cream sauce of toast.
 - 3¹ Dry toast.
 - 4¹ H₂O "
 - 5¹ Milk "
 - 6¹ Toast water
 - 7¹ Arrowroot or Cornstarch gruel.
 - 8¹ Milk Porridge.

XII Cereals.

1. Source.
2. Composition.
3. Directions for cooking.
4. Practice
 - 1¹ Rolled Oats or Rolled Wheat.
 - 2¹ Coarse Oatmeal.
 - 3¹ Oatmeal gruel.

XIII Sugar.

1. Source.
2. Composition.
3. Effect of heat.
4. Practice work.
 - 1¹ Barley Candy.
 - 2¹ Peanut "
 - 3¹ Horehound Candy.
 - 4¹ Butter Taffy.
 - 5¹ Syrup for Cornballs.
 - 6¹ Cocconut Drops.

XV Practice work.

1. Cornstarch Moulds.
2. Moulded Corn Meal.
3. Caramel Sauce.
4. Apple Tapioca.

XVI Rice.

1. Source.
2. Composition.
3. Directions for cooking.
 - 1¹ Steamed Rice.
 - 2¹ Egg sauce.
 - 3¹ Boiled Rice
 - 4¹ Rice H₂O.
 - 5¹ Cream rice pudding.

XVII Macaroni.

1. Composition.
2. How manufactured.
3. Practice work.
 - 1¹ Boiled Macaroni.
 - 2¹ Baked "
 - 3¹ " " with tomato.
 - 4¹ " " " cheese.

XVIII Scalloped Dishes.

1. Materials used.
2. How prepared.
3. Practice work.
 - 1¹ Scalloped Apples.
 - 2¹ Nutmeg Sauce.
 - 3¹ Scalloped onions.
 - 4¹ " Tomatoes.
 - 5¹ Dried bread crumbs.
 - 6¹ Crust pudding.
 - 7¹ Hard Sauce.

XIX Milk.

1. Composition.
2. Value as food.
3. Pasteurized milk.
4. Practice work.
 - 1¹ Pennet Junket.
 - 2¹ Butter.
 - 3¹ Butter Balls.

XX Cheese.

1. Composition.
2. How made.
3. Value as food.
4. Practice work.
 - 1¹ Sour Milk Cheese.
 - 2¹ Creamed Cheese on Toast.
 - 3¹ Baked Crackers and Cheese.

XXI Eggs.

1. Composition.
2. How preserved.
3. Value as food.
4. Practice work.
 - 1¹ Eggnog.
 - 2¹ Egg Lemonade.
 - 3¹ Soft cooked eggs.
 - 4¹ Hard " "
 - 5¹ Poached eggs.
 - 6¹ Golden Rod eggs.
 - 7¹ Baked or Steamed Custard.
 - 8¹ Steamed eggs.
 - 9¹ Scrambled eggs.

XXII Meat.

1. Composition.
2. Source.
3. Value as food.
4. Cuts of meat.
5. Prices of cuts.

XXIII Methods of Cooking Meat.

1. Practice work.
 - 1¹ Beef tea.
 - 2¹ Mutton Broth.

XXIV Meat Cook in H₂O.

1. Practice work.
 - 1¹ Mutton or Lamb cooked in hot water.
 - 2¹ Gravy for Mutton.
 - 3¹ Meat Sauce.
 - 4¹ Rolled Beef.
 - 5¹ Stuffing for Rolled Beef.
 - 6¹ Gravy.

XXV Warmed-over Meats.

1. Preparation.
2. Practice work.
 - 1¹ Minced meat on Toast.
 - 2¹ Cottage Pie.
 - 3¹ Hash.
 - 4¹ Scalloped Meat.
 - 5¹ Meat Warmed in Gravy.

XXVI Broiling

1. Directions for broiling.
2. Cuts for Broiling.
3. Practice work.
 - 1¹ Broiled steak.
 - 2¹ Pan broiled steak.
 - 3¹ Hamburg steak.
 - 4¹ Beef juice.

XXVIII Stewing.

1. Directions.
2. Cuts for stewing.
3. Addition of vegetables as flavoring.
4. Dumplings.
5. Practice work.
 - 1¹ Beef stew.
 - 2¹ Dumplings.
 - 3¹ Veal or Lamb stew.
 - 4¹ Sauce for Veal or Lamb.

XXVIII Fish.

1. Composition.
2. Different fish.
3. Preparation.
4. Practice work.
 - 1¹ Drawn Butter Sauce.
 - 2¹ Creamed fish.
 - 3¹ Boiled fish.
 - 4¹ Fish Hash.
 - 5¹ Fish Chowder.
 - 6¹ Butter Dressing for Fish.

XXIX Bread.

1. Composition.
2. Use to body.
3. Yeast.
4. Preparation.
5. Practice work.
 - 1¹ Bread Quick Process.
 - 2¹ Bread Slow Process.
 - 3¹ Whole Wheat Bread.

XXX Vegetable Soups.

1. Materials used.
2. Preparation.
3. Practice.
 - 1¹ Vegetable Soup.
 - 2¹ Split Pea Soup.
 - 3¹ Baked Bean Soup.
 - 4¹ Potato Soup.
 - 5¹ Croutons.

XXXI Salads.

1. Materials.
2. Salad Dressings.
3. Practice work.
 - 1¹ French Dressing.
 - 2¹ Cooked Salad and Dressing.
 - 3¹ Cold Slaw.
 - 4¹ Water Lily Salad.

XXXIII Foods for Invalids.

1. Practice work.

- 1¹ Irish Moss Blanc Mange.
- 2¹ Irish Moss Lemonade.
- 3¹ Flax seed Tea.
- 4¹ To chip ice.
- 5¹ Orange Sunflower.
- 6¹ Lemonade.

XXXIII Freezing.

1. Proportions.

2. Directions.

3. Practice work.

- 1¹ Milk Sherbet.
- 2¹ Philadelphia Ice Cream.
- 3¹ Ice Cream for One.

The necessary equipment need not be expensive. In one grade a single room was fitted up for the class. The part which serves as a dining room is supplied with a table, china closet, and chairs; while another portion with its range, refrigerator, sink and supply table is the kitchen. In the center of the room is a U-shaped table for the pupils' work table. Such a laboratory in one of the Boston schools cost but \$100.00. \$100.00 per year was allowed for supplies.

The pupils like the work. A child enjoys seeing the result of his own labor. When they gain the scientific principles of cookery and sanitation, it raises them above the weary routine or drudgery, and thereby, elevates them to a higher plane. After studying the elements of food, their digestibility, value as heat and tissue producers, the changes that occur during cooking, the advantages of

attractive looking food, of plain living and of sanitary kitchen, utensils, and food, the child thoroughly realizes the effect of food upon the moral and social life of a people.

The girls learn that the cost of food is no measurement of nutritive value. Following is a chart of "The Pecuniary Economy of Some Foods at Given Prices" taken from "Foods and Dietetics" by Alice P. Norton, Assistant Professor of Home Economics of Chicago University-. (Page 84).

Food Material	Ten cents will buy Lbs.	Calories in 10¢ worth
Whole Milk 10¢ per qt.	2.0	500
Whole Milk 8¢ per qt.	2.8	600
Whole Milk 7¢ per qt.	2.14	700
Whole Milk 6¢ per qt.	3.5	800
Whole Milk 5¢ per qt.	4.0	900
Whole Milk 4¢ per qt.	5.0	1025
Skim Milk 3¢ per qt.	6.11	1010
Skim Milk 2¢ per qt.	10.	1600
Butter 24¢ per lb.	.7	800
Cheese 16¢ per lb.	.10	775
Beef round 12¢ per lb.	.13	500
Beef sirloin 18¢ per lb.	.9	450

Mutton loin 16¢ per lb.	.10	475
Pork salt 12¢ per lb.	.13	1010
Cod salt 6¢ per lb.	.9	585
Egg 22¢ per doz.	.11	450
Oysters 30¢ per qt.	.11	250
Potatoes 60¢ per bu.	10.	3575
Beans dried 8¢ per qt.	2.8	4000
Wheat flour 9¢ per qt.	9.5	6750

This spring here in our own college some experiments have been carried on which show the cost of food of a balanced diet. These experiments, however, were not carried on with a view of economy but are of an average cost. In one case, twelve girls doing regular college work, prepared their meals in the D. S. Hall for one month. They all gained weight. The average no. of calories consumed per person per day was 2514.18, the cost \$.3908 per person per day.

Here is their menu for the first week:

Monday.

Breakfast.

Bananas
Graham gems
Cream of wheat with figs
Bacon and soft cooked eggs.
Coffee
Cocoa

Lunch

Chicken and celery
salad.
Sandwiches
Oranges and bananas
Milk
Rolled waffers.

Dinner

Salpicon
 Roast Pork
 French Fried Potatoes
 Cabbage salad
 Strawberries with whipped cream
 Rolled waffers.

TuesdayBreakfast.

Apples
 Rice and Raisins
 Steak
 Creamed potatoes
 Biscuit
 Honey

Lunch

Lettuce Sandwiches
 Cold roast Pork
 Apple and celery salad
 Buns
 Cake

Dinner

Salpicon
 Veal chops
 Mashed potatoes
 Lettuce salad
 Radishes
 Lemon pie.

WednesdayBreakfast

Oranges
 Bacon and eggs
 Corn Cakes
 Popovers
 Cocoa
 Coffee

Lunch

Cheese souffle
 Creamed Potatoes
 Lettuce Salad
 Pickles
 Steamed Figs and
 Whipped Cream
 Cake

Dinner

Clear Soup
 Croutons
 Meat Pie
 French Fried Potatoes
 Creamed Asparagus
 Oriental Sherbert
 Kisses

ThursdayBreakfast

Pineapple
Shredded wheat
Soft cooked eggs
Baked potatoes
Toast

Lunch

Cream tomato soup
Scalloped eggs
Creamed potatoes
Radishes
Rolls
Pineapple ice
Cookies

Dinner

Meat Soup
Crisp Crackers
Roast
Mashed Potatoes
Cream Peas
Cabbage salad
Carmel Ice Cream

FridayBreakfast

Oranges
Oatmeal
Pork Steak
Fried Apples
Biscuit

Lunch

Roast Beef
Macaroni and tomato
Sauce
Lettuce and Egg Salad
Potato Chips
Rolls
Vanilla Ice Cream
and Strawberries

Dinner

Clear Vegetable Soup
Chicken Pie
Mashed Potatoes
Tomato Salad
Orange Sherbert

SaturdayBreakfast

Bananas
Cream of wheat and figs
Bacon and Soft Cooked Eggs
Fruit
Cookies

Lunch

Chicken salad
Sandwiches
Fruit
Cookies

Dinner

Salpicon
Fish
Mashed Potatoes
Lettuce Salad
Vanilla Ice Cream
with Strawberries
Cake

<u>Breakfast</u>	<u>Sunday</u> <u>Lunch</u>	<u>Dinner</u>
Oranges	Peanut Sandwiches	Salpicon
Hard Cooked Eggs	Salad Eggs	Roast Duck
Lettuce Sandwiches	Olives	Creamed Potatoes
Milk	Bananas	Cabbage Salad
	Cream	Fresh cucumbers
		Orange sponge
		Whipped Cream

Another experiment was carried on by the members of the Junior year Cooking class. The class worked in groups of two, and each couple served five meals to four people for one month. The cost of these meals for one week ranged from \$3.805 to \$5.361.

Here is a menu for one week costing \$3.805

(Menu here)

Breakfast

Cream of Wheat with Figs
Boiled Steak
Baked Potatoes
Baking Powder Biscuits
Coffee

Dinner

Nut Salad
Riced Salmon
Sweet Pickles
Glazed Sweet Potatoes
Cranberry Pie

Dinner

Luncheon

Cabbage Salad
Salmon Cakes
Macaroni and Cheese
Bread and Butter Sandwiches
Cocoa
Lemon Jellie
Cake

Dinner

Iced Pineapple
 Roast Beef
 Pan Gravy
 Potatoes
 Celery
 Bread and Butter
 Orange and apple Salad
 Philadelphia Ice Cream
 Coffee

Luncheon

Cheese Salad
 Scalloped Salmon
 Buttered Macaroni
 Cornmeal Muffins
 Coffee
 Fruit Sherbert
 Coffee

A common mistake has been the buying of expensive material when a cheaper one would be just as nutritious. The idea of health is to obtain complete nutriment, so we must learn what to eat. Years ago we frequently heard of people who were underfed dying, now we hear frequently of well fed people collapsing. Hospitals and large institutions now fully realize the importance of proper feeding. Mrs. Ellen H. Richards in her book "Chem. of Cooking and Cleaning" says that she believes mal-nutrition to be back of the desire for strong drink. If this education can fit the girls of our land to protect their homes from the drink habit, only, it is worth while.

Besides these benefits there is the psychological value. The work exercises and develops the faculties of the mind, especially attention, judgment and will. It calls for exactness and therefore inculcates habits of carefulness, industry, thoroughness and self-reliance.

The course also impresses it upon the girl that home work is honorable and fine work. If they know how to take care of the home, and to make it the foundation of all that is good, thereby making strong men and women, there will be no fear for the future of this grand nation of ours.

Bibliography

The Industrialist

American Kitchen Magazine

Ohio Agriculture Report 1888

Food and Dietetics by Norton

The Breadwinners

Outline of Domestic Science Course in Boston's Grade School

Data from Kansas State College Domestic Science Department.