



T H E S I S

on

Course of Study in Home Economics

For Chinese Middle Schools

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Irene Ho

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APPROVED:

[Redacted Signature]

Dean of the School of Home Economics.

[Redacted Signature]

Chairman of Committee on Graduate Study.

Sub. G

COURSE OF STUDY IN HOME ECONOMICS

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INTRODUCTION

Chinese tradition holds that it is woman's responsibility to be equipped for homemaking. This applied even up to twenty years ago. A careful training in spinning, sewing, cooking, managing servants, and other domestic affairs was given, but mental training was much neglected. Since the establishment of girl schools most woman students have gone to the other extreme. They study only courses studied by men and live in the dormitories through the entire schooling period except during vacations. The parents, too, are very appreciative of formal school education, and wish their daughters to focus their efforts on their studies. The result is that the training in household work is ignored by the majority of woman students in China. Therefore the formally educated housewives in China usually are less prepared for managing their households than the old fashioned ones. Within recent years many educators and parents have come to realize the dangers of ignoring the need for training of women for homes. Home Economics is the only course through which this educational defect may be partially remedied. Every college and school, therefore, should have this course provided, and apprenticeship in homemaking should still be recognized by parents as of importance in a girl's equipment for life.

A course of study in Home Economics for Chinese High Schools has been carefully sketched out in the following outline form. This may be used as a reference for teachers. It is not aimed for student's use.

The content of this outline should be arranged in Psychological order. For the convenience of the teacher, however, it is written in logical form. When the teacher presents this course she should adapt the material to the special needs of her class.

The arrangement of material in each subject is divided into three definite parts: the subject matter, suggested problems for students, and bibliography. The last one is listed at the end of each of the six main divisions.

This course includes Food, Clothing, Child Care, Household Sanitation, Household Decoration and Household Management. Because this is a new subject in the Chinese curriculum, it is temporarily planned as a two year course, at least six periods a week, in Senior middle schools after the students have a general conception of natural sciences.

Food is arranged for in the first semester, with Clothing in the second, for these two subjects are the prerequisites of the later ones. Child Care is placed in the third semester and the remaining three subjects

in the fourth. All these subjects are of such great importance that a longer time is needed. It is heartily hoped within a few years that this course may be recognized as a fundamental one for China.

In order to have a more valuable effect a Home Management House is very necessary to provide for the girls actual experience in managing a house, keeping household accounts and caring for children.

The material in this outline may seem too much for a two year course in some schools. The teacher, therefore, should use her own judgment and select the most important sections to give to her students in order to meet the greatest needs of her class.

- I. Introduction.
- II. Functions of Food.
- III. Food Requirement.
- IV. Factors to Consider in the Selection of Food.
- V. Care of Food in the Home.
- VI. Preparation of Food.
- VII. Serving.
- VIII. Digestion.
- IX. Food For the Sick.

I. Introduction.

A. Relation of food to health--Food is one of the most important necessities of life. Growth and maintenance of good health depend chiefly upon it. This problem is neglected by the Chinese too frequently. As a result many people are not in a healthy condition and undoubtedly this is a factor contributing to the high death rate. In Western countries, great attention is being paid to the study of foods, such as food preparation, food chemistry, nutrition, dietetics, etc., and the benefits to health are being recognized. The study of food, therefore, should be emphasized

in the schools and colleges in China.

B. Ways of judging good health.

1. Feeling.

- a. Sufficient ability to think clearly.
- b. Full of life.
- c. Not nervous.
- d. Do not tire very easily.

2. Appearance.

- a. Good color, with absence of any dark circles under eyes.
- b. Smooth and clean skin.
- c. Bright expression of eyes.
- d. Shining and smooth hair.

3. Functioning of body--All parts of the body are able to function properly.

4. Weight.

- a. Weight is normal for height and for age.

5. Good muscle tone.

C. Factors contributing to a state of good health.

1. Proper food.

- a. Correct amount.
- b. Adequate in variety to take care of all the needs of the body.
- c. Properly cooked.
- d. Nicely served.

2. Good habits of eating.

- a. Regularity of meals.
 - b. Chewing thoroughly.
 - c. No eating between meals, except fruit.
3. Psychological attitude in eating.
- a. Not eccentric in food habits.
 - b. Pleasant attitude at meal time.
4. Freedom from defects and diseases.
5. Proper hygiene.
- a. Clean and comfortable dress.
 - b. Good posture.
 - c. Good care of the body.
 - d. Proper amount and kind of exercise (be sure not to get over fatigued).
 - e. Sufficient sleep and rest.
 - f. Fresh air.
 - g. Regular habits of elimination.

II. Functions of Food.

- A. To supply energy--The human body is an ever working machine, for which the food is fuel. Carbohydrates, fats and proteins have the great common function of supplying the body with energy, (the power to do work).
1. Carbohydrates--Are starches and sugars.
 - a. Starch foods are cereals, such as wheat,

rice, cornmeal, and products made from them, potatoes and some dried vegetables.

b. Sugar foods are molasses, honey, and candies.

2. Fats--Are foods which contain animal fats or vegetable oils. Foods which are rich in fats are lard, butter, oils, fat meat, egg-yolk, milk, nuts, and beans.
 3. Proteins--Are foods which contain nitrogenous organic material. Egg-white, milk, lean meat, fish, legumes, and soy beans and its products are examples of protein-foods.
 4. Energy measurement--Since energy is easily transformed into heat, a heat unit, the calorie, has been adopted as the measure of energy. One calorie is the amount of heat required to raise one kilogram (2.2 pounds) of water one degree Centigrade, or one pound of water four degrees Fahrenheit.
 5. The fuel value of each food stuff is on the average as follows:
 - a. Protein--4 calories per gram.
 - b. Fat 9 " " "
 - c. Carbohydrate--4 calories per gram.
- B. To build body substance.
1. Foods which perform this function are:
 - a. Proteins--Are the essential material for the

protoplasm of all active cells, especially ^{8.}
for the making of muscle.

b. Ash constituents--Calcium, phosphorus, iron, sulphur and some other minerals are necessary elements for building the body tissues. Milk and milk products, green vegetables, fruits, eggs, and whole grains are the best sources of minerals.

c. To regulate body processes--The chief constituents of food in the regulation of body processes are the minerals, vitamins, and water. Vitamins are elements which play a very important part in growth, good health, and resistance against disease. Milk, green vegetables, fruits, and germinating grains are rich in vitamins.

Suggested Problems for Students.

1. Show the students as many foodstuffs as possible. Let students recognize the physical structure of these.
2. Work out a table of cost per unit of common foodstuffs as we purchase them.
3. Visit markets and groceries and note the methods of storing and handling foods.
4. Study the standard portions (S.P.) of food stuffs which are used daily.
 - a. The weight, measure, and cost of the S.P. of

each food as we purchase them.

- b. The weight, measure, and cost of the S.P. of each food as we eat them. (prepared by teacher with assistance of students.)

III. Food Requirement.

A. Energy requirement--An expenditure of energy by the body is continuous even during the time of entire rest.

1. Factors influencing energy requirement.

a. Muscular activity--One of the most important factors which raises food requirement.

Active people, therefore, require more food than quiet ones.

b. Regulation of body temperature.--Climate, housing, and clothing are factors influencing energy used. The output of heat may be regulated by two ways:

(1) The quantity of blood brought to the skin, which tends to control the loss of heat by physical regulation, radiation, conduction, and sweating.

(2) The rate of oxidation in the body in response to the stimulus of external cold. More food should be taken if the

rate of oxidation increases.

10.

c. Age and growth--Children must have a greater food requirement per unit of weight than adults because of the growth of the body and the high activity.

There are figures worked out by some scientists in America to show food requirements for energy. Of course these tables are not quite suited to Chinese, however; they may be used as references in suggesting amounts which we need.

Table I.

Average Daily Energy Requirement of Children Per Unit of Body Weight

Age in Years	Calories per pound.
Under 1	45
1 - 2	45-40
2 - 5	40-36
6 - 9	36-32
10-13	34-30
14-17	30-23

Table II.

Average Total Energy Requirement of Children
Calories per day

Age	Boys	Girls
Under 2	900--1200	900--1200
2 - 3	1000--1300	980--1280

Table II. (Cont'd)

11.

Average total Energy Requirement of Children
Calories per day

Age	Boys	Girls
3 - 4	1100-1400	1060-1360
4-5	1200-1500	1140-1440
5 -6	1300-1600	1220-1420
6 - 7	1400-1700	1300-1600
7 - 8	1500-1800	1380-1680
8 - 9	1600-1900	1460-1760
9 -10	1700-2000	1550-1850
10-11	1900-2200	1650-1950
11-12	2100-2400	1750-2050
12-13	2300-2700	1850-2150
13-14	2500-2900	1950-2250
14-15	2600-3100	2050-2350
15-16	2700-3300	2150-2450
16-17	2700-3400	2250-2550

Copied from Rose--Laboratory Handbook for Dietetics,
P.P. 13.

Table III.

Daily Energy Requirement per Pound of Body Weight
for Young and Middle Aged Adults--Approximate Av.

Muscular Activity	Calories per Pound.
Without Exercise..... ..	14 - 16
Light Exercise..... ..	16 - 18

Table III. (Cont'd)

Daily Energy Requirement per Pound of Body Weight

Muscular Activity	Calories per Pound.
Moderate Exercise.....	18 - 20
Hard Muscular Labor.....	20 - 23
Very Severe Labor.....	23 - 27

Copied from Rose--Laboratory Handbook for Dietetics PP 11.

B. Protein requirement.

1. Kinds of proteins--Some proteins support growth, some serve to maintain the body at constant weight, and some neither maintain the body nor support growth. It is necessary to choose carefully if the amount should be limited, especially in childhood. A brief study of proteins follows:

- a. Complete proteins--These are capable of maintaining adults and providing for normal growth of the young when used as sole protein food. Examples: proteins found in milk, eggs, soy beans and cereal grains. Animal proteins are better than vegetables.
- b. Partially incomplete proteins--These are capable of maintaining life but not of supporting growth in the young. Gliadin, one of the proteins of wheat, is an example

of this class.

c. Incomplete proteins--These are incapable either of maintaining life or of supporting growth. Zein, one of the proteins in corn, is an example.

2. The amount of protein needed--Standards have been worked out to show the amount of protein which should be taken.

a. Adult

(1) Ten to fifteen percent of total calories should be from protein.

(2) One gram of protein per kilogram of body weight.

(3) About .5 gram of protein per pound of body weight.

b. Child--In the child, the protein requirement should be higher, owing to the use for building body tissues. $2\frac{1}{2}$ grams of protein should be used for each kilogram at the time of most rapid growth.

c. Conclusion--If a sufficient amount of fat and starch is given to the person, a little less amount of protein may cause no harm. If an excess of carbohydrates or fat is added to the diet it may cause an actual storage of protein, because of protein-protecting power of carbohydrates and fats; protein being

used chiefly for the building up of the body. Muscular exercises do not affect the metabolism of protein; therefore it is not necessary to add more meat or egg for the hard workers.

Suggested Problems for Students.

1. List food materials which are rich in protein in your local markets and groceries.
2. Work out the measure or weight of common foods which will give 10 grams of protein.
3. List food materials containing complete, incomplete, and partially incomplete, in the proteins you eat daily. Do you get enough complete protein in your diet?
4. Record a day's meals served in your school or your home, and calculate the amount and kind of proteins present.
5. Plan a day's menu adequate in protein, including recipes.
6. Write a day's menu inadequate in protein.
7. State the reasons that animal protein is better than that in vegetables.
8. Is milk a good source of protein? If so, can you use it in your diet? How?
9. Is bean milk a good milk substitute in case no milk is supplied?

C. Fat and Carbohydrate requirement.

Assuming that from 10-15 percent of the total requirement of the body should be protein, the remainder of the daily supply will be provided from carbohydrates and fats. The amount of fat which can be digested varies with the individual. The amount needed for an adult to maintain the best health should not be less than 75 grams per day. The rest of the calories will be from carbohydrates.

Suggested Problems for Students.

1. List all kinds of fats and oils in your local markets, and the source of each one of them.
2. Write the foods rich in fat found in your local markets and groceries.
3. Is the amount of fat you eat sufficient for your need?
4. Why is butter better than other fats?
5. Is there any danger of eating too much fat?
6. What is the amount needed for yourself?
7. List carbohydrate foods and study their sources.
8. Work out 100 calorie portions of starchy and sweet foods as you purchase them ordinarily.
9. Work out the measure or weight of 100 calorie portion of starchy and sweet foods as you eat them.

10. What are the cheap sources of carbohydrates?
11. Why should candies be used in moderation?
12. How much carbohydrate is required for yourself?

D. Mineral Requirement--For body building and body regulating, ash constituents are important. Calcium, phosphorus, and iron are specially necessary to be studied because they are not always supplied in the ordinary diet.

1. Calcium or lime.

a. Functions.

- (1) Building hard tissues of the body, such as bones and teeth.
- (2) Necessary for coagulation of blood.
- (3) Normal action of heart.

b. Results of lack of calcium.

- (1) A factor in rickets.
- (2) Interferes with growth and formation of teeth.

c. Amount required.

- (1) For an adult .67 gm of Ca or 1 gm of CaO daily.
- (2) For a child 1 gm. Ca daily.

d. Foods high in Ca--Milk, eggs, peas, beans, cabbage, egg plant, cucumbers, beets, radishes, and whole grain cereals.

e. Food low in Ca--Meat, potatoes, and finely polished grains.

2. Phosphorus.

a. Functions.

- (1) Cell multiplication.
- (2) Reproduction.
- (3) Transference of nerve stimuli.
- (4) Neutrality.
- (5) Starts enzyme action, etc.

b. Foods rich in Phosphorus.--Egg yolk, meats, fish, clams, oysters, milk, cheese, spinach, tomatoes, turnips, peppers (green), peas, eggplant, cucumber, carrots, asparagus, and entire cereals.

c. Amount required.

- (1) 1.44 gms P. or 3.30 gms P_2O_5 daily.

3. Iron.

a. Functions.

- (1) Essential element of hemoglobin.
- (2) Secretion of glands.
- (3) Reproduction.

b. Foods rich in Fe--Egg yolk, clams, oysters, asparagus, cabbage, celery, green peppers, squash, radish, beans, meats, molasses, nuts, fruits, and raisins.

c. Foods poor in Fe--Sugar, starchy foods,
fats, butter, lard and fatty meat.

d. Amount required.

(1) For adult man .015 gm. daily.

(2) For pregnant woman and child .018 gm. daily.

Suggested Problems for Students.

1. List the foods in your local market which are rich in phosphorus.
2. List the foods in your local market which are rich in calcium.
3. List the foods in your local market which are rich in iron.
4. Analyze a day's meals served in your school and see if:
 - a. Phosphorus is adequate.
 - b. Calcium is adequate.
 - c. Iron is adequate.
5. Write a day's menu for your school adequate in
 - a. Phosphorus.
 - b. Calcium.
 - c. Iron.
6. What foods are rich in all three of these?
7. What are the results if the diet is lacking in:
 - a. Phosphorus.
 - b. Calcium.

c. Iron.

8. Why does finely polished rice have less nutritive value?
9. State the value of whole grains and green leafy vegetables.
10. Why is milk so highly recommended by Western countries?

E. Vitamin requirement--There are four kinds of vitamins which have been discovered and possibly a fifth, vitamin E.

1. Vitamin A.

a. Functions.

- (1) Promotes growth.
- (2) Prevents ophthalmia.
- (3) Aids in resistance to diseases.
- (4) May be a factor in nasal disorders.

b. Physical and chemical properties.

- (1) Fairly stable toward heat, is influenced by oxidation, more stable than vitamin C, but less stable than vitamin B.
- (2) Is not affected by acids and alkalies.
- (3) Readily soluble in fats.

c. Foods rich in vitamin A.

Egg yolk, whole milk, butter, cod-liver oil, cabbage, carrots, sweet potatoes, and spinach, and other green leafy vegetables.

d. Foods poor in vitamin A.

Lard, vegetable oils, lean meat, fine cereals,
and their products.

2. Vitamin B.

a. Functions.

- (1) Aids in resistance to disease.
- (2) Prevents beri beri in man and polyneuritis
in fowls.
- (3) Aids in promoting good health.
- (4) Helps the appetite.
- (5) Is a factor in some digestive disturbances.

b. Physical and chemical properties.

- (1) Stable at ordinary cooking temperature
but value is decreased by the use of
the pressure cooker.
- (2) Soluble in water.
- (3) More stable in acid than in alkalis.

c. Foods rich in vitamin B.

Yeast, eggs, germ of grains, vegetables,
fruits, seeds, and nuts. This vitamin is
more widely distributed than the others.

d. Foods poor in vitamin B.

Oils, and refined cereals like polished
rice.

3. Vitamin C.

a. Functions.

- (1) Prevents scurvy.
- (2) Aids in good health.
- (3) Affects the gums and tooth structure.

b. Physical and chemical properties.

- (1) Very unstable and is destroyed by oxidation, drying, heat, and alkali, but is more stable in acid, hence canned and cooked tomatoes contain it.

- (2) Soluble in water.

c. Foods rich in vitamin C.

- (1) Fresh fruits, such as oranges, lemons, tomatoes, etc.
- (2) Raw green leafy vegetables, such as cabbage, spinach, etc.
- (3) Germinating grains.

d. Foods poor in vitamin C.

Meats, cereals, oils, and fats, and nearly all cooked foods.

4. Vitamin D.

a. Function.

Prevents rickets, so it is called anti-richitic vitamin. Direct sunlight and ultra violet rays have the function.

b. Sources.

Cod liver oil is an excellent source.

Ordinary foods, except butter and egg yolk, do not contain it, and it is probable that they are less effective than is cod liver oil.

5. Vitamin E.

Researches of Evans and Bishop of the University of California and some other scientists have suggested the existence of a vitamin associated with reproduction.

- a. Function--Sterile rats will reproduce when given foods possessing vitamin E.
- b. Physical and chemical properties.
 - (1) Stable to heat, light, air and oxidation.
 - (2) Soluble in fat, and almost insoluble in water.
- c. Foods rich in vitamin E.

Whole milk powder, whole wheat or wheat germs and some other whole grain cereals, lean meat, leaves of lettuce, peas, and tea.
- d. Foods which have been tested and have been found poor in vitamin E. Cod liver oil and milk fat.

Suggested Problems for Students.

1. Check up on foods which are rich in:
 - a. Vitamin A.

- b. Vitamin B.
 - c. Vitamin C.
2. Plan a day's menu adequate in:
- a. Vitamin A.
 - b. Vitamin B.
 - c. Vitamin C.
 - d. All three vitamins.
3. Analyze a day's meals served in your school and see whether they are adequate in:
- a. Vitamin A.
 - b. Vitamin B.
 - c. Vitamin C.
4. Why are raw vegetables and raw fruits necessary?
5. State the reasons that milk and milk products play an important part in the diet.

IV. Factors to Consider in the Selection of Food.

A. Quality of food.

1. Sufficient digestible organic food-stuffs to supply the body's needs for energy, usually measured in terms of calories.
2. Enough protein of suitable sorts to meet all needs for maintaining the body and growing.
3. Adequate amounts and proper proportions of the

mineral elements or ash constituents of the food.

4. Enough of at least three kinds of vitamins.
5. Bulky foods should be taken to aid in the elimination of waste.

B. Economy of food.

1. Factors in the market cost of food.

- a. The cost of production--The amount of money spent for labor and price of material required to produce it.
- b. The distribution--The amount of money spent for transportation, packing, handling, wrapping, and delivery.
- c. The esthetic appeal--The size and shape, color, flavor, and texture.
- d. The preparation--Cost of fuel, loss in preparation, and waste in digestion.
- e. Season--The price of the food in season compared with out of season.

2. Comparison of costs of foods having same nutritive value.

C. Menu planning.

1. Food should suit the age of the members of the family.
2. Food combinations:

- a. Concentrated food should be served with something which will serve to dilute them, as meat and green vegetables, and thin cake and bean sprout, etc.
 - b. Foods which stimulate digestive juices should precede those which are negative or tend to retard the flow of digestive juices. For example soup precedes other foods and meat is served near the beginning of the meal.
 - c. Foods which promote appetite are placed early in the meal; as fresh fruit for breakfast. Highly spiced dishes or pickles may irritate the delicate walls of the alimentary tract and should be used sparingly.
4. Well-balanced food should be served, because the body needs various foods. Both fruits and green vegetables ought to be served adequately; each one of them should be eaten twice a day.
- D. Marketing of food.
1. Grade of food.
 - a. Fresh fruits.
 - (1) Well matured and sound.
 - (2) Free from blemish.
 - (3) Uniform in size and shape.
 - (4) Good color.

(5) Fresh, clean, and well packed.

b. Meat--The appearance of:

(1) Beef--should be firm and fine-grained in texture, bright red color and well mottled with fat which should be firm and yellowish.

(2) Veal--should be of a pinkish color and fine-grained, and the fat should be firm and white.

(3) Mutton--should be bright pink color and fine-grained, and the fat should be firm and flaky.

(4) Pork--The skin should be white and clear, the flesh should be of a pinkish tint.

(5) Chicken and duck--should be soft fat, a smooth skin, and a soft cartilage at the end of the breast bone.

c. Green vegetables.

(1) Buy green vegetables as direct from the garden as possible.

(2) Select vegetables in season. Vegetables out of season do not have the fullest flavor and are very expensive.

(3) See that they are crisp and fresh.

Suggested Problems for Students.

1. Plan a day's menu for eight girls giving correct amounts of the right kinds of food at the lowest cost.
2. Have the girls purchase food for meals planned above.
3. Plan some good combinations for dinners.
4. Plan a day's meals for the school and emphasize the use of the cheaper foods instead of the more expensive ones in each group.
5. Show how the cost of meals may be lessened by the substitution of other foods for meat.
6. Estimate the weight and cost of the food from each of the groups which is actually eaten by each girl in a day.

V. Care of Food in the Home.

A. Meat.

1. Should be removed from the wrapping paper as soon as it comes from the market, since the paper absorbs some of the juices.
2. Before the meat is cooked, it should be wiped with a cloth wrung out of cold water.
3. Meat should never be allowed to stand in a pan of cold water, since the juices will be

drawn out.

4. Meat should be kept cool in a cellar or a well.
5. When canned meats are opened, they should be moved out as soon as possible.
6. Fish should be covered so that its odor may not affect other food.

B. Fruits.

1. Remove fruit from sacks and keep it in a cool place uncovered.
2. Wash or wipe all fruit when it comes from the market. Rinse berries quickly and drain.
3. Change position of fruit occasionally, as decomposition begins earlier where fruit presses together.
4. Do not soak fruit, as soaking destroys its flavor.
5. Pare peaches just before serving, for they discolor quickly.
6. Dried fruit should be kept in a tight container to guard against the dangers of dust and vermin.
7. Canned fruits should be removed when the cans are opened--vegetables should be treated the same.

C. Vegetables.

1. Wash vegetables in cold water thoroughly using

a small brush for this purpose.

2. Discard any wilted and discolored portions.
3. Drain celery, lettuce, water cress, and radishes, and place in a wet cloth bag in the ice box until ready to use.
4. If greens are wilted, let them soak in cold water to freshen them.

D. Cereals.

1. Remove from the bag to a tight container.
2. Never put it in the store room within a bag, because rats may spoil it.

E. Left-over food.

1. Cover the container and put in the ice box or other cool place.

Suggested Problems for Students.

1. What are the essentials in caring for food in the house?
2. Describe the care of "left overs" and garbage in your school. Are you satisfied with the method used in your school kitchen?
3. Why is a refrigerator or an ice box necessary?
4. Criticize the care of your school kitchen. What are your suggestions?
5. Why should canned food be emptied as soon as it has been opened?

6. What are the dangers if the foodstuffs are not properly cared for?
7. Do you have any suggestions concerning the cleanliness of the school kitchen and the clothes of the cooks and waiters?
8. How could you improve the condition of the kitchen of your home?

VI. Preparation of Food.

- A. Cereals--They are foods of great importance and should have a regular place in the daily meals.
1. Kinds--There are many kinds of cereals. The ones most commonly used are rice, cornmeal, wheat meal, and small grains.
 2. Composition--They contain all the foodstuffs; a large quantity of starch, a considerable portion of protein and minerals, if whole grain is used and the germ of the grain contains some vitamins.
 3. Principle of cooking--The cellulose in cereals is coarse, but different cereals vary in the quantity and coarseness of the fibre. Different cereals, therefore, require different lengths of time for cooking. The general rules of cooking:

- a. Softening of the fibre by long-continued low temperature with a supply of water present.
- b. Complete opening of the starch granules by the boiling water temperature.
- c. Softening of the fibre of the cereal makes the protein available to use.

B. Meat.

1. Sources--The flesh of all animals used for food, as beef, veal, mutton, pork, fish, poultry, and game.
2. Structure--Meat consists of muscles, connective tissue, bone, and fat.
3. Composition--The quantity of protein is about the same in all meat. Fats in meat vary widely in amount in cuts of same animals and in different animals; older animals have more fat than young ones. Pork contains much more fat than other meats. Mineral matter is less than one percent. Water and bone make up the weight of the meat. The approximate composition of meat:

protein	20%
fat	2 - 5%
ash matter	1%
water	70-75%

4. Cuts of meat.

- a. Tender cuts--The tender cuts are the ribs and loin, because these muscles are less used. The unexercised muscles of the young animal give a softer meat.
- b. Tough cuts--The tough cuts come from the neck and legs, and the toughness decreases as the cuts approach the leg portions. The most exercised mature animal furnishes the tough meat, because exercise strengthens the muscles.

5. Principle of cooking.

- a. The effect of heat upon meat.
 - (1) The fat of meat is melted by heat.
 - (2) The meat shrinks and hardens with intense heat.
 - (3) The meat softens at a low temperature which is below the boiling point of water.
- b. Tender cuts--The juices should be retained, therefore a high temperature coagulating the meat albumin and hardening the fibre of the surface should be used. Broiling, and roasting are good methods.
- c. Tough cuts--Boiling in water, stewing, and pot roasting are the best methods for cooking tough cuts; so that the texture

of the meat may be soft, and the taste better.

C. Vegetables--There are three general classes of vegetables; green, or leafy vegetables, starchy of root vegetables, and legumes.

1. Composition of vegetables.

a. Green vegetables.

(1) Cellulose--All vegetables are made up largely of a network of woody fiber which forms the framework of the plant. The cellulose is much coarser and harder in some vegetables than in others and in older than in younger.

(2) Ash constituents--Mineral salts, especially calcium, iron, and phosphorus exist abundantly in green vegetables.

(3) Vitamin--Green vegetables are rich in all classes of vitamins, especially in vitamin C.

(4) Water--There is a large amount of water in green vegetables, as high as 70-90%.

b. Starchy vegetables--contain a large amount of starch together with much cellulose, mineral, salt, some vitamins and water.

c. Legumes--are high in protein and starch and low in water content.

2. Principles of cooking.

a. Green vegetables.

- (1) The time for cooking vegetables depends upon the quantity and coarseness of the cellulose fibre. A short period of time is desirable to preserve color, flavor, and texture.
- (2) Save all water in which mild flavored vegetables are cooked and use in some way. Discard stock and water in which strong flavored vegetables are cooked.
- (3) Acid in the water makes red vegetables more red, and alkali water makes green vegetables more green.

b. Starchy vegetables.

- (1) Let wilted ones stand in cold water an hour before cooking to restore some of their moisture. Young vegetables are best pared just before cooking.
- (2) Remove the eyes and dark spots before cooking.
- (3) Pare vegetables thinly, if pared, because mineral salts exist in the layers directly under the skin.
- (4) Cook vegetables having strong odors uncovered.

(5) Best method is baking when possible.

c. Legumes.

(1) Soak dried peas, beans, and lentils in water for several hours.

(2) Cook them a long time at moderate heat to soften the fiber.

D. Fruits.

Fruits are valuable as foods since they contain minerals that act as body regulators; help to purify the blood, and create an appetite for other food; give cellulose for bulk; and vitamins (especially vitamin C). They should be served as they are, fresh and raw daily.

The principles of cooking:

1. Large, watery, and whole fruit, as peaches, apples, or pears may be baked.
2. Small fruits or large ones cut into pieces and berries may be stewed.
3. Cook fruits in enameled granite cooking dishes, since the fruit acids act upon metal vessels, forming harmful substances.
4. Cook fruits at a simmering temperature in uncovered vessels in order to better preserve their shape.

Suggested Problems for Students.

1. What are the effects of heat upon food stuffs?
2. Point out some methods now in use which should be modified in cooking the following:
 - a. Rice.
 - b. Chicken
 - c. Duck.
 - d. Egg.
 - e. Pork.
 - f. Cabbage.
 - g. Beef.
3. Why should we not discard the water in which a vegetable has been boiled?
4. State the reasons that pork should be thoroughly boiled.
5. Visit the meat market and study the cuts of meat.
6. Learn to prepare some of the foods most commonly used, such as rice, cabbage, spinach and noodles.

VII. Serving

The atmosphere of the dining room is largely affected by the art of serving. This point is generally overlooked by the majority of Chinese. For many times a formal feast is given and many courses are served,

but the decoration of the dining room and the table, and the utensils used on the table are not pleasing to the esthetic sense. The feeling and appetite of the people may be depressed. The way of serving undoubtedly needs to be improved. However, it is an easy matter to pass from simple to extravagant. Be sure that the persons who are trying to improve the esthetic points in arranging and equipping the dining room keep the beauty of simplicity and economy in mind.

- A. Table--The table should be firm, and large enough to accommodate the people comfortably. When occasion demands a large board the table should be extended. The top should be oiled or varnished so that it will be easily washed. A thick cloth or similar thing should be used to protect it.
- B. Table cloth and napkins--A simply and neatly made table cloth should be used. The material may be linen or cotton, preferably the former. The napkins should match the tablecloth,
- C. Utensils used on the table--Plates, dishes, spoons, and chopsticks should be systematically put on the table. A vase of fresh flowers may be put in the center of the table.
- D. Serving--Each dish should be thoroughly done but not overcooked. All hot dishes should be hot,

and cold dishes cold. The number of courses ought to be reduced, but should include enough for everyday comfort and health.

Suggested Problems for Students.

1. Are you satisfied with the serving in your school and home? Why?
2. What points in arranging and serving do you want to improve? How?
3. Would the people think you are foreignized if you want to use tablecloths and napkins? If so, how do you explain to them.
4. Try to arrange the dining room and table decoration for a formal feast, and then actually do the serving.
5. Why should the esthetic points be emphasized?
6. Discuss different methods in formal service.
7. How may the guest be made more comfortable?
8. What are the important points in table setting?

VIII. Digestion.

A. Mouth.

1. Functions.

a. Mechanical.

- (1) Breaks and grinds up coarse foods and

softens or possibly dissolves them.

(2) Mixes foods with saliva.

(3) Helps in the flow of digestive juices.

b. Chemical--Starch is slightly changed to maltose to some extent by the action of salivary secretion.

2. Advantages in thorough mastication.

a. Gives a good effect on teeth and muscular tone of digestive tract.

b. Gives a better chance for saliva to act.

c. Makes digestion easier, and hard particles are being thoroughly chewed; therefore no discomfort may be caused in the stomach.

d. Aids in stimulating the flow of digestive juices.

e. Leads to eating slower and less in case of persons who wish to reduce the amount eaten.

B. Stomach.

1. Functions.

a. The stomach is the reservoir into which food goes from the mouth.

b. The digestion of starchy food continues in the receiving and for some time till in contact with the acid gastric juices.

c. Food is thoroughly mixed with gastric juice.

Peristaltic waves begin in the middle region and travel toward the pylorus end where food passes out into the intestine.

- d. Protein is partially digested; the compound protein is converted into simpler ones by the reaction of an enzyme pepsin in the gastric juice.
 - e. Germs in the food are destroyed by the germicidal action of hydrochloric acid secreted from the wall of the stomach.
 - f. Emulsified fats are partially digested.
2. The time the foods stay in the stomach is affected by:
- a. The length of the interval of meals.
 - b. The amount of food.
 - c. The character of food--Some food may disappear in from 1 to 4 hours and others may take 6 to 7 hours.
 - (1) Protein food stays longer in the stomach than carbohydrates, because protein may combine with the free acid in gastric juice and delay the evacuation.
 - (2) Fat remains longer than protein--Fat tends to retard both the motility of the stomach and the secretion of the acid gastric juice.

- (3) Mixtures of fat and protein leave the stomach more slowly together than either alone.

3. Ways of making foods easy to digest.

a. Fats.

- (1) Avoid high temperature.
- (2) Avoid excess fat in diet.
- (3) Avoid soaking other foods in fats.
- (4) Emulsified fats may be used more.

b. Proteins.

- (1) Avoid excess of protein.
- (2) Avoid cooking at too high temperature.

c. Carbohydrates.

- (1) Cook starch till grains are broken down if you wish to hasten digestion.
- (2) Foods that have a lot of cellulose should be well cooked.

C. Small intestine.

1. Functions.

- a. Mechanical--When the food, liquid chyme, is projected into the upper part of the small intestine from the pylorus, the mass becomes segmented by contractions of the intestinal walls. The effects on the food are:

- (1) A further mixing of food and digestive juices.

(2) The bringing of the digested food into contact with the absorbing membrane.

b. Chemical--There are three kinds of digestive juices which pour into the small intestine.

(1) Pancreatic juice--contains three important enzymes.

(a) Converts starch to maltose.

(b) Splits fats to fatty acid and glycerol.

(c) Splits proteins to simple proteins, peptones, peptids, and amino acids.

(2) Bile.

(a) Accelerates the action of pancreatic juice on digesting fat.

(b) On the account of alkaline reaction it increases the solubility of the fatty acids.

(c) Diminishes the surface tension between watery and oily fluids.

(3) Intestinal juice.

(a) Converts sugars into the simplest form, glucose.

(b) Splits protein to the simplest form, amino acids.

2. The length of time the food stays in the small intestine is from 9 to 23 hours.

D. Large intestine.

1. Functions.

- a. The walls of the large intestine furnish an alkaline secretion which further aids the completion of digestion.
- b. Water is absorbed.
- c. Residual material becomes more solid and ready to be excreted.

E. Appetite and Hunger.

1. Hunger--Hunger is the fundamental urge toward food. This is not merely due to the emptiness of the stomach but also due to the contractions of stomach muscles. These contractions are periodic, rhythmic and produce^a painful feeling. The intensity of contractions is more vigorous in youth than that in aged persons; well nourished than malnourished, active than sedentary, healthy than sick people.
2. Appetite--Appetite is caused by taste, smell, and sometimes even thought of food relating to the memory of previous pleasant sensations. It is not periodic, and it may be had without hunger.
 - a. Significance of appetite--Appetite is not absolutely essential but is desirable. It is an indication of healthy conditions

of the digestive tract.

b. Ways to train the appetite of the child.

- (1) It should be trained from the beginning.
- (2) Meals should be served regularly.
- (3) Good quality of food should be given.
- (4) Older people should not give a hint
 showing either their likes or dislikes.
- (5) Good health habits established.
- (6) Avoidance of constipation.

c. Methods of inducing appetite--It is necessary to induce in case of chronic illness or wrong food habits.

- (1) Mental attitude toward food should be cultivated by: a general knowledge concerning food which should be eaten.
- (2) Good food habits should be created.
 - (a) Regularity.
 - (b) Not eat between meals.
- (3) Attention should be paid to general health habits, as sleeping in fresh air, suitable exercise, etc.
- (4) Palatable food should be served.
- (5) Dining room should be pleasant and attractive.
- (6) Table conversation should be cheerful.

d. Ways of reducing appetite--It should be reduced in case of certain diseases, wrong habits, or too much overweight. Appetite may be reduced by the methods which follow:

- (1) Eat more bulky and watery foods.
- (2) Adjust the amount by cutting down gradually.
- (3) Remove the temptation of stimulating the appetite, such as thinking of or seeing palatable food.

Suggested Problems for Students

1. Why should you chew the food thoroughly?
2. The relation between the condition of teeth and health. How do you take care of your teeth.
3. Is there any advantage in slow eating? What are the advantages?
4. Why should you have a happy attitude during meal time?
5. Why are table manners necessary?
6. Point out some foods which are hard to digest. How do you improve them?
7. Prepare a meal in courses which are easy to digest, palatable and economical.
8. Describe the methods of taking care of the digestive tract.

IX. Food for the Sick.

Food is often more important than medicine in illness. The intelligent preparation of diet and attractive serving in the treatment of disease are very necessary.

- A. Quantity of food should be given--The quantity of food required must be varied according to the nature of the disease. In severe cases, the doctor's advice should be acquired.
- B. Kinds of diet--In feeding the sick, four kinds of diets are recognized outside the restricted dietaries in diseases due to improper metabolism, such as diabetes, kidney diseases, etc.
 - 1. Liquid diet--Includes milk, ice cream, animal broths in which the yolk of eggs may be put, beef juice, strained gruels, rice water, bean milk, and other fluid foods. Tea and coffee should be avoided.
 - 2. Soft diet--Includes, soft-cooked eggs, ice cream, apple sauce, cereals, custards, potatoes, bean curd, etc.
 - 3. Light diet--Includes soft-cooked eggs, custard, short fibered meats, such as chicken and boiled fish, fresh tomato and some green vegetables, etc.

4. Full diet--Consists of anything the patient desires that is not indigestible. Soups, meats, fish, eggs, cereals, and green vegetables are all foods which may be taken, but boiled tough cabbage and dried beans should be avoided.
- C. Special diets--Are ordered by a physician, for special cases, and they must not be given without his order.
- D. Rules for serving invalids.
1. All food should be cooked carefully and thoroughly.
 2. Meals should be served punctually.
 3. Dishes should be covered in transit to the bedside.
 4. Hot food should be served hot and cold should be served cold.
 5. The tray should be attractive.
 6. The room should be well ventilated and the patient should be comfortable while she is eating.
 7. Before serving, the face and hands of the patient should be washed.
 8. Be cheerful and ready to attend the wants of the patient while the meal is being served.
 9. Never ask the sick directly what she likes or dislikes.

Suggested Problems for Students.

1. Plan a menu for a soft diet which is palatable and is in about 2000 calories.
2. Plan a menu for a person who has trouble with digestion in the stomach.

References.

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Winchell--Food Facts for Every Day.

Wellman--Food Planning and Preparation.

Bailey--Foods Preparation and Serving.

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Kinne and Cabley--Food and Household Management.

Sansum--Normal Diet.

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CLOTHINGOutline.

- I. Importance of Clothing Study
- II. Design
- III. Color
- IV. Textiles
- V. Construction
- VI. Hygiene of Clothing
- VII. Economy in Dress
- VIII. Hair Arrangement
- IX. Laundering

- I. The Importance of Clothing Study

- A. Personality and Clothing--The amount of education one has obtained, the occupation one has, the esthetic taste one possesses and the social standard, wealth and rank, are often indicated by the clothes one wears.
- B. Economics and Clothing--The fashion of the clothes changes very rapidly in many countries and is a growing problem in China. The garments which are very up-to-date this year, sometimes, are not worn the next year. The tragedy of discarding the fairly new clothes is recognized as a cause of poverty.

For remedying this waste a knowledge of suitable and graceful dress is necessary.

- C. Hygiene and Clothing--The importance of hygienic clothes is ignored by the majority of people. As a result many physical defects are caused by incorrect clothes; therefore clothes should meet both esthetic and hygienic functions.
- D. Beauty and clothing--The good points of the appearance may be emphasized by the well designed clothes, and bad points may be ignored. For the sake of being beautiful the study of clothing is very essential.

Suggested Problems for Students

1. Do you frequently change the style of your dress?
Why?
2. Have you ever suffered by the rapid changes of fashion?
3. If your parents gave you more money for purchasing clothes do you think that you would be a better dressed girl?
4. What percent of your personal income is spent on clothes?
5. Have you ever seen a well dressed woman? Why do you think so?
6. Are you satisfied with present fashion? Why?
7. Why is a study of clothes necessary for young girls?

8. How can you judge a woman's social position and experience by her clothes?

II. Design

Design is the pleasing and orderly arrangement of material in accordance with a carefully worked out plan.

A. Principles of design.

1. Proportion--Proportion is the pleasing relationship of all the parts of an object to the whole and to each other. It may be obtained by:
 - a. Planning the object as a whole.
 - b. Creating the parts in relation to the main object.
 - c. Designing the type of dress suited to the wearer, so that an appearance of harmony and unity will result, and the defect of body proportion will be concealed.
2. Balance--Balance is the principle by which a sense of rest is obtained. The types of balance:
 - a. Symmetrical or formal balance--The parts of the clothing are arranged exactly alike on both sides of the axis; for example, the collar and sleeves on both sides, taking the vertical line of the body as the axis.
 - b. Occult or informal balance--The parts of clothing are arranged to satisfy the eye

through the equal value in the design of both sides, even though the designs of the two sides are not exactly alike.

3. Dominant interest--The face is the most attractive part of the body. It should be emphasized as the center of interest. All other parts are subordinated to the face. The eye should be led to the face by lines of the clothes.

4. Rhythm--By rhythmic arrangement the eye is led from one part of the design to another.

B. The basis of design in dress.

1. Human figure.

a. Principle parts of the body are the head, the trunk, the arms, and the legs.

b. The joints of the body are the neck, the shoulders, the elbows, the waist, the hips, and the knees.

c. The ideal proportion of the standard figure
(American mature woman)

(1) Height

Whole height	8 heads
Length of the head	1 head
Chin to breastbone	1/3 head
Breastbone to waistline	1 2/3 heads
Waistline to floor	5 heads

(2) Breadth

Neck	1/2 head
Shoulder	1 2/3 heads
Bust across fullest part	1 1/2 heads
Waist	1 1/4 heads
Hips across widest part	1 3/4 heads

d. The minor defects of the body may be compensated through careful designing.

2. Age.

3. Occupation.

4. Personality--The types of women may be classified into ten kinds.

- a. Junoesque type--She should avoid all but abstract, classical, and conventional design. Bright and rich colored materials are becoming to her.
- b. Athletic type--Her clothes should be simply constructed, and should allow freedom of movement. The lines should be straight.
- c. Comfortable type--She should avoid ornate designs and decorations.
- d. Doll type--She should wear simple clothes which will, however, express her buoyancy. Soft materials in delicate colors are becoming to her.
- e. Home type--She should wear calm and simple lines. Ruffles especially should be avoided.

- f. Boyish type--No elaborated ornaments or lace should be used.
- g. Elfin type--Clothes should be simple in form, but suited to work and movement.
- h. Willowy type--Should strive most of all for graceful lines.
- i. Legal type--She should wear sweeping and expensive materials, but should avoid "fluffy" designs.
- j. Mysterious type--Her clothes should avoid any suggestion of the elfin "sweetness". They should be neatly designed and tidy. Rich materials in subdued color are the best.

Suggested Problems for Students

1. Are there any differences between the standard of adult and adolescent figure?
2. Measure your own body and see how many heads your figure is.
3. Which type is your figure most like?
4. Study the type of one of your class-mates.
5. Does your figure have minor defects? What are they, and can you correct some of them?
6. Try different sizes of skirts and blouses before a full length mirror and decide which one is becoming to you, and why?

7. List the characteristics of the present fashion, and analyze which points are good and which are bad. Why?
8. How do you modify the present fashion to make it becoming to you and hygienic as well?
9. Cut an underblouse for your own figure, in order to emphasize the good points and to conceal the defects. (This blouse may be constructed by the students.)
10. Criticise your own blouse and skirt. Are they in good proportion and well balanced? How could you modify them?

III. Color

A. Importance of studying colors.

1. It helps the person who wishes to be well-dressed, because certain colors are becoming to certain persons.
2. It helps the person who designs garments for others.
3. It helps the wearer and beholders to satisfy their sense of beauty.

B. Classification of colors (Munsell system of Color)

1. Primary colors--The primary colors are red, yellow, and blue.

2. Secondary colors--The secondary colors are produced by combining or mixing two primary colors; such as orange, green, violet, and purple.

Red and Blue -- Purple

Red and Yellow--Orange

Yellow and Blue--Green

3. Tertiary colors--The tertiary colors are produced by combining or mixing secondary colors.

C. Quality of colors.

1. Hue--Hue is the quality which distinguishes one color from another.
2. Value--It is the quality which denotes the amount of darkness and of lightness.
3. Intensity--It is the quality which represents the purity or the strength of the color.

D. Characteristics of colors.

1. Warm colors--A warm color is a color which makes the person look warmer; such as red, orange, and yellow.
2. Cold colors--Blue, blue-violet, or blue-green are cold colors.
3. Silent colors--A silent color or retiring color which is inconspicuous; such as seal-brown, bottle-green, plum, gray, and tan.
4. Aggressive colors--Any intense color which makes the wearer more lively is an aggressive color.

E. Harmonies of colors--The combination of colors which is pleasing to the eye and gives the impression of unity is said to be color harmony. The types of color harmony may be classified as:

1. Dominant harmony--Produced by combining different values of the same color;
2. Analogous harmony--Produced by combining hues;
3. Complementary harmony--Produced by combining contrasting colors.

F. Color in dress

1. Color and individuality--The color in the dress should express the wearer's individuality; therefore, the color should be so selected that it enhances the real beauty of face, and proves an aid in clarifying and idealizing unattractive qualities of face and figure. In selecting colors some points should always be borne in mind:
 - a. It should be in harmony with the color and the texture of the skin.
 - b. It should be in harmony with the hair and eyes.
 - c. It should be in harmony with the age and personality.
2. Color and light--Some colors are lessened or increased in richness by artificial light.

Therefore the materials for evening dress should be examined under artificial light, and those for day wear in daylight.

3. Color and season--Climate and season are closely related to the colors.
 - a. Cool colors should be worn in summer.
 - b. Warm colors should be worn in winter.

Suggested Problems for Students

1. What are the three primary colors? Why are they so called?
2. How many secondary colors, and how are they made?
3. Collect as many different samples of colors as you can. Arrange the samples of each color according to their values, then according to their chromas.
4. What do you mean by harmony of colors? Are the colors of your blouse, skirt, or trousers, and stockings harmonious?
5. What colors are becoming to you? Try to select the colors of different textiles for yourself and your chum.
6. State the reason that we Chinese like to wear a black skirt for ordinary dress.
7. If you choose a material for evening dress, do you want to select it under natural or artificial light? Why?

8. Criticize the colors of your own dresses, and how^{59.}
could you improve them?

IV. Textiles

One who wants to select and use textiles properly should study them.

A. Classification of textiles.

1. Wool--Flannels, tweeds, twills, crepe, etc.
2. Silks--Satin, brocades, soft silks, wash silks, crepe, artificial silk, etc.
3. Cotton--Native, Japanese, Indian cloth, and other kinds.
4. Linen
5. Native chiffon.

B. Chemical tests

1. Linen vs. cotton--Immerse the fringe in a concentrated solution of H_2SO_4 for one minute and then wash quickly in cold water. The fringe of linen will remain, the cotton will be dissolved.
2. Wool and silk vs. cotton and linen.--Boil a piece of fabric for five minutes in a 5% solution of NaOH. Wool or silk will be dissolved, whereas cotton and linen will remain.
3. True silk vs. artificial silk--Burn a piece of

fabric for the test. The odor of burning feather indicates real silk, odor of burning wood is artificial silk.

C. Selection of Textiles--The selection of textiles is governed by:

1. Color--A fabric of brilliant hue may be used for evening dress, and white and neutral color, or color of dark and subdued tone may be used for morning and afternoon dress.
2. Weight--Heavy materials may be used for coats and for winter wear. Light materials may be used for evening dress and for summer wear.
3. Texture--It is closely related to the color. Materials of good quality may be used many times without fading.
4. Durability--In selecting materials, one should consider how much wear the garment will be subject to. For certain purposes and occasions delicate materials are ideal. For daily wear durable materials are the best.
5. Fashion--Fashion should not be overlooked. If a material is chosen that is out of fashion, even though the style is up-to-date it will show poor taste.
6. Age--The fabrics should be selected from the point of view of the wearer's age. Brocades and heavily

embroidered designs are becoming to mature women,^{61.}
and plaids are becoming to girls.

7. Personality--The material should be suited to the individual personality. For instance, figured satin is not suited to the boyish type of lady.

Suggested Problems for Students.

1. Each one make a special study of one kind of material, (Wool, silk, cotton, linen, and Chinese Chiffon) its origin, manufacturing processes, and cost; then give a report to the class.
2. What is the relation between color and textile.
3. How does texture affect the becomingness of color? Give two examples.
4. Name two fabrics that are thick, soft, and smooth. What are the differences in their use?
5. What textiles and textures are becoming to a stout woman?
6. If you want to select a dress for your mother what consideration will you have to take?
7. What materials would you choose for your daily dress?
8. Choose the materials for your little sister.

V. Construction.

There are no definite boundaries between the front, back, or sides of the body. The good points will be

enhanced, and the minor defects will be concealed by properly constructed lines of the clothes.

A. The important parts of construction.

1. The neck line.

a. Should be in harmony with the shape of the face and chin.

(1) A shallow heart-shaped opening is suited to the person with a thin and long face.

(2) A shallow round neck opening is suited to the person with a pointed chin.

b. Should be shaped with reference to the shape of the neck.

(1) A deep heart-shaped neck opening or a priest-collar is becoming to the person with a short and thick neck.

(2) A roll up or fitted collar is becoming to the person with a thin and long neck.

2. The width of the armhole and sleeves--The width of these two parts should be in proportion with the blouse. The wearer will look untidy if the armholes and sleeves are too broad, and will look uncomfortable and ugly if they are too narrow.

3. The width and the length of the blouse should be suited to the figure of the wearer.

4. The skirt--The contour and the length of the skirt

are governed by the age, size and the personality of the wearer.

B. The construction of clothes for various figures.

1. Well proportioned figure--The figure which approximates the standard need not use her dress as a means of calling attention to good points of proportion, or concealing of her defects. Her efforts may concentrate on getting pleasing effects of color and textile.
2. Tall and thin figure--She should accent her horizontal lines. The blouse should be loosely fitted, and the skirt should be cut a little full. The head should not look small in proportion. For out-of-door wear a cape is suitable.
3. Tall and heavy figure.
 - a. She should keep her quality of dignity and poise that her size demands.
 - b. She should wear a properly fitted blouse and skirt, and avoid any thing that is fluffy and dainty.
 - c. She should wear heavy silks, brocades, and other heavy looking fabrics.
4. Short and thin figure--Her appearance should be kept as small and delicate as possible. Daintiness should be the keynote of her costume. All parts of her dress should be in proportion

to her body. Soft and fine materials with lace and trimming in construction are in good taste.

5. Short and stout figure

- a. She should emphasize the vertical lines.
- b. She should concentrate her attention on the head and face, so as to keep the body inconspicuous.
- c. Her blouse should fit snugly, and should have long sleeves.
- d. Her skirt should be long, and properly fitted.
- e. The trimming of the clothes should be flat and smooth, no puffs nor ruching.

6. Swayed, round, square, or sloping back--All these defects may be made inconspicuous by loosely fitted blouses with roll or priest collars.

7. Full bust--The underwear should be close-fitting, but not too tight. Binding chests may be very injurious. The neck line should be carefully cut.

Suggested Problems for Students

1. What sort of neck line is becoming to a stout girl with a short neck and a round face? Why?
2. Plan a dress becoming to your color, occupation, and your figure.
3. Mrs. W. is very tall and thin, and wears a very long skirt, narrow blouse, pointed neck line.

Do you think these points are becoming to her? Why?

4. Describe a plan for a dress for a girl who has round shoulders and large hips and wide face.
5. Is the construction of your skirt, blouse and neckline becoming to your figure? How could you improve them?
6. Miss L. wears a green blouse, blue skirt, white stockings and black shoes. What advice do you want to give to her?

VI. The Hygiene of Clothing.

Clothing serves not only to satisfy the esthetic feeling of the wearer and beholder but to provide physical protection. Therefore, whenever one plans to have a garment one must so design it that it will fulfill the requirements of both beauty and hygiene at the same time.

A. The type of Clothing.

1. For adults--This paragraph involves mostly women's costume.

a. Blouse

- (1) The blouse should be neither too wide nor too narrow. The wearer would feel uncomfortable if it is too narrow, and discommoded if it is too wide.
- (2) The sleeves of the winter clothes should not be too short and wide, the elbow must be covered.

b. Skirt--The skirt

- (1) should not be too short, so that the lower part of the legs may be protected.
- (2) should not be too long, so that it will not be a menace to comfort and safety.

c. Underwear.

- (1) Trousers--The trousers should be so made that they may be covered by the skirt (if a skirt is worn) but the knees should be protected by them, for the knees are very sensitive.
- (2) Waists--No tight waist should be worn, for it impedes the circulation, interferes with respiration, and causes bodily deformities. Many girls and young women tightly bind the breasts. As a result many girls develop tuberculosis of the lungs; and mothers cannot nurse their babies, for their breasts cannot function. For correcting this the line of the blouse must be broader in order that the underwear may be loosened.

d. Shoes--The right kind of shoes:

- (1) Right size--A shoe must be the width of the foot when it is unshod and pressed upon the ground by the weight of the body.

- (2) Right shape--The shoe should have a straight line from the heel through the point of the big toe. The heel of the shoe should be broad, and should come squarely under the heel of the foot. Chinese old fashioned shoes are soft and flexible, but the heels are too flat, the arch of the foot may be spoiled. The so-called French shoes which throw the feet forward into the front of the shoe and cause the deformity of the foot should not be worn.

e. Collar of blouse.

- (1) Round, square, heart-shaped, and may be designed for summer dress.
- (2) Loosely made collar may be worn during winter time. A high and tight collar should never be worn, because it may cause the throat to be inflamed.

2. For children--A child should be so dressed that a sudden change of temperature cannot affect him.

- a. Garments should be comfortable. The neck, legs, and arms may be exposed in summer. Knees, elbows, and ankles should be covered during the winter time.
- b. Open trousers should never be worn by any child, for children are active creatures,

and they always play outside by sitting on the ground or somewhere else. It is easy to acquire infections originating in this part of the body.

- c. Both blouse and trousers should fit their bodies, and be free for movement.
- d. Weather-proof overshoes should be worn during snow or rain.
- e. The texture of underwear should not be too coarse, because the skin of a child is so delicate that rough material may irritate it.
- f. An overcoat or outer Manchurian gown should be worn when the child is going out during the winter time.
- g. Simply made night clothes should be worn at night time. This is not only hygienic but also economical.
- h. The color of underwear should be considered. Any discolored material should not be used.

B. Cleanliness of Clothes.

1. The clothes which are worn next to the skin should be kept clean. The sweat-glands give off about three pints of bodily waste a day, most of which is absorbed by the underwear, so that underclothes should be often washed.
2. The clothes worn during the day must be taken off

at night and aired, and night gown should be put on.

3. The color of underwear should be white or some other light hues. No blue ones should be worn, because the dye readily comes out and is absorbed by the body, consequently the body may be poisoned.

C. Textiles and Color.

1. Underwear.

- a. The material must be porous and washable and light. Porous linen or cotton underwear is sanitary because it is not only washable but helps the ventilation of the skin.
- b. Flannel or wool clothing should not be worn next to the skin, for it absorbs and retains the moisture from the skin.
- c. Any material that fades should be avoided.

2. Summer clothes.

- a. The material should be linen, fine cotton, thin washable silk, and chiffon, and so forth, because they are good conductors of bodily heat.
- b. The color should be light, for light color reflects heat, but dark absorbs it.

3. Winter clothes

- a. For those living in a building where a warm

temperature is maintained in winter time, the indoor clothes should be thin and light. Outdoor garments should be made wind-and-moisture-proof. Flannel, wool, and fur are good textiles.

- b. For those in a house which is not very warm, the indoor clothes should be of a considerable thickness, and outdoor garments are also desirable. If the person can not afford a specially made outdoor garment a heavy Manchurian gown is very good for this purpose.

- D. Hats--Hats have never been universally used by the Chinese. Scarves and parasols are used instead of them. However, they may be worn sometimes in severely cold or hot weather, if they are nicely designed.

VII. Economy in Dress

A. Selection of Clothing.

1. The utility of the clothing should be considered. Clothes should be comfortable and durable and convenient for work.
2. Extremes of fashion should be avoided since the styles rapidly change.
3. Elaborateness of trimming and over-decoration

should not be used as they cause deterioration.

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4. Substantial fabrics which have good wearing quality should be chosen.

B. Purchasing Clothing.

1. Selecting certain stores and dealers, for a permanent relation with one store usually has some advantages.
2. A pre-determined list of items should be in hand.
3. An annual clothing budget should be planned.
Be sure you do not spend more than the amount in the budget. Some Americans put 15% of the total income for clothing.

C. Care of Clothing.

1. Adequate storage
 - a. Clothes should be nicely folded and put in a chest or trunk for protecting them from dust, sun and moth.
 - b. Clothes should be kept in condition for immediate use.
2. Immediate repairs.
 - a. Clothes should be properly cleaned, washed, and pressed before they are put in the storage.
 - b. All torn parts should be immediately mended.
3. Protective garments, aprons, overalls, work gauntlets, etc., should be worn during the work.

4. Rubber overshoes, raincoats, and umbrellas should be used during snow or rain days.
5. All clothes should be frequently changed. At least two outer garments and two pairs of shoes should be had.

VIII. Hair Arrangement.

- A. Three essentials to good hair arrangement.
 1. Careful grooming--Hair should be kept shining and clean, because the appearance of a person may be ruined by greasy, frowsy or dirty hair.
 2. Neatness--The daintiness, poise, and dignity of the whole appearance is brought out by the neat arrangement of hair.
 3. Becomingness--Hair arrangement should be suited to the individual.
 - a. Appropriate to her age and to her occupation.
 - b. Becoming to her head and features.
 - (1) A slender woman with a long and thin neck looks better if her hair is so arranged that it will not add to her height.
 - (2) A plump woman with a short neck should arrange her hair from the nape of the neck and pile her hair high on her head.

- (3) If the face is too wide, the hair should be so arranged that the ears may not be exposed.

B. Coiffures for different types of head.

1. A large bulging forehead.

a. The hair may be parted on the side and drawn slightly over the ears. If the forehead is not too broad bangs may be worn.

b. The hair should be fluffy and soft and be trained to grow low over the forehead.

2. A square jaw and heavy chin--The upper part should be made large and the forehead should be put in a broad and flat mass on the top.

3. A protruding jaw and narrow chin--The hair should be dressed loosely at the sides and above the forehead and piled at the back of the head.

4. Large face with large features--The mass of hair should be kept large and smooth. The line of the hair against the face should be soft and indistinct.

Suggested Problems for Students

1. What is the attitude of the majority of young girls toward clothes?
2. Is the custom of binding breasts prevailing in your school?

3. State the injuries of binding the breasts. Do you want to take a part in correcting this wrong custom? How?
4. Do you think that French-heeled shoes will be stylish in China? What is the harm of this style?
5. State the points which should be improved in our blouse, skirt, stockings, and shoes. Why and how?
6. Name as many of our native textiles which may be used for underwear as you can. Why?
7. Which would be warmer--thick, closely woven cotton or light, knitted wool for an outer garment? Why?
8. Name three reasons why thin cotton and linen are the best materials for the clothes next to the skin.
9. What are the objections to silk for underwear?
10. Why should a young girl not wear too much? State the effects of wearing too much.
11. What kind of underwear is most satisfactory for women of limited income and limited time? Write out reasons.
12. Make a list or collect samples of materials suitable for a high school girl whose parents have a moderate income.

IX. Laundering

A. Preparation of the wash.

1. Mending--Mending should be the first step of the

preparation of the wash. A tiny break in a thread may form a large hole if it is neglected before washing. However, underwear and stockings may be mended after being washed.

2. Sorting--All things ready to be washed should be sorted according to the color, materials and the kind of dresses.
3. Counting and marking--If the clothes are to be sent out, they should be accurately counted, and a little mark should be put on.

B. Process of washing.

1. Soaking--All soiled white clothes ought to be soaked in warm soap water. This is an economical way, because soaked ones require less rubbing.
2. Washing--The water should be enough for making good suds but not enough to splash out of the tub. The garments should be rubbed over the board systematically, the specially dirty places rubbed directly on the board after the soap is applied.
3. Wringing--The garment should be wrung in straight folds. Materials not durable should not be wrung too tightly.
4. Bluing--Bluing is used to counteract the tendency of clothes to turn yellow. When the bluing is added the water should be stirred. Stir the

water well just before adding the clothes, because some bluing may settle to the bottom. After the clothes have been blued, they may be wrung. If it is necessary to starch them, do it; if not hang them for drying.

5. Hanging--The line should be stretched taut and wiped, and the pins should be clean. The garments should be well shaken to remove the wrinkles and creases, and then hung straight. They are fastened to the line by pins. White clothes should be hung in the sun, because the sun bleaches white; while colored ones should be hung in the shade because the sun fades colors. Silks and woolens are dried in the shade. All clothes should be dried in the open air except in very stormy and cold weather.
6. Sprinkling--Sprinkle the clothes carefully by spray and stretch them into shape and roll tight. Lace, embroidery, tucks, and hems should be nicely folded.
7. Ironing--All embroideries, laces, buttons, should be ironed on the wrong side with a soft pad underneath, so that the pattern may sink into the pad and not be spoiled by the iron. Fold the clothes nicely and iron a part till it is perfectly dry before the new part is started.

A wet cloth is used when the clothing is ironed so shining may be avoided.

8. Clothes should be carefully folded after ironed, and put in drawers, trunks, or chests in such a way that they are ready to be used.

C. Stain Removal(Copied from Laundering, by Balderston)

<u>Character of Stain</u>	<u>Reagent</u>	<u>Method of Removing</u>
Blood	Warm water	Wash in warm water until stain disappears.
	Warm water and ammonia	Ammonia assists in dissolving the blood. Use a few drops to a quart of water.
	Warm water with raw starch	If heavy or new goods, as a new blanket, make a paste of raw starch and warm water. Spread on stain, and as fast as starch is discolored, make a new application.
Candle Wax	Friction and warm iron with blotting paper	Rub off all excess paraffin. Use paper each side of wax stain, then apply a warm iron--not hot.

<u>Character of Stain</u>	<u>Reagent</u>	<u>Method of Removing</u>
Candle Wax	Permanganate and oxalic	To move color after wax has been removed, wash in clear water and use a mild bleach.
Fruit	Boiling water	Spread stained part over a bowl, pour boiling water on it from a height so as to strike the stain with force.
	Borax and ammonia (For woollens and silks)	Use borax and ammonia solution and boiling water in equal quanti- ties and immerse stained portion, allow- ing it to soak a few minutes and rinse thoroughly with boil- ing water.
	Javelle (for cottons and linens)	Use Javelle instead of borax and ammonia.
	Oxalic acid	Apply a few drops of oxalic. Rinse well with warm water. (dilute

<u>Character of Stain</u>	<u>Reagent</u>	<u>Method of Removing</u>
Grass	Cold water	oxalic acid may be used on all fabrics.
	(without soap)	Wash a fresh stain with cold water.
	Alcohol)	These dissolve the green coloring matter, when material cannot be washed.
	Ether)	
	Javelle (for white cottons and linens)	Apply Javelle, and follow immediately with boiling water. Thorough rinsing will prevent Javelle from affecting the fibre.
	Kerosene	Moisten with kerosene, let stand a short time, then wash with soap and water.
Grease and oil	Warm water and soap	Wash in warm water and soap.
	Javelle (for white cottons and linens)	Remove traces of grease stains by bleaching with Javelle.

<u>Character of Stain</u>	<u>Reagent</u>	<u>Method of Removing</u>
Grease and oil (con.)	Chloroform	Apply these reagents with a cloth, preferably of the same material, rubbing the stain lightly until all the reagent has evaporated.
	Benzine (for delicate colors and fabrics.)	Moisten with salt and lemon juice. Lay in the sun. Wash in soap suds.
Ink	Salt and lemon juice	Apply a few drops of oxalic acid, follow with a few drops of javelle, and rinse quickly with boiling water.
	Oxalic acid or HCl and Javelle (for white cottons and linens)	Use as indicated on box. Wash finally with soap suds.
	Ink eradicators	Use without other bleach especially for wools and silks.
	Oxalic acid (For silks and wool)	Rub in lard or grease well, then wash with warm water and soap.
Printer's ink	Lard or grease	

<u>Character of Stain</u>	<u>Reagent</u>	<u>Method of Removing</u>
Iodine	Warm water and soap	Wash while fresh in warm water and soap.
	Ammonia (Con.)	Apply concentrated ammonia to stain. Wash and repeat until removed.
	Alcohol	Wash with alcohol.
	Starch	Apply moistened starch, brush off and repeat until removed.
Machine oil	Cold water and soap	Wash in cold water and soap.
	Turpentine	Rub stain with turpentine, then wash out.
Paint	Soap and water	If paint is fresh wash it at once if the goods is washable.
	Gasoline	Wash the spot with
	Turpentine	any one of these,
	Benzine	remembering that they
	Bensol	are inflammable. Old stains may be readily removed with bensol.

<u>Character of Stain</u>	<u>Reagent</u>	<u>Method of Removing</u>
Varnish	Alcohol	Wet the stain with
	Turpentine	alcohol, turpentine,
	Bensol	or bensol and allow
		it to stand a few
		minutes, then wet again
		and sponge off with a
		clean cloth. Continue
		this until the stain
		is removed. In case
		the color is affected
		by alcohol, sponge
		with chloroform; but
		for blue material
		use dilute vinegar.

Suggested Problems for Students.

1. May all clothes be sent out for laundering? Why?
2. Under what conditions should clothes be boiled?
3. Have you ever had your clothes faded? Why? How do you prevent this?
4. Why should clothes pins be used when you hang the clothes for drying?
5. Discuss the disadvantages of freezing clothes.
6. Do some washing with board and tub. Dry and iron them.

7. Even if the equipment for cleaning is not adequate, the teacher should teach girls to remove, the small spots or stains with all the cleansing agents which may be purchased in drug stores. Inflammability of these agents should be discussed.

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CHILD CARE

- I. The Beginning of Life.
- II. The Development of the Fetus.
- III. The Care of Mother and New-born Baby.
- IV. The Nursing Period.
- V. The General Care of Infant.
- VI. Care of the Child From 2 to 6 Years of Age.
- VII. Care of Child From 6 to 12 Years of Age.
- VIII. The Adolescent (12-16).
- IX. Heredity and Environment.
- X. The Mortality of Mother and Children.
- XI. The Need of Registration.
- XII. Child Labor and Apprenticeship.

A. Plants--Every living creature, even a plant, has a life story. Sexual instinct plays a very important part in life perpetuation. It is a little difficult to think of plants as living things. Yet they struggle for their lives. They eat, breathe, drink and protect themselves from enemies, and provide for the union of the sexes and the future care of offspring. When a plant gets food, air, light, and protection, it develops its blossoms. The two sexual organs may be in the same flower or may be borne in different ones.

The reproductive organs of plants are:

1. Stamen--The anther on the long slender filaments is the essential organ for reproduction. When the anther sac is full of pollen it bursts and discharges its contents, the sperm cells.
2. Pistil--Is situated at the bottom of the flower-cup in the same manner as an ovary. The egg of the plant is found here.
3. Steps of reproduction--The sperm cells find their way to the ovary either by the agent of wind, by insects, or by themselves. The ovary then develops into embryo, and the seed is formed.

B. Lowest form of animals--The lowest animals, such as the amoeba and the hydra reproduce by means of fusion or budding. Amoeba is a tiny unit.

The mother organism does not die but ceases to exist because of the division of two baby amoeba. Hydra is also a kind of very tiny animal. They produce by means of budding. First the mother increases in the interstitial cells, and then the two layers of the body wall grow out into a tiny knob-like projection whose internal cavity connects with that of the parent, and then separates from the parent and lives as an individual.

C. Chicken--The chicken is a domestic bird. The life story of a chicken may be discussed briefly.

1. The four parts of the egg.

- a. Shell
- b. Egg white
- c. Egg yolk
- d. The germ

2. The birth of the chicken--The germ or real egg lies upon the upper surface of the yolk which may be seen when the egg is carefully broken. If the temperature is desirable the germ may develop. The food naturally provided is the yolk. When the yolk, or food, is exhausted the tiny baby breaks the shell and comes out as an individual. The length of time for the development from a germ to a baby chicken is

about three weeks.

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- D. Rabbits--Rabbits are a specie of mammals. Since rabbits are easily obtained, they may be studied as a representative of the mammals.
1. Reproductive organs of the rabbit.
 - a. Female--Consists of ovaries, egg-tubes and uterus.
 - b. Male--Testes and penis.
 2. The birth of young rabbits--Five or six or about that number of eggs may be formed in the ovaries at a time. After fertilization the young are carried in the body of the mother about thirty days. When they are born they are blind and hairless. They are nourished and protected by their mother until they are able to live independently.

II. The Development of the Fetus.

- A. The Reproductive organs and functions of man.
1. Female
 - a. Ovaries--Produce egg cells and elaborate them into the uterus through the oviducts.
 - b. Fallopian tubes--Are the connecting tubes between ovaries and uterus.
 - c. Uterus--(Womb)--Measures about three inches by one and a half inches and weighs about two

ounces, consisting of a thick wall and a small triangular central cavity. During pregnancy the wall is thickened and the weight is increased. When empty at full term, it weighs about two pounds.

2. Male

- a. Testes--Produce sperms
 - b. Spermatic ducts--Store sperms
 - c. Penis--Places sperms in female reproductive tract.
- B. Fertilization--The fusion of a spermatozoon with an egg. The nuclei of the cells fuse together and a new cell is formed.
- C. Segmentation--The new cell divides into two cells. This process continues until the spherical mass is a little larger than the size of the original egg. Then the segmenting egg is carried down through the oviduct into the central cavity of the uterus. It possesses a thin membrane (develops later into the placenta) which attaches the fetus to the womb of the expectant mother.
- D. The Embryo--It grows very rapidly. The egg increases 10,000 times in size within four weeks after fertilization. At the time when the embryo is about one-eighth of an inch in length, the brain, eyes, heart, and several extremities are distinguishable. At about 280 days it is ready for delivery.

E. Mother Contribution to the Fetus--The placenta takes up nourishment from the blood of the mother and carries it to the circulation of the child. The artery in the cord carries the wastes from the blood and kidneys of the fetus to the placenta; there it passes into the blood of the mother. Egg yolk contained in the cell is the food material of the embryo before it can receive the nourishment from the mother's blood.

III. The Care of Mother and New-born Baby.

A. Care of the Mother--The health of the mother affects the infant directly during pregnancy and breast feeding; therefore, the hygienic care of the mother is very important.

1. During pregnancy:

a. Diet--Some disturbances like indigestion (morning sickness, heart-burn, flatulence, and decaying of teeth) and constipation are quite often present, or unavoidably occur in the early months of pregnancy. The diet must be considered. Meals should be light, but frequent and adequately nourishing. The amount of liquid intake should be at least two quarts a day. Foods which contain

minerals, protein, and vitamins, should be supplied in sufficient quantity, and those which contain sugar and starch should be decreased. Sea foods containing iodine should be taken to protect the child from enlargement of the thyroid gland.

- b. Rest and Sleep--The pregnant woman should break her day's work with frequent short periods of rest. She must have an abundance of sleep in a comfortable bed and in a well ventilated room. If she can not get enough sleep at night, she has to plan to take a nap after the noon meal.
- c. Exercise and Recreation--An expectant mother should have adequate exercise and recreation. Outdoor exercise is desirable, for there is no tonic like fresh air. She should have as much social recreation as possible. These two points are very essential, but most Chinese expectant mothers neglect them and do nothing but rest all the period of pregnancy in very warm and poorly ventilated rooms.
- d. Dangers---Abortion is enormously common among Chinese expectant mothers, and quite a number of them die from abortion.

(1) Causes

- (a) Misplacement--After childbirth the proper rest is important. Some women who have not taken adequate rest after childbirth have this trouble.
- (b) Intercurrent disease
- (c) Violent emotion
- (d) Venereal disease--As the result of syphilis, abortion may take place at any period of pregnancy with the discharge of a dead fetus.
- (e) Doctor's examination (Medical supervision). The physician should be consulted as early in pregnancy as possible. The pelvis should be measured, and the heart, lungs, abdomen, and urine should be made to determine any hint of syphilis.

2. During labor

a. Necessary supplies

- (1) Care of the room--Unnecessary furniture and equipment have to be moved out and the room should be cleaned thoroughly.
- (2) Care of the bed--The bed should be comfortable and the mattress should be flat and firm and at least 20 inches from the floor. Quilts

should be clean, and sheets should be sterilized by boiling water. Oil papers should be used under the sheet for protecting the mattress from being soiled.

b. Stages of labor--In America the course of labor is divided into three stages, which are described precisely as follows:

- (1) The first stage--Its duration is about sixteen hours in the average first labor. Subsequent confinements take eleven hours or less. The uterus contracts and the patient feels distressed while the contractions last. She should be encouraged to take light and nourishing foods at the intervals of pain, and should have necessary sleep and rest and be urged to take a walk about the room if possible.
- (2) The second stage (delivery stage)--The duration is about two hours. The patient is in more pain, because of the contraction of the abdominal as well as the uterine muscles. A doctor should be with her. All the bed clothes and night gowns should be changed to sterile ones.
- (3) The third stage--After more than ten minutes (sometimes several hours), the placenta and

and membrane are discharged naturally, with more or less hemorrhage or they are pressed down by a physician. If the hemorrhage is prolonged, a physician should be called (if one is not already present).

3. After Child Birth--The patient should be cleaned up. A hot drink should be given, if the mother is chilled. She should be urged to sleep, and no visitor may be allowed for at least twelve hours.
 - a. Diet--Liquid may be given on the first day.
Soft diet may be given on the second day.
Rich foods should be avoided.
 - b. Excretion
 - (1) Bowels--a dose of castor oil may be taken on the second morning if she feels constipated. Be sure no constipation exists.
 - (2) Urine--The bladder should be emptied within ten hours after delivery. An abundance of water should be taken.
 - c. Breasts--The nipples should be washed with boric solution (saturated) both before and after nursing.
 - d. General care--Pulse, temperature, and respiration should be noted three times a day. The

room should be well ventilated, but without drafts. Sunshine should be plentiful. The mother should not attempt ordinary housework for at least one month after child birth.

B. Care of the new born baby.

1. At birth

- a. The cord should be tied one inch from the abdominal wall, then cut and covered with sterile linen.
- b. The eyes, nose, and mouth should be washed with saturated boric acid solution. The eyelids should be washed with sterile water and one drop of from 1 to 2 percent silver nitrate solution should be put in each eye for killing the bacteria which may cause blindness if the parents have had, or are under the suspicious condition of, venereal diseases.
- c. The baby should be wrapped and put in a warm place.

2. The first toilet

- a. The child should be oiled all over with warm olive oil, and the cord dressed with sterile gauze.
- b. The child then should be dressed quickly and put on a soft thick warm mattress.

3. Daily care

- a. A sponge bath should be given daily until the

cord is off.

- b. Cord dressing should be changed if soiled.
- c. The eyelids should be washed with boric acid solution every day.
- d. The bowels should move daily.
- e. The genitals should be washed daily with boiled water and absorbent cotton. If the foreskin in a boy is tight, circumcision should be given.
- f. Nursing--8 to 12 hours after delivery the baby may be put to the breast. The mother's breast contains a liquid (colostrum) which is just what the baby needs to clean out its alimentary canal and make it ready for digestion. It is a great mistake that we Chinese usually give a dose of medicine before breast taking. A very queer custom in some provinces in China is to put the new born baby at the breast of a mother whose milk is well established. This is of course wrong for it does not perform the function of colostrum and is a harmful custom leading perhaps to the custom of offering new born babies laxatives.

IV. The Nursing Period.

A. Every mother should nurse her own baby. Every mother can nurse her own baby if she has no tuberculosis or infectious disease of the breasts. The sucking of the baby stimulates the uterus to contract and prevents the hemorrhage. Furthermore, it is the best way to prevent the premature return of the menstruation and prolong the short interval between pregnancies. And the mother's milk is the only food prepared for the baby by nature. No substitute is as good as mother's milk. The temperature and composition of mother's milk are ideally suited to the baby's needs.

B. The Wet Nurse. In China, many wealthy women do not nurse their babies, but hire women who have good breasts to feed them. It is objectionable to both mother and child.

1. The reasons why the mothers cannot nurse their babies:

a. Bound breast custom--Our girls like flat breasts, so that many of them bind their breasts very tightly, and the breast is not well developed. During the breast feeding period they can not secrete milk.

b. To shorten the intervals between child-birth.

Wealthy parents love to have many children--the more the better. It is the glory of the woman, no matter whether the children are weak or subnormal. But the increase in birth rate is always accompanied by an increase in death rate.

2. The disadvantage of wet nursing.

- a. It is unsanitary--Almost all the wet nurses employed are from the villages. They are not neat and clean.
- b. It prolongs the nursing period. The baby is always with the wet nurse; if he leaves her he will be fussy; therefore, the nursing period is usually prolonged until the baby is three to four years old.
- c. It does not provide enough nourishment. Very few wet nurses can provide enough nourishment as well as the mother.
- d. It interferes with education. Imitation is an instinct. The child will imitate whomever he is with. The wet nurse is never educated; how can she be a good example?
- e. It isolates the baby from the mother, with the result that the relationship and love between the mother and the baby is diminished to some extent.

C. The Care of the Nursing Mother:

1. Diet--The amount of breast milk is dependent upon the food intake. The mother should have adequate food in both quantity and quality. She must have more animal protein, minerals, especially calcium and iron, and vitamins, than for her ordinary living. An abundance of liquid is essential to the quantity of milk.
2. Excretion should be regulated by food taking.
3. Sufficient sleep, rest, and exercise are the important factors in the production of milk.
4. The nipples should be kept clean.
5. The nervous condition of the nursing mother affects ⁱⁿ the milk both/the quantity and the quality; therefore, the mother should control herself and never get angry, over excited and worried.

D. The Intervals of Feeding

1. A daily schedule for breast feeding

AGE	Number of nursings in 24 hours	Interval during day (hrs)	Number of night nurs- ings 6PM to 6AM
1 day	2	12	None
2 days	5	4	1
3 days to one month	6-7	4 or 3	2
1 to 3 months	5-6 or 7	4 or 3	1 or 2
3 to 5 months	5-6	4 or 3	1
after 5 months	5	4	1

2. The length of each nursing period--Usually from 5 to 20 minutes, 5 minutes for one breast and ten minutes for the other.

E. The weaning

1. When the baby should be weaned. The normal infant of the countries which utilize cow's milk as an essential of food may be weaned when they are nine months old; but in view of present Chinese conditions, our babies should be weaned at one year. During the hot season, or while the child is recovering from an illness, the nursing may be prolonged. But additional food should be given to him gradually from the sixth month until at one year or a little longer (but not more than fourteen months) he is entirely weaned. Cow's milk is a very suitable, digestible, and richly nourishing food for both adults and infants. It is to be hoped that we Chinese will realize the value of it and learn to feed cows for their milk as well as for their meat.

F. Food

1. Baby 6 months--Cereal and fruit juice should be given gradually to substitute breast feeding.
 - a. Cereal
 - (1) Soup of rice
 - (2) Wheat hearts
 - b. Fruit and vegetable juice
 - (1) Orange juice
 - (2) Tomato juice

- (3) Pear juice
 - (4) Cabbage juice
 - c. Meat broth and vegetable juices and cereal(strained)
2. Baby 7 months
- a. Cereal--fruit, same as for 6 months
 - b. Vegetable--Spinach, carrots, and cabbage should be cut into small pieces, and boiled, Strain before using.
3. Baby 8 months
- a. Cereal--rice gruel, toast
 - b. Milk--if possible
 - c. Vegetable and fruit--same as for 7 months.
4. Baby 9 months
- a. Cereal and milk--Same as for 9 months.
 - b. Vegetables, string beans and beets may be added.
 - c. Fruits--Baked apple, may be added.
 - e. Egg yolk.
5. Baby 10 to 11 months
- a. Cereal--Rice, rye, gruel of rice, rye and small grain and toast, may be given (translate directly)
 - b. Other foods--Same as for 9 months.
6. Baby 12 months--He may be weaned entirely. Foods are almost the same as for eleven months, but the quantity should be increased.

V. The General Care of Infant

A. Bathing

1. The temperature of the bath room should be from 70° to 75° F. Certainly never warmer than that.
2. The temperature of the bath water should be taken by a thermometer or tested with the elbow of the mother. If it is taken with a thermometer the right degree of temperature is as follows:
 - a. During early weeks from 100° to 98° F.
 - b. During first six months from 95° to 90° F.
 - c. During the next six months as low as 80° F.
3. Equipment
 - a. A small bathtub and a table or other suitable support for the tub to stand on.
 - b. Individual towels.
4. Bath--The bath should be given on an empty stomach and at a convenient time for the mother.

B. Clothing

1. All clothing should allow free movement of arms and legs, and have not too many buttons.
2. All clothes should be adapted to the season of the year; the child should not be overloaded with clothing in winter time.
3. Night gown is necessary, and the material should be suited to the temperature.

4. The material of clothes should be warm, (not too warm), light, smooth, elastic, washable, and simple in design.

C. Sleeping

1. A young infant should sleep from 16 to 20 hours per day, and he should not turn night into day, but acquire an early regular habit of sleeping.
2. A young infant should have a long nap after the bath.
3. A young infant should be trained from the very first to sleep all night. He should not be awakened at night for feeding or diaper changing. He should go to sleep whenever he is put in bed, without being patted, rocked, or sung to.
4. A young infant should have adequate fresh air and reasonable quiet.

VI. Care of the Child From 2 to 6 Years of Age.

This is the transitional period between infancy and childhood. Some habits are formed and some instincts are developed in this period. Sometimes they are neglected, for the mother has to take care of younger children. But the parents should know that the later life of children is based upon the development in this period; therefore, hygienic care and proper food are very important.

A. General Care

1. Sleep--At least twelve hours should be spent in sleeping. In some families, if the children go to bed very late the parents will be proud of them and say "How lively our children are!" This is a big mistake. No wonder many children are unhealthy and unable to study hard when they attend school.
2. Good ventilation--Children should have plenty of fresh air, especially in sleeping rooms.
3. Cleanliness
 - a. The genitals should be kept clean.
 - b. The bladder and rectum should be brought under control.
 - c. Hands and face should be washed before meals and at bedtime.
 - d. Teeth should be brushed at least twice a day.
4. Clothing
 - a. Clothes should be suited to the weather; they should never be too warm and heavy.
 - b. An extra garment for out of doors is necessary.
 - c. Clothes and shoes should be comfortable and sanitary.
 - d. Night gowns and underclothes should be changed frequently as well as outer clothing.

5. Protection from communicable diseases.--Children are very easily infected with communicable diseases. The terrible death rate of children from 1 to 4 years of age is due to this reason.

a. Common diseases

- | | |
|--------------------|-------------------|
| (1) Diphtheria | (6) Mumps |
| (2) Scarlet fever | (7) Common cold |
| (3) Measles | (8) Typhoid fever |
| (4) Influenza | (9) Dysentery |
| (5) Whooping cough | (10) Cholera |

b. The way of infection.

- (1) Contact infection--Diseases are spread directly from a person ill with the disease, and indirectly by a carrier.
- (2) Indirect transmission--By water, food, and insects.

c. Protection

- (1) Sick persons should be isolated from children.
- (2) Children should never be allowed to call on neighbors' children who have infectious diseases.
- (3) Foods should not be exposed to dust and flies.
- (4) Water should be boiled before it is drunk.

6. Play

- a. The use of play--Play is an essential element in the development of the physical, mental, and

moral capacities. Co-operation, sacrifice, justice, self-control, self-respect, leadership, and obedience to command all may be trained by play.

b. Place for play--Home is the right place for children's play and to keep playthings. They should have a play room if possible. A little tactful direction of parents will help children to have more interests.

c. Kinds of play--Walking, running, jumping, climbing, riding, swimming, kiting, hunting, fighting, making toys, herding, and other games suited to the child's state of development.

7. Posture--The wrong posture of children is often formed in this period. Attention should be given to the children's sitting and standing position. They must keep their bodies straight.

B. Training

1. Mental training

a. Imitation--When the child begins to imitate, an opportunity for education opens before the mother. He likes to do things himself. This is the right time to establish the habit of doing things thoroughly and systematically.

b. Curiosity--All children like to ask questions during this period. This is certainly an educational opportunity open to the mother. She should answer him reasonably, simply, truthfully, and frankly as far as she is able to explain and as far as the child can comprehend.

c. Imagination--The stronger a child's imagination is, the more creative ability he is going to develop. Parents should not worry when the child begins to invent stories, to tell "lies." This is merely normal expression of the imaginative power; and it is harmful only if the parents, through ridicule, drive the child to conscious deceitfulness.

2. Moral training

a. Obedience

- (1) Wise suggestions of parents are better than command.
- (2) Treat the child by the same code of ethics and courtesy that is used for adults.
- (3) Never use excessive punishment.
- (4) Never give hasty and unreasonable commands.

b. Kindness--A child should learn to treat both mankind and animals kindly.

c. Respect--A child should be trained to respect his parents, and all aged persons.

- d. Charity of spirit should be cultivated at this period. The child should be trained to understand sympathetically the misery of all unfortunate people.

VII. Care of Child from 6 to 12 Years of Age

- A. General Care--About the same as previous period, except the sleeping hours are a little less than that.
- B. Food--Sufficient, properly cooked, and attractively served food is important, for many stunted children owe their condition to the improper food. Loss of muscular and nervous energy, reduction of resistance to infection, decrease of mental ability often occur in this period by reason of improper food taking.
- C. Training
1. Physical--During this period, children should learn a large variety of motor activities. The habit of using hands, feet, and legs should be established.
 2. Mental--This period is one of acquiring the foundations of knowledge. Memory is pretty good, and new ideas are formed. They are interested in reading. Stories are the favorite enjoyment.

Parents should help them to select books which are in good taste.

3. Moral--Children in this age are very curious. They like to destroy things, even animals and plants. Parents should teach them what attitude children should have toward animals and plants.

VIII. The Adolescent (12-16)

This is a transitional period from childhood to adult. The best of care, proper supervision and sufficient food are demanded, for the enormous growth and development incident to this period. Children of this age begin to notice the nature of sex by the physiological maturity of the sex glands.

A. The Changes

1. Physical

- a. Height--There is a rapid increase in height. The most rapid growth during puberty is at about the eleventh year in girls and at the thirteenth year of boys.
- b. Weight--From 11 to 13 years of age girls gain more rapidly, and from 14 to 16 years of age boys gain more rapidly. The greatest gain in girls is in the thirteenth year, and in boys in the sixteenth year. During the greatest growth, the average for boys is 16 ounces

per month, for girls 12 ounces.

c. Other body changes

- (1) Nervous system--For the reason that the muscles grow much more rapidly than the rest of the body, sometimes the nerves cannot control them. Children are very sensitive and often absent minded.
- (2) Reproductive organs--Hair appears, the size of reproductive organs is increased, and the function of the reproductive organs is established.

2. Psychological change

a. Exaggerated emotional responses.

- (1) Self-regard.
- (2) Food eccentricities.
- (3) Great like or dislike of certain persons, rooms, places, or things.
- (4) Hero-worship--They see themselves as the hero of even the cheapest story, and conceive themselves as occupying the center of interest.

b. Increase in self-consciousness and social consciousness.

- (1) Feelings of independence.
- (2) Feelings of maturity.
- (3) Excessive interest in knowing what others think about them and criticize in them.

(4) Sensitive about what they have done.

c. Sex emotions.

(1) Avoid the opposite sex (beginning of this period)

(2) Feel sex attraction.

(3) Associate with and easy to fall in love with opposite sex (15-18)

d. Religious emotions.

(1) The mystery of religion appeals.

(2) Religious conversions occur at this time.

(3) Critical attitude held toward religion at the end of this period.

e. Esthetic emotions.

(1) Love of beautiful in clothes, music, house furnishings, and arts.

(2) Esthetic ability is usually developed during this period.

B. Signs of Puberty

1. Girls--Features become more beautiful and attractive.

The internal organisms change as well as external body change. Menstruation begins to discharge.

2. Boys--Deepening of voice, and hair on the face.

C. General Care

1. Food--They should have plenty of proper food at regular intervals. Stimulative foods, including strong tea, hot pepper, should be avoided.

Wine and cigarettes should be prohibited.

2. Athletic sports--Both sexes need organized athletic play. Girls in this age are usually tired and lazy. They should be urged to play and to take outdoor exercise. Many girls develop tuberculosis during this age, because of the old custom of never letting girls play outside.
3. Care during menstruation--normal exercise should be encouraged. Avoid all kinds of violent forms of play. Lukewarm bath should be taken and constipation should be avoided or cured.
4. Posture--Attention should be paid to the manner of standing and sitting. Girls are ashamed for the growth of breasts and always bind their breasts very tightly, and bend heads forward. This is not only injurious to the development of the breasts but also harmful to the respiratory organs. No wonder many girls acquire tuberculosis during this period, and many mothers cannot feed their babies naturally.
5. Sex habit--Mothers should teach their girls and boys that they should respect themselves and control the sex power. They should be told frankly about the importance of purity and the highest ideal between friends of the opposite sex.

6. Sleeping--Children during this period need a great deal of sleep at least nine hours a day. They should not be allowed to sleep in very warm places.

IX. Heredity and Environment

- A. Heredity--The new individual is formed by the fusion of the egg and sperm. Chromosomes in the nucleus perform the function of heredity. Therefore the new individual has a marked tendency toward resemblance to his parents in physical structure, personal manner, and mental ability. Attention should be paid if one wants to adopt a child.
- B. Environment--Both persons and material things which are around us are our environment. Surrounding conditions affect the development very much. The environment of a child may be divided into two, the prenatal and the postnatal environment.
 1. Prenatal environment--The surroundings which encircle the child before he is born are called prenatal environment. The mother has the responsibility of creating the prenatal environment of the child. The health of the expectant mother affects the child directly. Maternal care is necessary for both mother and child.

2. Postnatal environment.

- (a) The home and all the things which surround him.
- (b) Persons in his home.
- (c) Children with whom he plays.
- (d) Neighbors and the whole community.
- (e) Climate and geography.
- (f) Schools, churches, and other social and natural organizations.

C. Is heredity more important than environment?

It is a debated question. No one can answer it satisfactorily. The inborn capacity is limited by inheritance. The subnormal child cannot be made a normal person by putting him in a good environment. But we all agree that wise care, proper training, good habit formation, and the best opportunities for development can affect the bad inheritance very much. Although no kind of environment can cure inborn deficiencies, suitable surroundings are able to help the child to be a better one.

X. The Mortality of Mothers and Children

The death rate of mothers and children. We have no special registration or record of the death rate of mothers and children in China; therefore, the accurate

figures cannot be given. From my experience, I observe that the death rate is very high, probably much higher than in most countries.

A. The maternal death during pregnancy and child birth.

A great number of women die during pregnancy and child birth. Abortion and still birth are the chief causes of mother mortality.

B. The causes of maternal death.

1. Venereal diseases--Either syphilis or gonorrhoea is a serious menace to the health. Abortion and still born are unavoidable in many cases.
2. Hygienic care--Because of a lack of hygienic training, many expectant mothers do not know how to take care of themselves during pregnancy. Proper diet, moderate exercise, and good ventilation are neglected.
3. Lack of trained physicians and midwives.
No persons had specialized on this subject twenty years ago. Although recently many students have taken up work in medicine and nursing, the number is still far too small in proportion to the population. There are still many rural people who have never heard of physicians and nurses specially trained in this field. The mortality for rural women is much higher than for women who live in cities.

C. Infant mortality.

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Both the birth rate and the death rate of children are pretty high. This is not uncommon, for one mother bears about ten children, of whom only two to five live till maturity. Some of them are still born, some die within seven days, and some die within several years.

D. Causes of infant mortality.

1. The unskillful midwife. Children who die on the sixth or seventh day after birth often owe their death to the unclean hands of the midwife adjusting the cord of the child.
2. Venereal diseases--Syphilis results in abortion, in children still born at term, or born alive with such enfeebled vitality that they survive only for a few days or may be for some months.
3. Improper feeding--Many women cannot or do not nurse their babies themselves. Wet nurses can hardly have the same milk as the mothers'. Some women of the poorest class cannot get sufficient food, so that the milk is affected. During the process of weaning children cannot be fed properly by the artificial feeding.
4. Communicable diseases. It has been treated on "The Care of Child from 2 to 6 years of age."

XI. The Need of Registration.

The registration or record of child-birth, whether it is still born or born alive, is necessary.

- A. It is needed for furnishing data on maternal and infant mortality, so that public hygiene work may be assisted in finding remedies for the condition leading to these unnecessary deaths.
- B. It is needed so that vital statistics may be secured. Rights to inheritance, school attendance, child labor, age of voting and military service, passport, citizenship, are all based upon this. But this important point is neglected by the Chinese government. It is hoped it may be established very soon.

XII. Child Labor and Apprenticeship

A. Status.

No laws have been designed to control either apprenticeship or child labor in China today. Many parents send their children to be apprentices or work in industries and factories, because if they belong to the poorer class, they are unable to afford to go to school and cannot be supplied with foods. For child labor has always been the cheapest labor and the apprentices are very profitable, so the employers

tend to use them very excessively.

B. The condition of working children and apprentices.

Many children under the age of twelve are employed in industries with unlimited hours and at a small wage. They work from dawn till night, and can earn only a few cents a day. Apprentices work harder, usually from dawn till midnight; but they are sometimes permitted to take a nap in the daytime.

C. The facilities in both industries and working shops are unsanitary. Occupational diseases are commonly caused. Fortunately about six years ago the members of the Y.M.C.A. had established a child labor and apprenticeship movement and created some social laws, but these laws can only be used in a few Christian factories and working shops.

SUGGESTED PROBLEMS FOR THE STUDENTS

1. Use illustrations of the life story of plants and lower animals to bring out the problems of human reproduction.
2. A doctor or nurse may be asked to give lectures regarding child birth and the care of new-born babies.
3. A visit to a hospital is a good way to study the concrete methods used in the hospital on the care

of confined mothers and new-born babies.

4. Let each girl score 2 or 3 mothers and babies and see the condition of the mothers and children. Study the death rate. Girls may make suggestions to improve the general living condition of Chinese, in order to arouse the interests of girls for the betterment of China.
5. For feeding problems, the specialist in nutrition should be consulted.
6. Use questions to make the girls recall their own childhood life and adolescent experience, and then discuss how to help adolescent girls whose mothers do not know their psychology.
7. Discuss the disadvantages of using wet nurses and mamas (servants who take care of children), and study the causes of the customs and how to remedy it.
8. Bring out the importance of choosing a mentally and physically healthy life-partner for the sake of the offspring.
9. Let girls realize the effects of heredity and environment.
10. A visit to some factory or industry is necessary, because girls may actually see the condition of child labor and apprenticeship. Then discuss the ways to improve it.

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SANITATION

Outline.

- I. Water Supply
- II. Refuse Disposal
- III. Lighting
- IV. Ventilation
- V. Food
- VI. Industrial Conditions

I. Water Supply.

A. Classification.

1. Rain and snow.

a. These forms contain impurities--Carbon dioxide and micro-organisms--especially the first that falls.

b. Water should not be collected in metal equipment as metal is injured by CO_2 .

c. Rain and snow may be used for drinking after being filtered and chemically treated.

2. Surface water--The sources of surface water are; lakes, ponds, streams, and rivers. This kind of water:

a. May contain a high percentage of organic material and a low percentage of inorganic material.

- b. May be used for drinking after the treatment with liquid chlorine or after being boiled.
- c. May be considered comparatively safe if it comes from the middle of large lakes; for here it is free from the sewage which is found along the shore; and bacteria are found and are usually killed by sunlight.

3. Ground water.

a. Shallow wells--Water in shallow wells:

- (1) Is easily polluted with sewage.
- (2) Is the vehicle of infectious organisms.
- (3) Is dangerous if the well is near sewers or drainage.

b. Deep wells--Water from deep well:

- (1) Contains little bacterial life, and much inorganic material.
- (2) Is purified by natural processes, filtered by the layers of gravel, clay, and sand under the ground.

c. Springs--Even spring water is easily polluted, if it passes through unclean ground.

- ### 4. Stored water--If water is kept in reservoirs for 4 to 6 weeks, the bacteria are killed by natural agents, (Sunlight, oxidation, and sedimentation) so that finally water from reservoirs is the purest and safest. (Difficulties from long storage)

B. The uses of water.

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1. It is a liquid carrier of nutrients for both animals and plants.
2. It is a universal solvent of foods, it serves to absorb oxygen and to eliminate waste.
3. It is a cleansing agent.
4. It helps to maintain normal body temperature.

C. Water supply and diseases--Polluted water contains infectious organisms which come from the discharges of infected persons.

1. Sources of pollution.
 - a. Sewage
 - b. Water-carried waste
 - c. Sweepings
 - d. Industrial waste in cities
 - e. Garbage
 - f. Rubbish
2. Water-borne diseases.
 - a. Typhoid fever
 - b. Dysentery
 - c. Cholera

D. Present Conditions.

1. In villages
 - a. Surface water--from lakes or rivers--is drunk without filtering or boiling. Sedimentation, however, is allowed to take place.

b. The shallow well.

- (1) It is surrounded by many houses.
- (2) It is a hole dug in the ground till the water-bearing layer is reached.
- (3) It is about 20 to 30 Chinese feet in depth and 2 to 3 feet in diameter.
- (4) It is lined with bricks or stones.
- (5) It is covered with a piece of wood or stone, or left uncovered.
- (6) It is surrounded by several cisterns for washing clothes and troughs for cattle.
- (7) It is very easily polluted.

2. In towns.

a. The shallow well

b. The deep well

- (1) It is about 50 to 100 feet in depth, and 3 to 5 feet in diameter.
- (2) Water from deep wells is more expensive, therefore only a few native people use it.

3. In big cities.

a. The shallow well--The poorer class of people use the water from shallow wells, for it is cheaper than that from deep wells.

b. The deep well--People who are not supplied from reservoirs are still using the water of deep wells.

c. The storage water.

(1) Water is conducted from a stream or a lake near the city.

(2) Water is filtered through 4 or 5 layers of sand; but the length of time is not sufficient, so that the water often is not safe.

(3) Water is drunk after it is boiled.

E. Means of making a safe water supply.

1. Surface water.

a. It should be kept in a container for 2 or 3 days, till the sediment has settled.

b. It should be boiled whenever it is used for drinking.

2. Shallow well.

a. It should be dug at a distance from sewage outlet and from clothes washing facilities.

b. The water should be boiled before it is used for drinking.

c. The top of the well should be raised from 6 to 10 inches.

d. The opening should be covered tightly to preclude surface drainage.

e. The well should be cleaned occasionally.

3. Deep well.

a. This method may be applied for villages and towns.

- b. The linings of the deep well must be of cement or brick. Polluted water should not be allowed to flow in.

4. Storage/^{of}water.

- a. The water should be stored in reservoirs for at least four weeks. If the period is shorter the water should be treated with chlorine.
- b. The water plumbing and the waste plumbing should be kept separately, no connection between them.
- c. The material of plumbing should be such as will not be injured by the mineral content of the water.

Suggested Problems for Students.

1. What is the source of the water used in your town?
Is it safe? How do you make it safe?
2. Have you ever seen village people getting water from a lake, pond, or stream? If so, what should you tell them?
3. Do you use public drinking cups in your school?
What are the dangers in doing so? What advice do you want to give to your school regarding drinking cups?
4. Why is boiled water necessary? Do you always drink boiled water?
5. State the dangers of the public bathing place in your

home town.

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6. What is the source of your local ice supply? Is it safe?
7. Why is water necessary for human beings?
8. How much money does your family or school spend for water yearly?
9. How can you economize on the expense for water supply?

II. Refuse Disposal.

A. Sewage.

1. Methods of disposal.

- a. Pit--It is especially suited to rural districts.

(1) Construction.

- (a) A hole in the ground without any cover--

Only used in few remote villages.

- (b) A hole in the ground over which a seat is placed. Shed or small house is built over the seat.

(2) Essentials of improvement.

- (a) The privy vault should be made inaccessible to animals, chickens, rats, and flies.
- (b) The privy house should be fly-proof.
- (c) The pit should be dug approximately three feet square and five feet deep.

- (d) The pit should be dug in dry, well-drained ground.
- (e) The pit should be dug at a distance from the well, and at a lower level, in order to prevent contamination.
- (f) The hole should be covered when it is nearly filled. The seat and the house should be moved over the new hole.

b. Pail--This is a universal method in China. In southern China it is put in the house.

(1) Disadvantages.

- (a) The persons who do the task always do it in the quickest way rather than the right way.
- (b) The odor is liable to fill the house.
- (c) The can is cleaned outside the gate, with the result that infectious material is liable to be spread.

(2) Means of improvement.

- (a) The can should be emptied at least once a day if the pail is put in the house, and once or twice a week if the pail is put in a privy.
- (b) The can should be covered carefully.
- (c) The box and the can should be cleaned

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- (d) A disinfectant should be used regularly, and especially in summer time a deodorant should be used.

c. Water carriage method.

- (1) This system is used only in big cities.
- (2) Discharges are emptied in the sewers and then carried into the river near the city.
- (3) Means of improvement.
 - (a) The sewage discharge must be small enough for its mineralization.
 - (b) The sewage should be treated with some inexpensive chemical to disinfect it before it is emptied into the river.
 - (c) The sewers should not be discharged into any small streams nearby which are used for bathing.
 - (d) The sewers should be discharged into the ocean if possible, but the level of the pipe should be below low-tide level.
 - (e) The water carriage toilet, seat, and lid should be kept clean.

B. Garbage.

1. Care of garbage in the individual home.
 - a. Food waste should never be left standing in a sink, or in any open container, nor should

it be thrown into the yard.

b. Garbage should be removed promptly.

c. Garbage--can lids should fit so well that they can not be knocked off by cats or dogs.

2. Means of disposing of garbage.

a. Individual.

(1) Table waste.

(a) Feeding--It may be fed to chickens, dogs, and pigs.

(b) Burning--If no use is made, it should be burned.

(c) Burying--It should be buried for fertilizer. The care should be taken that it is buried deeply enough so that it will not be uncovered by cats or dogs, but not so deeply that air can not reach it and effect decomposition.

(2) Dry waste.

(a) Both wrapping paper and newspaper should be folded and sold for paper making.

(b) Rags should be washed ready to be sold.

(c) Boxes should be burned if they can not be used.

(d) Ashes should be dumped and put on low ground for fertilizer.

(e) Empty cans should be washed thoroughly and kept ready to be used.

b. Municipal.

- (1) Feeding--Table wastes are used to feed hogs.
- (2) Dumping and filling--Ashes are dumped and used for filling low roads.
- (3) Burying--Garbage which is of no value should be buried for fertilizer.
- (4) Incineration--Garbage which cannot be disposed of by methods already given should be burned.

Suggested Problems for Students

1. What method does your school use for the disposal of sewage? Is this a satisfactory method? If not, what devices do you want to suggest?
2. State the effects of improper sewage disposal. Is there cholera or any other water-borne disease in your community?
3. How does your school dispose of the garbage?
4. Name the ways in which improper methods of garbage disposal affect health.
5. What should be done with house refuse in the farm home, in a country school, and in a city home?
6. What are the dangers of having ponds around the city wall?

7. How do you dispose of table waste? Is it a good way to give it to beggars? Why?
8. How can you improve conditions with regard to privacy in the disposal of excreta in your community?
9. Have you ever seen that people wash their clothes in the stream where the water may be used as drinking supplies? What are the disadvantages of doing this?

III. Lighting

- A. Natural lighting--The sun is the source of natural lighting.
 1. The essentials of natural lighting.
 - a. Color and texture and lighting--The reflection of light varies with the color and texture of the walls, floor, and furnishings in the room.
 - b. Windows and lighting.
 - (1) Windows must be sufficient in number.
 - (2) They should be properly placed.
- B. Artificial lighting.
 1. Classification.
 - a. Candle--Now it is used for decoration and certain festivals.
 - (1) A large amount of oxygen is consumed.

- (2) A large amount of carbon dioxide and heat are given off.

b. Kerosene.

- (1) The light would be good if it is burned in a proper lamp.
- (2) The cost is low.
- (3) The danger of explosion may be reduced by always keeping the lamp filled nearly to the top, but not too full.
- (4) The wick should be kept clean and smooth, thereby the combustion will be more complete.

c. Acetylene.

- (1) It is produced by adding water to lime.
- (2) It is used on bicycles, automobiles, ricksha, and laboratories.

d. Electricity.

- (1) It is steady, and very little heat is produced.
- (2) It can not vitiate the air with CO_2 or other products of combustion.

2. The essentials of artificial light.

- a. It should be adequate in intensity and suitable according to the requirements of the room.
- b. It should be evenly distributed.
- c. It should be harmonious with the decorations in the room.

d. It should be properly placed;--for example,
in the study it should come from the left
side.

e. It should not be too intense for the eyes.

3. Special requirements for lights.

a. In a school.

(1) Light should always come from left side.

(2) Light should be above the line of vision
of the children.

(3) Light should be covered by a dark green
shade if it is very intense.

b. In a kitchen.

(1) Direct light over the stove.

(2) Indirect and even light at other places.

c. In a living room.

(1) Indirect.

(2) Even.

d. In a hall--Indirect light should be applied.

e. In a bedroom--Drop light is desirable.

f. In a bathroom--Ceiling light should be used.

g. In a public building.

(1) Indirect.

(2) Properly placed.

(3) Evenly distributed.

h. In a factory or workshop.

(1) The light should be placed near the ceiling.

- (2) The light should be adjusted close to the machine to give the maximum amount of light where it is most needed.
- (3) The lights should be spaced at reasonable distance from each other.
- (4) The walls and ceilings should be painted with light colors.
- (5) The eye-shade should be used by the workers under an intense light.

Suggested Problems for Students

1. Have you ever studied in twilight in a ricksha, in bed? What are the disadvantages in doing so?
2. Why is natural light necessary for human beings?
3. Is the light in your study adequate?
4. What are the essentials of artificial light?
5. Why is the light best coming from the left side?
6. Why must many of us Chinese students wear glasses?
7. What are the effects on your eyes if you go to a bright place from a dark place? Why?
8. Why should the walls of your sleeping room not be too bright?
9. State some methods to prevent the excess of natural light.
10. Why should a child often be exposed to sunlight? How?

A. The Needs of Ventilation.

1. The impurities of an occupied room.
 - a. The products of respiration--carbon dioxide moisture, and organic matter.
 - b. The products of combustion from fire and light.
 - c. The odor from human bodies.
2. The ill effects of impurities.
 - a. Feeling of dullness, nervousness, sleepiness, and at worst, perhaps even faintness.
 - b. Loss of appetite.
 - c. Decrease in vital activities.
3. The amount of air needed by each person.
 - a. An adult, at rest, needs about 3,000 cu. feet of air per hour. Children and sick persons need more.
 - b. A room 18 feet by 18 feet by 9 feet would furnish, without ventilation, required air for one person for one hour, or more.

B. The Method of Ventilation.

1. In the house.
 - a. Natural ventilation.
 - (1) Windows--should reach nearly or quite to the top of the room, and should be opened frequently.

(2) Double windows--They are desirable for^{136.}
the preventing of the draft and storm,
in extreme climates.

(3) Doors.

(4) Openings of ceilings.

b. Artificial ventilation.

(1) Paper fans

(2) Electric fans.

2. In a school.

a. Natural ventilation--Windows:

(1) Should be adequate in number.

(2) Should be kept open. Window boards should
be used to prevent direct draft.

(a) At least one hour in each morning.

(b) At least two minutes at the end of
each class period.

b. Mechanical systems--Used only in schools and
large buildings. Expensive and not always
satisfactory.

c. Three factors of comfort.

(1) Temperature--50° to 68° F.

(2) Humidity--Should be in a proper proportion
to the temperature. 35 to 50 percent of
relative humidity is desirable.

(3) Air movement--Should have a constant current
of motion.

C. Three important Factors in Ventilation.

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1. Temperature--The adjustment of temperature is very important, for it affects the body heat.
 - a. Body temperature--98.4° F.
 - b. House temperature--60 to 68° F. is comfortable, if air is properly humidified.
2. Humidity.
 - a. Absolute humidity--The greatest amount of water which could be present in a given volume of space at a given temperature.
 - b. Relative humidity--The amount of water present as compared with the amount which might be present (absolute humidity) at that temperature.
 - c. Relative humidity for the rooms in the house--
The comfortable humidity is from 35 to 55 percent.
 - d. Effect of humidity on body heat.
 - (1) The body loses heat by conduction more rapidly as humidity increases.
 - (2) The body loses less heat by radiation as the humidity increases.
 - (3) The body loses less heat by evaporation as the humidity increases.
3. Air movement--The loss of the body heat is considerably affected by the degree of air movement. Drafts cannot be tolerated well by people whose resistance is low.

D. The Interrelationship of the Three Factors.

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1. In a closed room, if both temperature and humidity are high, people will feel uncomfortable, and their breathing is slightly altered by the high percentage of CO_2 . While the air is cool and in motion, people will not be affected even if CO_2 increases to 0.5 percent.
2. If a room has a low relative humidity and a high temperature, the loss of body heat arises.
 1. Chiefly through evaporation.
 2. Partly through radiation.
 3. Very slightly through conduction.
3. If air has a high relative humidity and lowered temperature people will feel chilly. We feel chilly on a foggy morning.

Suggested Problems for Students

1. State how our bodies lose heat by radiation, conduction, and evaporation.
2. How is each of these affected by increased humidity?
By decreased humidity?
3. How is the amount of heat required for comfort affected by the kind and amount of clothing?
4. What are the changes that occur in the air of occupied rooms?
5. How does fresh air enter your schoolroom, your sleeping room, and your study room in winter time?

6. Do you sleep with your windows open? Why? If the wind is too strong what will you do to prevent the draft?
7. Is the system of heating your room a satisfactory method? Why?
8. State the reasons that many girls catch cold very easily.
9. What are the effects if one studies in a poorly ventilated room and sleeps in a room with closed windows?
10. Explain why increased humidity makes hot weather hotter and cold weather colder.

V. Food

A. Sanitary Aspect of Street Markets.

1. Present types of markets.

a. Meat and fish

(1) Inspection--the meat must be stamped but it is never actually inspected.

(2) Preservation.

(a) Cold storage--This method is used only in some markets in big cities during the summer time.

(b) Drying--The meat is cut into strips and hung out-of-doors.

(c) Canning--This is a universal factory method of preservation of meats in China.

(d) Salt--Salt meats with several kinds of sauces.

(e) Chopping and drying.

(3) Fresh meat sold at the market.

(a) On the meat shelf in a shop.

(b) In a kind of glass chest.

(c) In a kettle ready to be sold to the poorest people (This meat, of course, is cooked before it is sold)

(4) Fish

(a) May be sold in the fish market.

(b) May be sold along the street.

b. Cereals--May be sold in the cereal shop or grocery stores.

c. Vegetables and fruits.

(1) They may be sold in vegetable market under comparatively sanitary conditions.

(2) They may be carried either by a person or by a cart and sold along the street.

2. Means of improvement.

a. Meat

(1) The meat should be inspected carefully, for certain diseases may result from

eating spoiled meat.

(2) The method of marketing should be improved.

Cold storage is a good method.

(3) The animal should be examined before slaughtering, for many animals have diseases which may affect the health of man.

b. Fish.

(1) Live fish should be kept in clean water.

(2) Fresh fish should be kept in cold places.

(3) Spoiled fish should never be sold.

(4) Salted fish should not be exposed to dust or flies.

c. Cereal--Flours should not be exposed to dust.

d. Vegetables and fruits.

(1) Should not be freshened by dirty water.

(2) Should not be exposed to street or flies.

B. Sanitary Aspects of Care of Food in the Home.

1. Meat.

a. Should be put on the cold shelf.

b. Should not be exposed to insects, screened container should be used.

c. Should be properly cooked.

d. Cooked meat, bought from the market, should be steamed or cooked before being eaten.

2. Fish--Should be cooked immediately after it is

bought, and not allowed to stand.

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Suggested Problems for Students

1. Discuss the dangers of eating the food which has been exposed to dust and flies as we often see in China.
2. State the relationship between contaminated food and contagious diseases.
3. Analyze the methods of keeping and handling foods in your local market. Are these methods sanitary? Why? What do you tell the people who must purchase these foods?
4. Describe the main types of food poisoning in your school or home. How would you prevent it?
5. What foods should be kept in cold storage? Why?
6. Why should the windows and doors of the kitchen keep out flies? If people do not approve of this method, how do you explain to them?
7. Are there any dangers in the ice used in the cold storage? What do you suggest to the people who use it?

VI. Industrial Conditions

A. Sanitation of Factories.

1. Space.

- a. Work rooms should not be overcrowded.
- b. Passage ways should not be narrow.

2. Ventilation.

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a. Natural

(1) Windows--Should be near the ceilings and be kept open.

(2) Doors.

(3) Opening in the ceilings.

b. Mechanical--Electric fans and dust removers.

3. Temperature--Temperature should be kept from 55° to 68° F.

4. Humidity--Relative humidity should be between 35 to 55 percent.

5. Lighting--Both natural and artificial lighting are treated under "Lighting".

6. Water supply.

a. Boiled water or chemically treated water should be supplied.

b. Individual cups should be provided.

c. Drinking fountains should be so adjusted that the water bubbles up high, and it is impossible for the workers to place their lips against the openings.

7. Washing facilities.

a. Common towels should not be used.

b. Paper towels should be provided if there are no individual towels.

c. Workers should be urged to wash their hands before eating.

8. Toilets.

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- a. The number of toilets should be adequate.
- b. Water closets for the two sexes should be separated, and as far apart as possible.
- c. The seats should be kept very clean; a disinfectant and deodorant should be used occasionally.

9. Spittoon--Workers should be prohibited from spitting on the floor of the working room or other places. A spittoon should be provided.

10. Rest rooms

- a. Should be well ventilated.
- b. Should not be overcrowded.
- c. Should be kept clean.
- d. Should not be used for smoking.

11. Sleeping rooms.

- a. Should be away from the noise of the machines.
- b. Should be separated from workrooms.
- c. Should be adequate in number.
- d. Passage ways should be so arranged that the building can be easily emptied in case of fire.

12. Dining rooms--The utensils in dining rooms should be kept clean and well disinfected.

B. Occupational Dangers.

1. Accident--The causes of accidents:

- a. Inexperience of the workers. 145.
- b. Over speeding of the machinery.
- c. Overcrowding of workers during the hours of labor.
- d. Fatigue of the workers.

2. Diseases.

- a. Hook worm--Infected from the sewage through bare feet or poor shoes.
- b. Lead and silver poison--Caused by breathing in the dust of lead and silver.
- c. White phosphorous--Caused by the fume of phosphorous in the match factories.
- d. Carbon monoxide poisoning--Caused by CO in mines, especially coal mines, or at coke ovens.
- e. Tuberculosis--Caused by workers inhaling the particles to be found in cotton and rug factories, or wherever stone or marble is being cut, or abrasives are used; Sharp dust is very dangerous and predisposes to all types of respiratory diseases.

3. Prevention.

- a. By the government.
 - (1) Laws--Definite legal standards should be formulated to govern the construction and operation of factories.
 - (2) Inspection and supervision of the sanitary

conditions of work places should be given. 146.

- (3) Medical examination--Physical examinations of the workers should be given by a government physician to check upon results of examination made by company physicians.

b. By the employer.

- (1) A good system of ventilation should be provided for carrying off the dust and fumes from the workroom and letting in fresh air.
- (2) A special suit of clothing should be provided; it may be worn during the work, laid aside at the close of the day, and frequently washed when the workers are engaged in work where poisonous gases may be formed.
- (3) A physician should be employed to examine the workers who are exposed to poisonous gases frequently and regularly.

c. By the employee.

- (1) He should wash his hands, face, and nostrils thoroughly before eating and drinking, and after working.
- (2) Hot water bath should be taken at least three times a week.

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- (3) The fingers should not touch the mouth or eyes during work hours.
 - (4) Smoking during work hours should be prohibited.
 - (5) Respirators or masks should be worn as protection against fumes and dust.
 - (6) Gloves should be worn for protection from poisonous materials.
 - (7) Large protective spectacles or goggles should be used in some factories.
 - (8) Eye shades should be used if the work is carried on under excessive light.
 - (9) Well fitting work clothes should be worn. Unbuttoned blouses and torn sleeves should not be allowed to be worn.
 - (10) The worker should never allow his familiarity with danger to relax his attention to sources of injury by machinery.

B. Child Labor Problem--Many children under the age of ten are employed in factories, especially in match and cigarette factories.

1. Disadvantages of child labor.

a. Health.

- (1) The physical development of children is easily retarded.
- (2) Children are more prone to accidents than adults.

(3) Children are more susceptible to industrial poisons than adults.

b. Education--They have no chance to get the education they should have.

2. The prevention of child labor.

a. Legislation--Child labor and school attendance laws should be established.

(1) Age--Under a certain age (14 years by the Chinese system of recording ages) should not be employed.

(2) Wage--Should be regulated.

(3) Working hours--Eight hours a day and 48 hours a week.

b. Social opinion--Child labor laws should be enacted in all the provinces of China. If government does not establish the laws, social opinions should be aroused and thereby cause laws to be passed.

Suggested Problems for Students.

1. Have a visit to some local industries, if possible, and see what are the conditions of the factory and employers. Are there some women workers and child laborers? Are the working space, ventilation, temperature, etc., hygienic? Is the wage reasonable?
2. Discuss the disadvantages of children and pregnant mothers working in factories.

3. State the methods by which the condition of appren-^{149.}
tices in your local workshops can be improved.
4. Illustrate at least four ways in which occupations
may affect the health of the worker.
5. State briefly the importance of
- a. Factory inspection.
 - b. Medical inspection.
 - c. Compulsory vaccination.
 - d. Fatigue.
 - e. Working-day limits and legislation restricting
labor of women and children.

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Outline.

- I. Purpose.
- II. Location.
- III. Grounds.
- IV. House Planning.
- V. Room Planning.
- VI. Floors.
- VII. Walls.
- VIII. Ceiling.
- IX. Curtains.
- X. Furniture.
- XI. Pictures.
- XII. Flowers.

I. Purpose.

A. Protection--The primary use of the house is for protecting people from:

1. Discomforts

- a. Wind, rain, and other climatic disturbances.
- b. Unsuitable temperature.

2. Transmission of diseases.

3. Physical strain and fatigue.

4. Mental depression.

B. Base.--The house is the basic place from which people may:

1. Secure daily life.
2. Set forth for pleasure and advantages.
3. Make contacts with the world.

II. Location.

A. Lot.

1. The size and contour of the lot should suit the type of the house which will be built on it.
2. The corner lot is better than inner ones as far as the light is concerned.
3. The cost and the future development of the lot should be considered.

B. Soil--Good soils on which houses may be built are:

1. Dry, well drained, unpolluted, and above the level of ground water.
2. Sandy or sandy loam consisting of sand and clay.

C. Natural advantages.

1. Prevailing wind--The house should be so located that the winds sweep over it fresh from the country, the sea, or the mountain before polluted by passing over cities or other dirty or smoky places.
2. Unlimited supply of good water.
3. Accessibility to the place where the head of the

family works, market, and the school.

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4. Good roads.

5. Good neighborhood and local government.

Suggested Problems for Students.

1. Why should the cost be taken in consideration?
2. Why is a permanent house desirable?
3. What style and size do you prefer?
4. Draw a floor plan for your own ideal home giving
 - a. Size
 - b. Number and location of all rooms.
 - c. Explain why you arrange the rooms in this way.

III. Grounds.

A. Style of the yard.

1. Formal style--Suitable for large private houses.
2. Natural style--Suitable for ordinary small houses.

B. The way of fixing up the yard.

1. Walls--Should be strongly built. Stones used for the bottom part and brick for the top part.
2. Trees.
 - a. The horizontal lines may be broken by a tree standing at the front of the house. Fruit trees are ordinarily planted for this purpose.
 - b. All sorts of things which are destructive of illusion may be screened.

c. A shade may be given.

3. Shrubbery

a. The use of:

- (1) To form screens and boundaries.
- (2) To give a mass of color and shade.
- (3) To frame a fine view.

b. How to plant them.

- (1) Plant the outer border heavily with a mass of dense shrubs.
- (2) Plant the refined ones for the corner of the house.

4. Vines--Good vines may be planted for covering the front porch and walls.

5. Flowers

- a. Tall flowers should be put against the wall or fence.
- b. Some flowers may be planted along the walk.
- c. Lotus may be planted in the big fish jar near the windows.

6. How to choose plants.

- a. Native trees, shrubs, flowers, should be the first choice.
- b. The color of plants should be harmonious.
- c. Blossoming plants should be considered for seasons or months.

- a. Should be so wide that two persons may walk abreast.
- b. A cement or brick walk is good.

Suggested Problems for Students.

1. What kind of grounds are you planning to have for your ideal home? Why?
2. Try to make a sketch of a plan for your own ground.
3. What are the advantages of having trees and plants in the court? How do you want to plant yours? Why?

IV. House Planning.

- A. Cost--It determines the style, shape and construction of the house.
 1. Taxes, fire insurance, repair, and the interest of the sum spent for building the house should be carefully calculated.
 2. Compare the cost for building it with the sum paid for renting it.
 3. Factors influencing cost.
 - a. Location.
 - (1) Materials--Transportation of materials is a potent factor.
 - (2) Labor.

- b. Design--The cost is affected by the design of the house.

B. Design.

1. Construction--The house should be so constructed that it is suited to the use of it. The way of planning it:

- a. Get a number of building charts and study them carefully, then select the good points of different pictures and make out a plan which is considered to be the best.
- b. Consult with an architect.
- c. Make out the final sketch of the house and rooms.

2. Style.

- a. Ancient style--Broad porch and temple roof.
- b. Local style.
- c. Occidental style.

C. Size--The size of the house is determined by:

1. The size of the family.
2. The economic condition of the family.

V. Room Planning.

- A. Living room--If the house is in native style the living room should be put in the main house and straight toward the gate.

B. Reception room--It should be put near the information room.

C. Dining Room--

1. Should be adjacent to the kitchen.
2. Should be put in a side house because most kitchens are put in side houses.
3. Should be square in shape.

D. Bed rooms

1. Parents' bedroom ought to be put near the living room if possible.
2. Children's rooms ought to be near that of the parents.
3. Grandparents' room ought to be put in one end of the main house and adjacent to the room of the women servants.
4. Guest room may be placed in a side house.
5. Cook's room should be near the kitchen.
6. Gatemens' room is undoubtedly put in the front house.

E. Library--May be located in a side house where it is more quiet.

F. Bathroom--It is better to have it near the bedrooms if the house is heated in the occidental way, otherwise it should be near the kitchen.

G. Toilet.

1. May be placed in the bathroom if plumbing system

is used.

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2. May be put in a room at the side of the main house.

The door should be fly-tight.

H. Garage--May be put either in one room at the front of the house or built on the background.

Suggested Problems for Students.

1. State the size and contour of the lot on which your ideal house will be located. Why?
2. Why is good soil necessary? What are the disadvantages of building on damp soil?
3. What are the differences between the houses located in a city and in the country? Where would your ideal house be? Why?
4. Why are good neighbors important?

VI. Floors.

- A. Color of the floor should be darker than that of the wall.
- B. Wood floors are better than brick pavement, because:
 1. It is easy to be kept free from moisture.
 2. It gives a warmer feeling than bricks in winter time.
- C. Rugs may be used if it is possible to afford them. Native rugs are more durable and also cheaper than foreign ones, but the colors and designs of rugs

should be studied.

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1. Simple designs with subdued color are desirable, because they can easily fit in with the color of the room and furniture.

VII. Walls.

Walls are the background of a room, against which furniture is placed. In painting or papering the wall there are four points which should be considered.

- A. Architecture--The wall finish must be suitable to the architecture of the house and the character of the room.
- B. Exposure of the room--North rooms demand a warm color but a cold tone, while the south rooms need a cool color.
- C. Use of the room--Wallpapers chosen should be carefully considered. It should suit the use of the room.
 1. Bedrooms--Gray, tan, or other neutral tone papers may be used for they give the effect of space and restfulness. Yellowish paper may be used for a north chamber.
 2. Children's rooms may be papered in a gay and cheerful color.

- D. The size of the room--The apparent size may be changed by the color of the walls. Deep and warm colors make the room smaller while light and cool colors make the contrary.
- E. Furniture is to go into it--The color and design of the wall should be in harmony with the furniture which goes into the room. Plain paper in subdued color is easily decorated.

VIII. Ceiling.

- A. The ceiling should be toned to match the wall surface.
- B. The higher the ceiling, the deeper the tone should be in order to bring the ceiling down. If the ceiling is too low the color must be as light as possible.

Suggested Problems for Students.

1. Why should the color of the floor be darker than that of the wall and the wall darker than the ceiling?
2. Why are native rugs most desirable?
3. Try to select the colors for the floor, walls, and ceilings of your living room, guest room and bedrooms. If wallpapers should be used, try to select the suitable kinds of papers

for your ideal home.

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4. How do the colors affect the size of the room?
5. Before you select the color and design of wall papers what points should be taken into consideration?

IX. Curtains.

A. Uses of curtains.

1. For the modification of light.
2. For privacy.
3. For hiding ugliness or defects of proportion.

B. The way of using curtains.

1. Right curtains for right windows.
 - a. Formal and street bordered house--Two sets of curtains may be used.
 - (1) Under curtains made of thin material next to the glass.
 - (2) Over curtains made of heavy and good material may be used as draperies.
 - b. Bedroom--Thin and soft and inexpensive material curtains may be used.
 - c. Informal house--May use moderately heavy curtains but not expensive.
2. The length of curtains.
 - a. In a lower floor room long curtains give a

better appearance, whereas in bedrooms curtains to the sill are better.

- b. In a large and elegant room it will need the full length curtains. However, the woodwork should be shown if it is pretty.
 - c. For narrow windows the curtains should be put back on the woodwork in order to give the space.
3. The top of the curtain--This part should be skillfully done. There are two simple ways of making it.
- a. Simply run on to the rod.
 - b. Shaped valance.

Suggested Problems for Students.

1. Are curtains necessary for your rooms? If so, how do you select them?
2. Try to select the materials and colors for the curtains of your living room and bedrooms.
3. Why should the effect of using curtains and draperies on the natural light be considered?

X. Furniture.

A. Principle of arranging furniture.

1. Center of interest.

- a. A larger object should be placed as the center

of interest.

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- b. In a great salon, one large central object on a long unbroken wall space would not be sufficient; another central object may be placed.
- c. The central object should be placed against the wall.

2. Balance.

- a. Formal balance--Objects on each side of the central feature are the same in character and size and arranged in the same manner.
- b. Informal balance--Objects on the two sides of the central feature are not in the same size and character but equal in value.

- 3. Top-heaviness should be avoided.--A large picture, hanging, or mirror should not be placed above a small chair or table. The size should be smaller and the color should be lighter than that of the lower one.

B. Ways of selecting furniture.

1. Quality of furniture.

- a. Lasting satisfaction--Good furniture will give years of satisfaction.
- b. Well constructed--Every piece should be well constructed and suited to its purpose and surroundings.

- c. Simplicity--They should be simple in structural and decorative design.
2. Personality expressed through the choice of furniture--Through the quality the object possesses the personality of the owner may be expressed. Therefore, the furniture should possess the following points:
 - a. Truth--Imitated things are the sign of dishonesty.
 - b. Furniture, hangings, pictures, and other decorative objects may suggest either a masculine quality, a feminine quality, or may be impersonal.
- C. Furniture for different rooms.
1. The hall--Every piece of furniture selected for decorating the hall should have the quality by which dignity, simplicity, and hospitality should be expressed.
 2. Living room.
 - a. Group furniture for convenience. Sofa and chair may be grouped for conversation. Centers of activity should be emphasized, and clear doorways should be left.
 - b. Order in furniture arrangement.
 - (1) Large pieces of furniture should be placed to follow the line of the room and to

balance against the four walls. 164.

(2) The shape and color of each piece should be in harmony with the wall space against which it is placed and with other pieces.

(3) Small pieces may be arranged to relieve bare pieces or places.

c. Comfortable pieces should be used to accommodate each member of the family.

d. Two or three kinds of furniture may be used more harmoniously than matched pieces.

e. No couch or chair should be so deep and soft that a person will appear awkward when seated.

3. Dining room.

a. The atmosphere of the dining room should be restful.

(1) To keep the background simple.

(2) To display very few objects.

(3) To place the table appointments in an orderly arrangement at meals.

b. The lighting of the dining room should be suitable.

(1) Successful type of light is that which concentrates the light upon the table.

(2) Candles furnish the most delightful light for the dining room, for they not only concentrate light but also produce the

interesting reflections and shadows.

4. Bedrooms--The function of a bedroom is to promote the rest and comfort.
 - a. It should be simple.
 - b. It should express the vitality of individuality.
 - c. Walls should be light in color and neutral in tone.
 - d. Variety of harmonious colors in the room is better than one color.
 - e. Furniture should be simple in design and should be individual.
 - f. Photographs and the special pictures which are too personal to be placed in the more public places may be put in the bed room.
5. Guest room.
 - a. Furniture and other things should be impersonal.
 - b. The spirit of hospitality should be shown.
 - c. Things ought to be put in the guest room:
 - (1) Comfortable bed.
 - (2) Well lighted mirror.
 - (3) Sufficient space.
 - (4) A table or a desk on which one may write.

A supply of stationery with pen and ink is necessary.

(5) A bedside table with a good reading lamp and some good books.

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6. Children's room.

- a. Good pictures which are adapted to the age of the child, They should be used until they have become familiar but not until the child will cease to notice them.
- b. Cupboards and drawers for toys, which should be put away before bedtime.
- c. The bed is placed where there will be enough fresh air, but where the light will not shine into the eyes of the child when he is sleeping.

Suggested Problems for the Students.

1. Why is a center of interest necessary in arranging furniture?
2. Criticize the arrangement of furniture in the general Chinese homes.
3. Why is informal balance better than formal balance?
4. How do you choose furniture for your own home?
5. How does the furniture express the personality of the possessor?
6. Select the furniture you are to have for your home; cut out of paper; and then put it on your floor plan.

A. Principles of selecting pictures.

1. Quality of the picture.

- a. The appeal of a picture--Pictures make their appeal to individuals through their story, their beauty of line, the quality of their color, or the interest of their pattern.
- b. The composition of a picture--The composition of a picture should be so evident that the interpretation of it may be traced.

2. Character of the picture.

- a. Avoid those which are too excited in character.
- b. Avoid those which are too sad in feeling.
- c. Avoid those which are too monotonous in design.

3. Suitability of the picture and the place where it is put.

- a. In domestic rooms the picture should not possess a distinctly social or formal quality.
- b. Too personal or religious pictures should not be put in more public rooms.

4. Framing of the pictures.

- a. The type of the frame should be in harmony with the picture.
- b. The color of the frame should be suited to the color of the picture. A little darker than

than the lightest part of the picture is best. Glass must be used for protection.

B. Ways of arranging the pictures.

1. Pictures should be in relation to the background of the room.

a. If the wall paper is patterned no pictures should be used.

b. If there is a great deal of color in the room but little patterns, the most suitable pictures will be drawings or etchings.

c. The color should be in harmony with the background.

2. Hanging the pictures.

a. Light pictures should be hung on the fairly light walls, and dark ones should be hung on dark walls or in dark corners.

b. Tall pictures hung in vertical wall spaces, and broad pictures in horizontal spaces.

c. Small pictures should not be hung next to large ones, or large pieces of furniture.

d. All pictures should be hung against the wall.

XII. Flowers.

A. Ways of selecting flowers.

1. Color scheme--The color of the flower should be

suitable to the color of the room.

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2. The color and texture of the container should be fitted to the flowers--Short stemmed flowers should be placed into low bowls, and long stemmed ones should be put in high vases.

B. The arrangement of flowers.

1. The arrangement of flowers should depend upon the beauty of line and color.

- a. Flowers which have much beauty in their lines should be so arranged as to emphasize this beauty. A single spray or a few blossoms should be used.

- b. If more than one kind of flowers are put in one container the color should be perfectly harmonious.

2. The arrangement should be in balance.

- a. The flower with the longest stem is usually placed so that its head comes above the center of the bowl. Then others should be put around the center.

- b. The mass should come toward the center and each side of the center should be equal in attraction.

3. Placing the bouquet.

- a. Tall flowers should be put below or on the level of the eye.

- b. When flowers are used in a room which has

figured wall paper, it is well to place them on a table where they may not be seen against the wall.

Suggested Problems for Students.

1. State the effects of suitable and unsuitable pictures for interior decoration.
2. Why should exciting, sad, or monotonous pictures be avoided?
3. What are the relations between wall paper and pictures?
4. Analyze the ways which are being used generally by Chinese homes in selecting, framing, and hanging, pictures. Are there any points which should be improved? Why and how?
5. Try to obtain some flowers for decorating your dining room.
6. What important points should be taken into consideration in selecting flowers for decorating purposes?

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- I. Organization of Household.
- II. Social Conditions Affecting the Household.
- III. The Household Income.
- IV. Saving.
- V. Food.
- VI. Shelter.
- VII. Clothing.
- VIII. Operating.
- IX. Development.
- X. Successful Family.

I. Organization of Household.

A. Pre-historic.

1. Material element.

- a. Shelter--cave or net
- b. Food--the flesh of animals which have been hunted.
- c. Clothing--the skins of animals.

2. Persons--No one can tell exactly, but various theories have been established by various authors.

- a. The theory of promiscuity.
- b. The theory of the matriarchate.

c. The theory of the patriarchate.

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B. Nomadic Stage.

1. Material element.

- a. Shelter--Tents which were moved from place to place in search of better pasture.
- b. Food--They had simple methods of cooking, and began to eat grains.
- c. Clothing--They had some kinds of cloth and the skins of animals which were cut like clothes.
- d. Operating--They had rudimentary household equipment.

2. Persons--Patriarchal family.

- a. The father was the head of the whole family.
- b. The wife was won by purchase.
- c. Slaves were commonly held by the family.
- d. The offspring inherited the property and home through their father.

C. Agricultural Stage.

1. Material Element.

- a. Shelter--The tents were fixed and organized into villages and communities.
- b. Food--The fields were cultivated, and people lived on the grains and the flesh of domestic animals.
- c. Clothing--The clothes were made of cotton and silk.

d. Operating--Equipment for household work was ^{173.}
all created but simpler than we have today.

2. Persons.

- a. Large families existed.
- b. The oldest male was the head of the family.
- c. Polygamy.
- d. The offspring were the most important property
of the father.

D. Industrial stage--We have not really passed into
this stage.

E. Modern Family.

1. The structure of the household.

a. Material.

- (1) The house in which the family lives.
- (2) Equipment and supplies used for the house-
hold.work.
- (3) Furniture and decorations.

b. Persons.

- (1) The husband and wife.
- (2) The children.
- (3) The aged parents and occasionally dependent
relatives. (In China the large family
system still exists in some provinces.)
- (4) The servants and the slaves.
- (5) The lodgers and boarders who give a
reasonable sum of money for room rent and
board fee.

2. The type of household.

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a. Domestic household--Naturally composed by blood relationship.

(1) The size of the domestic household.

(a) Large family--The "Families of ten generations" are occasionally found.

In general, families have three or four generations.

(b) Small family--two generations, sometimes three generations live together.

(2) Economic classification of domestic household.

(a) Farm household.

1^o Supply farm products for market.

2^o Find the source of household supplies from the farm rather than by purchase.

(b) Village or town household.

1^o Purchases commodities rather than produces.

2^o Supplies the wares of shop.

3^o Produces the laborers for factories.

(c) City household.

1^o Usually no household products for outside market.

2^o Consumption is more extensive than production.

b. Institutional household--Composed of a group ¹⁷⁵.
of persons who are not related by blood, but
joined together for convenience.

(1) Dormitories.

(2) Hotels.

(3) Boats.

(4) Trains.

3. The functions of the household.

a. Biological function--perpetuate the race.

(1) Marriage of man and woman.

(2) Birth of children.

(3) Care and nurture of children.

b. Economic function.

(1) Production--provides the needs of the family.

(2) Consumption--the utilization of the commodities for the family.

c. Social function.

(1) Perpetuates civilization and social tradition.

(2) Creates the fundamental morality of the society.

(a) The relationship between husband ^{and} wife.

(b) Cooperation.

(c) Unselfishness.

(3) Care and nurture of children.

(a) Takes care of and feeds children in

their dependent years.

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(b) Develops thoughtless and ignorant children into thinking, judging, feeling, and acting adults.

(c) Trains the children.

1'. Habit formation.

2'. Attitude toward manhood.

(4) Takes care of aged ones.

II. Social Conditions Affecting the Household.

A. Tradition and conventions in regard to the household.

1. Women are to be obedient to their husbands.
2. The glory of the large family.
3. Parents arrange marriages for their children.
4. Early marriage.
5. The children should support their parents.
6. Sons must not appear in public for three years after a parent dies.
7. Girls have no right to receive school education.
8. Widows should not marry again.
9. Men and women cannot transfer things directly by hand but must place them on a table or other object.
10. Girls must have their feet bound.
11. The concubinage system is recognized.

B. Statute law and the household.

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1. The son is required to support his parents.
2. The wife has no right to divorce.
3. The daughter has no right to inherit the property of her father.
4. Definite taxes are imposed.

C. Social opinion and the household.

1. We do not now recommend the large family system.
2. Widows may have the right of remarriage.
3. We do not agree with the custom of feet binding, of concubinage, or early marriage, or of inequality of position between husband and wife.
4. Girls should have the same education as boys.
5. We should have freedom in selection of mates.

D. Educational organization and the household.

1. Many schools and colleges have been established, so that both boys and girls have a chance to study.
2. Most of the students do not approve the present bad family customs of the household.
3. The living standard of the household is being improved by highly educated persons.

E. Religion and the household.

1. Confucianism.
 - a. Respectful to aged persons and dead ancestors.

- b. Great value set upon the male offspring. 178.
c. Unequal position between husband and wife.
d. Filial respect is more important than all other qualities.
e. Polygamous custom exists.

2. Polytheism.

- a. Superstition.
b. Fear gods and spirits.

3. Christianity and household.

- a. The use of paper imitations of household and personal belongings to be burned for the dead is decreasing.
b. The concubinage custom is changing gradually.
c. The position of the wife is growing to be equal to that of her husband.
d. Girls and boys are of equal value in some homes.

F. Industry and the household.

1. Condition at present.

- a. Lightens the household work by suitable utensils.
b. Gives more time.
c. Helps many women who are mistreated by the people of their husbands' family to be independent.
d. Takes the members from home.
e. Monopolizes prices.
f. Employs children under the age of ten and

women at any time.

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- g. Infects many employees with occupational diseases.
2. Needed improvements in the conditions of industrial workers.
- a. Legislation should be enacted.
 - (1) Child labor.
 - (a) Age--Under a certain age children should not be employed.
 - (b) Wage--Should be regulated.
 - (c) Working hours--Eight hours a day and 48 hours a week.
 - (2) Protection of mothers--A woman should not be employed six weeks before and after childbirth.
 - (3) The sanitary facilities of factories should be improved.

III. The Household Income.

- A. The sources of income.
 - 1. Money income.
 - a. Outside labor income.
 - (1) Wage.
 - (2) Salary.

b. Outside management income. 180.

(1) Business organizer.

(2) Business decision maker.

(3) Risk bearer.

c. Investment **income**--The return of invested funds.

2. Capital income.

a. Building and land rent.

b. Equipment for household productions.

c. Utensils which may be rented for money.

d. Products from farm and gardens.

B. The method of increasing the household income.

1. Wise spending.

a. Budget making.

b. Record keeping.

2. The satisfaction of the members obtained through skillful household management.

3. Cooperation.

a. Everyone, even children, should take responsibility for the consideration of spending.

b. Everyone has to take a part in the care of commodities and furnishings used in common.

C. Distribution of household income.

1. The kinds of household expenditure.

a. Saving--either money or assets.

b. Food.

c. Shelter.

- d. Clothing. 181.
- e. Operating.
- f. Development.
2. The budget and income distribution.
- a. Spend wisely and evenly.
- b. Eliminate the nonessential purchasing.
3. Record and distribution of expense.
- a. Review of purchases and costs.
- b. Coming year's budget making may depend upon it.

IV. Saving.

- A. Purpose of saving--~~pro~~tection for:
1. Financial emergencies.
2. Decreased income.
- a. Unemployment.
- b. Reduced wages.
- c. Sickness.
- d. Accident.
- e. Climatic conditions.
- f. Old age.
- g. Death of the main earner.
3. Increased or deferred expenditure.
- a. Home ownership.
- b. Business.
- c. Farm.
- d. New equipment.
- e. Education.

f. Travel.

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g. The wish for power and position.

4. To insure the future income.

B. Methods of saving.

1. Money.

a. Saving bank.

b. Life insurance.

c. Mortgage.

d. Other investments.

2. Immovable assets.

a. Land and garden.

b. Building and equipment and other goods.

V. Food.

A. Functions of food.

1. Body building and regulating.

2. Growth promoting.

3. Energy producing.

4. Body repairing.

B. Classification of food.

1. Starch.

2. Fats.

3. Protein.

4. Minerals.

5. Vitamin.

C. Factors in the cost of food.

1. The level of food prices in local market.
2. The cost of production--seed, rent or interest on the ground used, labor, tools or machinery, waste from the climatic condition or disease, and loss in harvesting.
3. The distribution--Transportation, packing, handling, wrapping, and delivery.
4. The preparation--Cost of fuel, loss in preparation, and waste in digestion.

D. Housewife and food.

1. She should know how to select and prepare the food.
 - a. She should plan with the dietetic rules.
 - b. She should spend the money for food in accordance with the budget.
 - c. She should know the market facilities.
 - (1) Whether foods are in season or not.
 - (2) Quality of food as well as quantity.
 - (3) Price of foods.
 - (4) Substitution of expensive food by cheaper ones, but not lower the quality.
 - d. Amount of food.
 - (1) Plan the menus ahead.
 - (2) Estimate the amount of food according to the number and age of the family.
 - e. Amount of food.

- f. Cook the food properly and in a sanitary manner.
 - g. Serve the food attractively.
2. She should know how to guide the social life of the family at meal time.
- a. Table talk.
 - (1) Individual happenings.
 - (2) News.
 - b. Training of children.
 - (1) Attitude of talking.
 - (2) Self-control and self-denial.
 - (3) Eat all kinds of food which mother gives them.

VI. Shelter.

- A. The functions of the shelter.
 - 1. Human beings are protected from the discomfort of hot and cold weather, wind, rain, and snow.
 - 2. Commodities are secured.
 - 3. Properties are safeguarded from the spoilage by weather.
 - 4. Children are reared.
- B. The standard of the shelter is determined by:
 - 1. Income.
 - 2. The number of the family.

3. Location.

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4. Occupation.

C. The essentials of the shelter.

1. Location.

a. City.

b. Town.

c. Village or farm.

2. Type.

a. Single--family detached house.

b. Single--family semi-detached house.

c. Two or more family--detached house.

3. Sanitary condition.

a. Access to sunlight and outer air.

b. At least one window per 12 sq. ft. of floor space.

c. Unpolluted ground or drainage.

d. Temperature and humidity must be properly arranged for.

e. Children should not sleep with their parents.

4. The number of rooms--A small family with a moderate income.

a. One living room.

b. One dining room.

c. One kitchen.

d. One bath room.

e. One store room.

- f. Three sleeping rooms. 186.
- g. One servant room.
5. The factors of the cost of the shelter.
- a. Location.
 - b. Environment.
 - c. Convenience of the house.
 - (1) Light.
 - (2) Water.
 - (3) Heat.
 - d. Construction of the house.

VII. Clothing.

A. Purpose.

1. Protection.

- a. Protects human being from discomfort.
- b. Maintains the constant body temperature.

2. Decoration.

- a. Satisfies one's own sense of the beautiful.
- b. Gratifies the eyes of others.

B. Classification of clothes.

1. Outwear.

2. Underwear.

3. Street clothing.

4. Accessories.

C. Essentials of clothing.

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1. Fashion--do not go to the extreme.
2. Comfortable.
3. Adapt to the weather.
4. Esthetic--Arrangement of color, line, and form.
5. Suitable to the occupation.
6. Washable.
7. Durable.

D. Clothing Economy.

1. The cost of clothing.
 - a. The expenditure of clothing should be consistent with other expenditures, and based upon the clothing budget.

E. Clothing Economy (Continued)

1. The wise selection of material is a method of reducing the cost of clothing.
2. The care of clothing.
 - a. Adequate storage.
 - (1) Protect it from dust and sunlight.
 - (2) Fold it whenever remove it, underwear should be exposed to air.
 - (3) Keep it in a convenient place for immediate use.
 - b. Protective garments--During rain and work.
 - (1) Aprons.
 - (2) Overshoes.

(3) Raincoats.

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(4) Umbrella.

c. Frequent change.

d. Immediate repair.

F. The materials of clothing.

1. Linen.

2. Cotton.

3. Silk.

4. Wool and fur.

G. The factors which influence clothes.

1. Family income.

2. Location.

3. Occupation.

4. Environment.

5. Social and personal taste.

6. Ability of mother.

VIII. Operating.

A. The items for operating.

1. Heat.

2. Water.

3. Light.

4. Laundry.

5. Servants' wages.

6. Telephone.

7. Purchase and repair the household supplies. 189.

8. Furnishings.

B. Factors in operating.

1. Type of house.

2. Food preparation and serving.

3. Clothing.

4. Occupation.

5. Location.

C. Methods of controlling the expense of operating.

1. Heat.

a. Fuel selection.

b. Method of cooking.

c. Construction of fireplace.

d. Register and radiator of stove.

e. Air movement.

2. Light.

a. Put it at a reasonable distance.

b. Turn off whenever do not use it.

c. The color of the walls should be light.

d. Utilize the natural light.

3. Water.

a. Laundry should be considered.

b. Shallow well water may be used to water flowers
and splash the ground, or sprinkle the lawn.

4. Servant wage.

a. Do not need too many servants if the housewife

can direct them well.

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b. Wet nurse may not be needed.

IX. Development.

A. Definition of expenditure for development.

1. Expenditures for the personal and social satisfactions of life--as contrasted with expenditures for the material necessities, food, clothing, and shelter--is called the expenditures for development.

B. Classification of development.

1. Mental.

a. Education.

(1) School attendance.

(2) Home library.

(3) Magazines and newspapers.

(4) Music, art, and drama.

b. Travel.

2. Physical.

a. Health--Fees of doctor, dentist, and nurse, and for medicine.

b. Recreation--Play, music, clubs, vacation, trips, and so forth.

3. Social.

a. Entertaining

b. Social gifts.

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4. Spiritual.

a. Service to others.

b. Religious activities.

c. Benevolence.

C. Importance of Development.

1. To satisfy the personal life.

2. To establish the well-rounded living.

3. To increase the interest of daily living and get rid of monotony.

4. To improve the standard of living.

D. Factors which determine the standard of development.

1. Income.

2. Location.

3. Occupation.

4. Personal taste.

E. Dangers involved in development.

1. Too much money spent for food, shelter, clothing; therefore, no money for the expenditure of development.

2. Spending for harmful so-called development.

a. Gambling.

b. Drinking.

c. Smoking.

d. Adultery.

A. Stability of the family.

1. Unmarried young people.

a. Should not marry too early.

b. Should select mates by themselves.

The way of selecting the mate should be based upon:

(1) Thorough understanding.

(2) True love.

(3) Common interest.

(4) Good health.

(5) Suitable ability to cooperate in maintaining a home.

2. Married people--Almost all women who have married early are uneducated.

a. The husband should:

(1) Develop true love for her.

(2) Help her to obtain an education, and to realize her responsibility.

(3) Not repudiate her, especially as without education she cannot live independently.

b. The uneducated wife should

(1) Not think of marriage simply as a protection, as a source of clothes and food and shelter.

(2) Realize her husband's sacrifices in marriage to an uneducated wife.

(3) Make herself as good a helpmeet as she can.

B. Woman and successful family.

1. The preparation for a housewife.

a. She should have proper training for wifhood and motherhood.

b. She should have proper knowledge of and practice in managing a household.

2. The qualities of a successful woman.

a. She should know how to make her family happy.

b. She should know how to manage her home on scientific principles.

(1) Procedure.

(a) Plans her work ahead.

(b) Does her work systematically.

(c) Time schedules for herself and servants should be used.

(d) There should be no waste motion.

1' The kitchen should be next to the dining room.

2' The height of the sink, table, and so forth should be fitted to the height of the housewife.

(2) Result.

(a) More work can be done in a shorter time,

and with less fatigue.

(b) More time is open for recreation and relaxation.

- c. She should know how to direct servants.
- d. She should know how to take care of aged parents.
- e. She should know how to train and nurture her children.

(1) Well-trained child should know:

- (a) To respect aged persons.
- (b) Obedience for his parents and teachers.
- (c) The importance of self-respect, self-control, and self-restraint.

f. She should know how to spend money wisely.

(1) Knowledge of consumption.

- (a) Budget making.
- (b) Record accounting.

(2) Knowledge of production--Skill in using whatever resources she has for the satisfaction of family needs.

g. She should know how to raise the living standard of her family.

Suggested Problems for Students.

1. This outline is very brief, because it is a discussion course. The teacher should lead students to have frank discussions about all the subjects concerning family life. Traditional and conven-

tional family customs, such as concubinage, slavery, early marriage, the way of arranging betrothal and marriage, etc.

2. What are the disadvantages of the polygamous system to:
 - a. The status of women.
 - b. Nurture and education of children.
 - c. Family life.
3. Discuss the status of women and girls. How could you improve this?
4. Do you think it is right for a girl or a boy to break off his or her early betrothal arranged by the parents?
5. Mr. W. is a very highly educated man who has married an uneducated woman, the marriage having been arranged by his parents. He does not like her at all. Do they have to live together un-
should
happily or/they get a divorce?
6. Should a widow marry again? Study the reasons.
7. What are the conditions of servants in your home city? How could you improve them?
8. Is it reasonable to have slaves? If there is a slave in your own family, what could you do?
9. Discuss the custom of large families. Do you approve of it? If not, how could you reform it?
10. Why do many girl students look down on household

work? How could a home economics course improve this condition?

11. The efficient and economical method of managing the household should be emphasized.
12. Each student should make an individual yearly budget according to the procedure mentioned above.
13. Each student should have actual practice in keeping her own records of expenditure.
14. Discuss the ways through which the condition of home life may be improved, by conserving what is good in the past, and discarding those practices which hamper true family happiness.

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